

TEDtalks in beeld, het onthouden waard?

EEN CORPUSANALYSE VAN HET GEBRUIK VAN
VISUELE RETENTIETECHNIKEN IN ZESTIEN
POPULAIRE TEDTALKS

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Masterscriptie Neerlandistiek, track 'Argumentatie en Retorica', 20 ECTS

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September 2015, Leiden

VOORWOORD

Mijn masterscriptie. Toen ik in 2010 aan de studie Nederlandse Taal en Cultuur in Leiden begon, wist ik dat er ooit een document zou bestaan waar ik die twee woorden over zou mogen zeggen. Het was toen nog lang niet zover. Eerst mocht ik jarenlang colleges volgen over ‘nauwelijks’ en ‘bijna’, drogredenen, argumentatiestructuren, interessante literaire werken en het politieke debat in Den Haag. Nederlands is een brede studie met veel verschillende interessante vakken. Toch merkte ik al in mijn eerste jaar dat ik de vakken binnen de richting Taalbeheersing het meest kon waarderen. Dat ik in mijn master die specialisatierichting zou kiezen stond dus al snel vast.

Praten en presenteren is iets dat ik altijd graag doe, of het nu met mijn studie samenhangt of niet. Het was daarom mooi dat ik in deze master meer leerde over de kunst van het spreken en de opbouw van toespraken. Deel uitmaken van een scriptieklasje dat zich daar mee bezig zou gaan houden was dan ook een logische vervolgstap in het tweede semester van mijn master. Ik sloot me aan bij het onderzoek dat de mooie allitererende titel *Making Messages Memorable* draagt en wordt uitgevoerd door Jaap de Jong en Martijn Wackers. Ik heb de vele bijeenkomsten die we binnen dit onderzoek met elkaar hebben gehad als opbouwend en leerzaam ervaren, juist ook als het werk dat nog gedaan moest worden zich torenhoog leek op te blijven stapelen. Ik wil hen bij dezen hartelijk bedanken voor de begeleiding en het enthousiasme waarmee zij bij mij enthousiasme kweekten voor TEDtalks en de hele organisatie daaromheen. Ik vind het leuk dat ik middels deze scriptie mijn horizon heb kunnen verbreden en zelfs een paar kleine stapjes in de wereld van de psychologie heb kunnen zetten, op zoek naar de werking van het geheugen. Ik wil via deze weg ook mijn medestudenten Anna Hoogesteger en Lisanne Mijnders bedanken voor alles wat ik van hen leerde tijdens bijeenkomsten en voor de hulp die ze mij hebben gegeven bij het analyseren van de TEDtalks.

Ik ben dankbaar dat ik de afgelopen jaren met veel plezier de Nederlandse taal heb mogen bestuderen en vind het een heerlijk idee dat ik dat mijn hele leven door nog zal kunnen blijven doen. Er gaat namelijk geen dag voorbij zonder taal!

Leiden, september 2015

Ave Luth

INHOUDSOPGAVE

Voorwoord.....	2
Samenvatting	6
Hoofdstuk 1 Inleiding.....	8
Hoofdstuk 2 De werking van het geheugen	12
2.1 Van Ebbinghaus tot cognitieve psychologie: ontwikkelingen in het geheugenonderzoek.....	12
2.2 Het modale model van Atkinson en Shiffrin: een geheugensysteem.....	15
2.2.1 Het sensorisch geheugen: de opslagplaats voor een paar seconden	16
2.2.2 Het kortetermijngeheugen: onderdeel van het werkgeheugen.....	17
2.2.3 Het langetermijngeheugen: de bibliotheek in ons hoofd	20
2.3 Encoderen.....	21
2.3.1 Elaboratie	21
2.3.2 Organisatie	22
2.3.3 Visualisatie.....	23
Hoofdstuk 3 Visualisatie: een beeldend encodeerprincipe.....	24
3.1 Verschillende benaderingen van visualisatie	24
3.2 Paivio versus Baddeley	25
3.3 Een compromis van theorieën: Mayers Multimedia Learning Theory	27
3.3.1 Drie aannames.....	28
3.3.2 Vier methodes van Multimedia Learning	30
3.4 Andere onderzoeken naar woord en beeld en hun volgorde	33
3.5 Een vergelijking met andere onderzoeken naar PowerPoint.....	35
Hoofdstuk 4 Visualisatietechnieken in adviesliteratuur	37
4.1 Een opsomming van visuele technieken: van demonstratie tot mimiek	37
4.1.1 Afbeelding	39
4.1.2 Demonstratie	39
4.1.3 Elektronische presentatie	40
4.1.4 Gebaar	40
4.1.5 Handout.....	40
4.1.6 Kaart.....	41
4.1.7 Mimiek.....	41
4.1.8 Object.....	41

4.1.9 Oogcontact	42
4.1.10 Projectie	42
4.1.11 Schematische weergave	42
4.1.12 Sprezzatura.....	43
4.1.13 Verplaatsen	43
4.1.14 Videomateriaal.....	44
4.1.15 Visuele tekst.....	44
4.2 Adviestechnieken voor de analyse van TEDtalks geselecteerd	45
4.3 Terug naar de gehegentheorie	47
4.4. Props: adviezen en mogelijke werking in het geheugen	48
Hoofdstuk 5 Onderzoeksmethode: een corpusanalyse van visualisatietechnieken	50
5.1 Over TED	50
5.1.1 TEDx Delft	51
5.1.2 Coaching van de sprekers	51
5.2 Het corpus	52
5.3 Opstelling van het codeboek	54
5.4 Gebruik van het codeboek en een voorziene moeilijkheid	59
5.4.1 Volgorde van tekst en beeld.....	59
5.4.2 Onderscheid tussen statisch en dynamisch	59
5.4.3 De spreker tekent of schrijft.....	60
5.4.4 Niet relevante projectie	60
5.4.5 Meerdere codes	60
5.4.6 Tien seconden voor het beeld en tien seconden na het beeld	61
5.4.7 Mogelijke moeilijkheid in de analyse	61
Hoofdstuk 6 De analyse.....	63
6.1 Onderzoek: de uitvoering	63
6.2 Problemen tijdens de analyse	64
6.3 Controle van de analyse en de betrouwbaarheid van de methode.....	66
Hoofdstuk 7 Resultaten	69
7.1 Resultaten van het hele corpus: kwantitatief en kwalitatief geduid	69
7.1.1 Woord na beeld en beeld na woord: een zeldzaamheid.....	70
7.1.2 Afbeelding en visuele tekst, woord en beeld: meest voorkomend	71
7.1.3 Visual props: weinig gebruikt.....	73

7.1.4 Statisch versus dynamisch	74
7.2 Verder inzoomend op de verschillende talks	74
7.2.1 Hoeveelheid technieken per talk	74
7.2.2 Niet relevante afbeeldingen	75
7.2.3 Combinatie van video en woord	75
7.2.4 Veel tekst tegenover weinig tekst	76
Hoofdstuk 8 Conclusie en aanbevelingen	78
8.1 Een analysemethode in ontwikkeling	78
8.2 Visuele retentietechnieken in TEDtalks	79
8.3 Verder onderzoek	81
Bibliografie	83
Bijlagen.....	89
Bijlage 1: transcripties TEDtalks	89
Bijlage 2: analysemodellen van de talks	171
Bijlage 3: berekening Kappa	224
Bijlage 4: interview met Caryn 't Hart, curator bij TEDx Delft	227

SAMENVATTING

In dit onderzoek zijn de eerste stappen gezet voor een analyse van retentietechnieken in toespraken. Retentietechnieken zijn technieken die gebruikt kunnen worden door een spreker om ervoor te zorgen dat het publiek zijn boodschap zo goed mogelijk onthoudt. Het proces van onthouden vindt plaats in het geheugen. In adviesboeken die toegespitst zijn op het houden van een toespraak, worden de getipte technieken lang niet altijd in verband gebracht met dat proces van onthouden. Dat is vreemd, omdat de technieken juist tot doel hebben dat de informatie in het geheugen wordt verwerkt en wordt opgeslagen. Die vaak ontbrekende koppeling tussen het geheugen en de retorische benadering van toespraken wordt in dit onderzoek gemaakt, om zo beter in beeld te brengen welk effect bekende retorische technieken in een toespraak hebben op het geheugen. Ingezoomd wordt met name op visuele retentietechnieken in een corpus van TEDtalks. Dat zijn wetenschappelijk getinte toespraken die voor een lekenpubliek worden uitgesproken. Voor dit corpus is gekozen omdat de TEDtalks lang van te voren worden voorbereid en er uitgebreid wordt nagedacht over het gebruik van *visuals*, die veelvuldig voorkomen in de talks. Verder is TED een bekend merk, omdat de talks voor een groot publiek via internet toegankelijk zijn en zijn veel talks razend populair. De onderzoeksvraag die voor dit onderzoek geformuleerd is, luidt:

Wat is een geschikte methode om het gebruik van visuele retentietechnieken in een TEDtalk te detecteren en op welke manier en in welke mate maken succesvolle TED-sprekers gebruik van die retentietechnieken in hun presentatie?

De methode die ontwikkeld is om de visuele retentietechnieken in de TEDtalks te vinden is een codeboek, dat bestaat uit tabellen waarin de technieken worden onderscheiden. Op basis van de eigenschappen die in het codeboek per tabel worden behandeld, kunnen visuele technieken worden opgespoord die gebruikt zijn in een corpus van zestien geselecteerde TEDtalks. Die talks zijn afkomstig uit de lijst *The most popular talks of all time* die te vinden is op www.ted.com. De vijf hoofdtechnieken die worden onderscheiden in de talks zijn een projectie van een afbeelding, van een visuele tekst, van een schematische weergave, van videomateriaal en het tonen van een meegebracht object. Wanneer er in de talk sprake was van een van deze technieken, werd de bijbehorende code door een analysator aan de betreffende passage gelinkt in het programma *Atlas.ti*. Vooral technieken waarbij er een afbeelding of een stuk tekst op het scherm verscheen, zijn veel gebruikt in de geanalyseerde TEDtalks. De projecties

verschenen bij de meeste gecodeerde passages tegelijk in beeld met de gesproken woorden van de spreker over het geprojecteerde. Deze observatie komt overeen met de *Multimedia Learning Theory* van Richard Mayer (2001). Hij stelt dat een combinatie van woord en beeld het meest bevorderlijk is voor het opnemen van informatie in het geheugen, omdat het geheugen een visueel en een verbaal kanaal bevat, waar de informatie doorheen wordt vervoerd. De sprekers houden dus, bewust of onbewust, rekening met de werking van het geheugen. De technieken die het meest bevorderlijk zijn voor het opslaan van informatie worden in de talks regelmatig gebruikt. De gemaakte koppeling tussen de geheugentheorie en de retorische benadering van toespraken is dus een logische.

Een combinatie van woord en beeld is echter niet altijd bevorderlijk voor het opnemen van informatie in het geheugen. Wanneer er teveel informatie door het visuele kanaal moet worden vervoerd, kan dat kanaal overvol raken en verliest de verwerkingsmethode juist aan effectiviteit. Die *overload* aan informatie kan bijvoorbeeld worden veroorzaakt doordat er in beeld én tekst én een afbeelding verschijnen. Die combinatie van een tekst en een afbeelding op één dia komt ook regelmatig voor in het corpus van TEDtalks. Dat is gezien de *Multimedia Learning Theory* niet bevorderlijk voor het opslaan van informatie. Voor TED-sprekers is daar dus nog vooruitgang in te boeken met het oog op retentie bij het publiek.

Een techniek die maar zelden voorkomt in de onderzochte TEDtalks, is de techniek van het tonen van een meegebracht object, zoals het tonen van twee hersenhelften om uit te leggen hoe het brein eruitziet. Verder onderzoek waarin de geheugentheorie wordt gekoppeld aan verschillende genres van toespraken is nodig om meer gefundeerde uitspraken te kunnen doen over de visuele retentietechnieken die sprekers inzetten.

HOOFDSTUK 1 INLEIDING

Al eeuwenlang houdt de mens zich bezig met het discussiëren over en het benoemen van de eigenschappen van het brein. Zo bestempelde Alcmaeon van Croton (+/- 500 v.C.), een leerling van Pythagoras, het brein als de plaats waar gevoel en kennis zijn geplaatst (Gross 1995) en hield Plato zich in de *Phaedo* bezig met de vraag waarmee we denken. Hij vroeg zich af of het zo is dat we ons met onze hersenen bewust worden van zintuigindrukken en dat daaruit het geheugen en onze meningen voortkomen, wat kan leiden tot het echte weten.¹

Maar het daadwerkelijke onderzoek dat er naar het geheugen gedaan is, kent een veel kortere geschiedenis. De Duitse filosoof Herman Ebbinghaus (1850-1909) was de eerste die aan de hand van experimenten onderzoek deed naar het geheugen. In navolging van Ebbinghaus waren er verschillende wetenschappers die ook aan experimenteel onderzoek naar het geheugen begonnen, waardoor er tegenwoordig veel theorieën bestaan binnen de geheugentheorie. Onder andere Baddeley, Paivio, Eysenck, Anderson en Mayer zijn bekende geheugentheoretici uit de 20e en 21e eeuw, die zich bezig hebben gehouden met de manier waarop ons geheugen de informatie verwerkt die we elke dag opnieuw weer tot ons krijgen op verschillende manieren, binnen verschillende genres.

Een van die genres waarbinnen mensen voorzien worden van informatie, is het genre van toespraken. Of het nu op een wetenschappelijk congres, bij een bijeenkomst voor een huwelijksjubileum of bij een opening van een museum is, in elke situatie kunnen er toespraken gehouden worden. We gaan ervan uit dat de spreker die die speech uitspreekt graag wil dat het publiek naar het verhaal luistert. Dat zal er dan idealiter in resulteren dat de hoofdboodschap beklijft en wordt onthouden. (De term die in dit onderzoek gebruikt wordt voor het onthouden van informatie is *retentie*, dat staat voor het voor langere tijd vasthouden en reproduceren van informatie (Besterveld 2012).) Het is daarom opmerkelijk te noemen dat het veelvoorkomende genre van toespraken en het gebruik van retorische middelen in die toespraken nauwelijks wordt behandeld in de geheugentheorie. Adviesboeken daarentegen staan juist vol met tips over het gebruik van retorische middelen die het houden van een goede toespraak

¹<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0170%3Atext%3DPhaedo%3Asection%3D96b>

moeten bewerkstelligen, maar over het onthouden van de informatie wordt er in die adviesliteratuur dan weer nauwelijks gerept. Een duidelijke koppeling tussen de geheugentheorie en het gebruik van retorische middelen in toespraken ontbreekt dus in veel adviesboeken.

In de leidende geheugentheorie, die sinds de Ebbinghaustraditie steeds meer vorm heeft gekregen, is vastgesteld dat er verschillende principes ten grondslag liggen aan het opnemen van verkregen informatie in het geheugen. Onder deze principes, die encodeerprincipes genoemd worden, vallen elaboratie, organisatie en visualisatie (Baddeley, Eysenck & Anderson 2009). *Elaboratie* houdt in dat een ontvanger de verkregen informatie actief verwerkt in het brein. Dat betekent dat materiaal in het werkgeheugen in verband wordt gebracht met het materiaal dat al opgeslagen ligt in het langetermijngeheugen (Zimbardo, Johnson en McCann 2009: 139). Wanneer een spreker bijvoorbeeld een anekdote vertelt, zoekt de ontvanger, onbewust, in zijn geheugen naar associaties bij die anekdote, waardoor de informatie wordt verwerkt. Onder *organisatie* vallen ordeningstechnieken. Doordat verkregen informatie door het brein wordt geordend in groepjes, ook wel *chunking* genoemd, kan die beter worden onthouden (Gray 2014: 327). Met *visualisatie* wordt het principe bedoeld dat beelden tot ons komen en worden opgeslagen in het geheugen. Wanneer een spreker een PowerPoint of een voorwerp laat zien, komt die informatie via visualisatie het geheugen binnen (Baddeley, Eysenck & Anderson 2009: 33).

Er is nog weinig bekend over de invloed die retentietechnieken in toespraken op het geheugen kunnen hebben. In dit onderzoek worden retentietechnieken nader onderzocht en wordt de geheugentheorie gekoppeld aan het genre van toespraken. De manier waarop sprekers ervoor zouden kunnen zorgen dat hun publiek de boodschap beter onthoudt, onderbouwd vanuit de geheugentheorie, wordt behandeld en een analysemethode die kan worden toegepast op het genre van toespraken wordt in dit onderzoek bedacht en ontwikkeld. Omdat het onderzoek te omvangrijk wordt als alle drie de encodeerprincipes even uitgebreid worden behandeld, zal de focus liggen op de visualisatietechnieken.

Voor een analyse van die visualisatietechnieken is gezocht naar een geschikt corpus dat goed is afgebakend en waar de gevonden theorie op kan worden toegepast. Een genre dat zich hier goed voor leent en nog weinig onderzocht is, is het genre van de TEDtalks. Dit zijn goed voorbereide toespraken van doorgaans 18 minuten lang, waarin

een professionele spreker een idee uiteenzet dat *worth spreading* is. De talks zijn populair en in groten getale terug te vinden op www.ted.com, er is dus gemakkelijk toegang tot te krijgen.

In dit onderzoek wordt de geheugentheorie toegepast op TEDtalks; de onderzoeksvraag die daarbij geformuleerd is, luidt:

Wat is een geschikte methode om het gebruik van visuele retentietechnieken in een TEDtalk te detecteren en op welke manier en in welke mate maken succesvolle TED-sprekers gebruik van die retentietechnieken in hun presentatie?

Het beantwoorden van deze onderzoeksvraag is verdeeld in verschillende stappen. Er wordt allereerst een overzicht gegeven van verschillende theorieën uit de geheugentheorie. Dat theoretisch kader bestaat onder andere uit theorieën van Baddeley (1986) en Paivio (1986). Zij houden zich bezig met de manier waarop visuele informatie ons geheugen binnenkomt. Paivio's theorie richt zich op de gepresenteerde informatie zelf (Mayer 2009: 8) terwijl Baddeley's theorie focust op de zintuigen en hoe de gepresenteerde informatie door de zintuigen precies wordt opgenomen (Mayer 2009: 9). Deze twee verschillende theorieën komen samen in de *Multimedia Learning Theory* van psycholoog Richard Mayer, die onder andere pleit voor een combinatie van woord en beeld in een presentatie (Mayer 2009: 10). Aan de hand van die verschillende theorieën wordt duidelijker hoe retentie wordt veroorzaakt in het geheugen en op welke manier het visuele encodeerprincipe in het geheugen werkt.

Aan de hand van een lijst met adviezen uit de adviesliteratuur (Besterveld (2012) en Helderma (2013)) die ingaan op visualisatie in een presentatie, wordt duidelijk welke visuele middelen er kunnen worden ingezet in een toespraak en welke middelen vaak worden gebruikt. Ook wordt de koppeling gemaakt met de theorie. Baseren adviseurs zich op de beschikbare theorie over het geheugen bij het opstellen van een advies, of is een link ver te zoeken?

Er is een codeboek opgesteld om zestien TEDtalks te analyseren. De in de theorie en adviesliteratuur gevonden visuele retentietechnieken krijgen daarin een code die via het programma *Atlas.ti* is gekoppeld aan de gebruikte technieken in de

betreffende TEDtalk. Het aantal van zestien brengt een variëteit aan onderwerpen en toespraken met zich mee en geeft daarmee een goede indruk van het genre TEDtalks.

De zestien geselecteerde talks zijn afkomstig uit de lijst *The most popular talks of all time* en zijn het meest populair op *www.ted.com*.² Dat houdt in dat er wereldwijd veel mensen zijn die de talks hebben bekeken; sommige filmpjes hebben meer dan 40 miljoen views. Op basis van die grote aantallen kijkers, kan worden geconcludeerd dat men enthousiast is over deze TEDtalks en dat ze in zekere mate als goed, leuk en/of interessant worden gekwalificeerd. In TEDtalks wordt in vergelijking met andere gelegenheden waarbij een toespraak gehouden wordt (de troonrede van de koning of de Algemene Politieke Beschouwingen in de Tweede Kamer) veel gebruik gemaakt van visuele ondersteuning. Dat maakt de TEDtalks geschikt voor een analyse van visuele technieken.

De resultaten van de analyse zullen zowel kwalitatief als kwantitatief worden geduid, waarmee er een antwoord kan worden geformuleerd op de eerder gestelde onderzoeksvraag. Bovenstaande opbouw leidt tot de volgende indeling van dit onderzoek: in hoofdstuk 2 wordt uiteengezet wat de basisprincipes van de geheugentheorie behelzen. Ook zullen daarin de drie encodeerprincipes *elaboratie*, *organisatie* en *visualisatie* worden behandeld. Hoofdstuk 3 bevat een specificatie van de eigenschappen van het visuele encodeerprincipe en de werking van visuele signalen in het geheugen aan de hand van de *Multimedia Learning Theory* van Mayer. In hoofdstuk 4 wordt op een rij gezet welke visuele retentietechnieken door de adviesliteratuur worden besproken, waarna in hoofdstuk 5 de onderzoeksmethode en de keuze voor het corpus worden onderbouwd. Hoofdstuk 6 is het deel waarin de analyse wordt besproken en de keuzes die daarin gemaakt zijn. Hoofdstuk 7 bevat de resultaten van het onderzoek, de kwantitatieve gegevens en de kwalitatieve duiding daarvan. De conclusies van dit onderzoek en enkele aanbevelingen komen in hoofdstuk 8 aan bod.

² http://www.ted.com/playlists/171/the_most_popular_talks_of_all

HOOFDSTUK 2 DE WERKING VAN HET GEHEUGEN

In de inleiding kwam naar voren dat er een leidende geheugentheorie bestaat die sinds Ebbinghaus steeds meer vorm krijgt. In dit hoofdstuk wordt ingegaan op de ontwikkeling van die geheugentheorie en op de inhoud van die theorie. Hoe werkt het geheugen en welke processen vinden daarbinnen plaats? Dat zijn vragen waar in dit hoofdstuk verder op wordt ingegaan. Paragraaf 2.1 bevat een chronologische omschrijving van de ontwikkelingen in het geheugenonderzoek waarna er in paragraaf 2.2. uitgebreider wordt stilgestaan bij het *modale model* van Atkinson en Shiffrin. In paragraaf 2.3 wordt het proces van encoderen behandeld waarbinnen de drie encodeerprincipes *elaboratie*, *organisatie* en *visualisatie* vallen.

2.1 Van Ebbinghaus tot cognitieve psychologie: ontwikkelingen in het geheugenonderzoek

Tegenwoordig is het gebruikelijk dat we steeds weer nieuwe theorieën ontwikkelen over het doen en laten van de mens op basis van onderzoek. Zo komen we langzamerhand onder andere meer te weten over het brein van de mens. In de afgelopen decennia zijn er verschillende onderzoeken gedaan naar de functies in het brein, maar de theorieën die daarover ontstonden waren tot een paar eeuwen terug alleen maar gebaseerd op ideeën en niet op onderzoek dat er naar de processen in het hoofd werd gedaan.

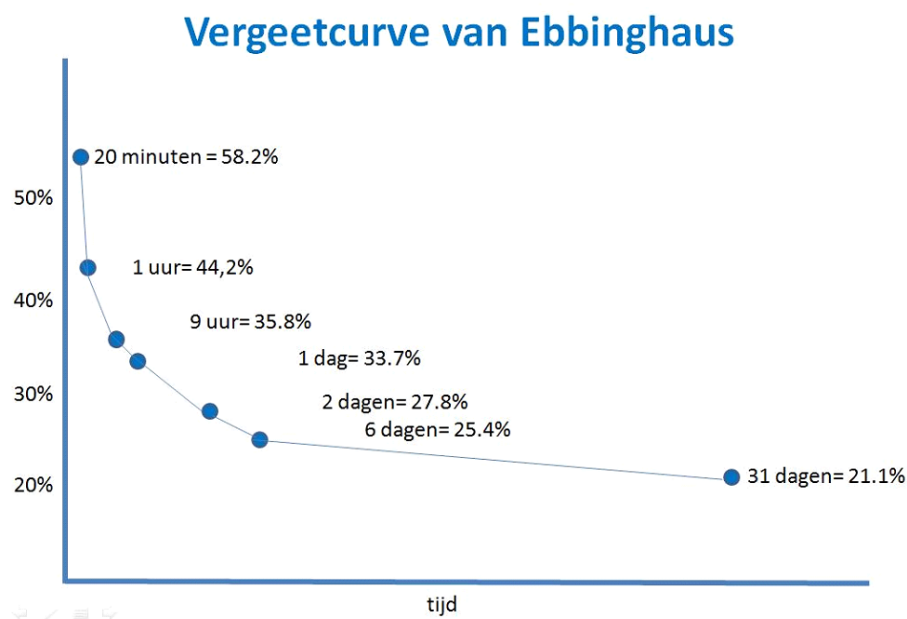
De experimentele studie naar het menselijk geheugen begon pas in 1879, toen de Duitse filosoof Hermann Ebbinghaus een experimenteel programma begon dat de hele studie van de cognitieve psychologie veranderde. Wilhelm Wundt en Gustav Fechner waren een paar jaar eerder weliswaar de grondleggers van experimenteel psychologisch onderzoek, maar experimenteel onderzoek naar hogere mentale processen als de werking van het geheugen, was voor de twee Duitse filosofen nog een brug te ver (Baddeley 1976: 3).

Niet voor Ebbinghaus, die zichzelf als voorwerp van studie zag. Hij leerde niet-bestaande woorden uit zijn hoofd, woorden als *wuz*, *caz* en *zol*, en noteerde precies hoe veel herhalingen van deze ‘woorden’ hij nodig had om ze te onthouden. Daarmee was het eerste geheugenexperiment een feit (Baddeley, Eysenck & Anderson 2009: 69, 70). In de uitbreiding van zijn theorie over het geheugen, probeerde Ebbinghaus een antwoord te formuleren op de vragen:

- Hoe snel kan informatie toegevoegd worden aan het systeem in ieders hoofd?
- Hoeveel informatie kan worden opgeslagen?
- Hoe snel is de informatie weer uit het systeem verdwenen? (Baddeley 1976: 5)

Die laatste vraag beantwoordde Ebbinghaus door steeds opnieuw de oorspronkelijke lijst met woorden te leren als hij zich geen woord meer kon herinneren. Hij hield vervolgens bij hoeveel pogingen hij nodig had om de lijst weer uit zijn hoofd te kennen. Hij concludeerde dat er in de eerste dagen na het uit het hoofd leren een groter deel van de betekenisloze data verloren ging dan na een aantal weken. Hij gaf dat weer in een vergeetcurve (figuur 1) (Zimbardo, Weber & Johnson 2008: 267).

Figuur 1, vergeetcurve van Ebbinghaus



Deze benadering van het geheugen, door middel van het leren van bestaande en niet-bestaande woorden onderzoeken hoelang informatie kan worden opgeslagen in het geheugen, wordt ook wel de *verbal learning approach* genoemd (Baddeley, Eysenck & Anderson 2009: 4). Door deze benadering ontdekte Ebbinghaus dat je twee keer zoveel informatie kunt onthouden als je de tijd dat je leert verdubbelt, de *total time hypothesis* (Baddeley, Eysenck & Anderson 2009: 70). Met deze eerste hypothese in het experimentele onderzoek naar het geheugen was de toon gezet.

Een nieuwe ontwikkeling volgde een aantal decennia later. In het begin van de jaren 30 kwam er een stroming op die zich bezighield met de waarneming van een mens en hoe die georganiseerd is in het hoofd: de Duitse *Gestaltpsychologie*. De nadruk kwam in deze benadering minder te liggen op het verbale aspect en meer op het visuele. De interne representaties werden belangrijker (Baddeley, Eysenck & Anderson 2009: 4). Dat houdt in dat de Gestaltpsychologen ervan uitgingen dat de beelden die mensen waarnemen, geïnterpreteerd worden door wat de hersenen al weten. Hersenen zijn van nature geneigd op zoek te gaan naar patronen, waardoor men bijvoorbeeld in bekende liedjes vertrouwde melodieën hoort in plaats van afzonderlijke noten die op elkaar volgen, en een vierkant wordt door de hersenen waargenomen als één geheel en niet als vier lijnen die aan elkaar vastzitten (Zimbardo, Weber & Johnson 2008: 193).

Een derde benadering van het geheugen ontstond in dezelfde tijd en was vooral een afwijzing in de richting van Ebbinghaus' benadering van het geheugen, die zou te simpel zijn. Frederic Bartlett publiceerde in 1932 het boek *Remembering*, waarin hij pleitte voor complex materiaal om onderzoek mee te doen. Dat was veel reëler en paste veel beter bij het leven van alledag dan de zelfverzonnen woorden van Ebbinghaus. Mensen herinneren zich sneller dingen die passen binnen hun eigen kennissysteem en denkpatroon, was zijn redenering (Bartlett 1995: 8). Bartlett ondervond binnen zijn theorie wel een probleem: er was nog weinig bekend over de onderzoeksmethode van de moeilijk te bereiken innerlijke representaties. Zijn theorie kon dus moeilijk worden getest binnen het geheugenonderzoek.

Met de komst van computers halverwege de 20^e eeuw leek daar verandering in te komen. De Schotse psycholoog Kenneth Craik die samenwerkte met Bartlett, schreef in 1943 het boek *The Nature of Explanation*, waarin hij het idee uitdroeg dat het geheugen modellen ontwikkelt die gebaseerd zijn op gebeurtenissen uit de werkelijkheid, waarmee het geheugen soortgelijke gebeurtenissen in de toekomst kan zien aankomen:

‘If the organism carries a “small-scale model” of external reality and of its own possible actions within its head, it is able to try out various alternatives, conclude which is the best of them, react to future situations before they arise, utilize the knowledge of past events in dealing with the present and the future, and in every way to react in a much fuller, safer, and more competent manner to the

emergencies which face it.' (Craik 1943: 61)

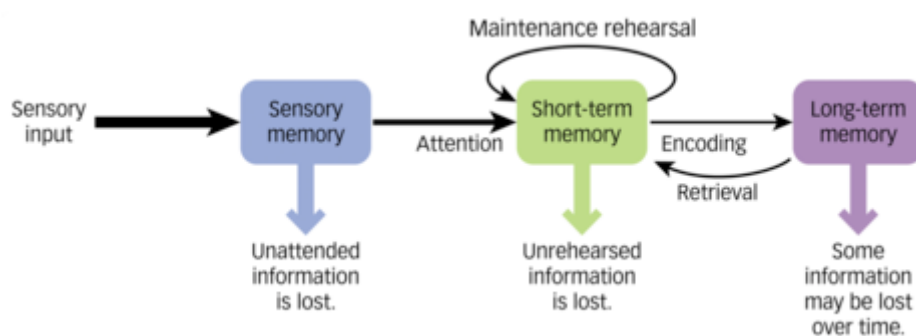
Hij gebruikte de computer om die modellen verder te ontwikkelen (Baddeley, Eysenck & Anderson 2009: 5). Door de komst van deze elektronische systemen werd het geheugen van de mens ook meer als zodanig gezien. De computer werd een metafoor voor het menselijk geheugen. Elk systeem, zowel een elektronisch systeem als een menselijk systeem, bestaat uit drie stadia die nauw met elkaar zijn verbonden: de mogelijkheid om informatie te encoderen (in het systeem toe te laten), om die informatie op te slaan en om die weer terug te halen (Zimbardo, Weber & Johnson 2008: 243). Deze cognitieve benadering werd voor het eerst *Cognitieve Psychologie* genoemd door de Amerikaanse psycholoog Ulrich Neisser, die daarmee de basis legde voor de tak in de psychologie die zich tot op de dag van vandaag onder andere bezighoudt met de werking van het geheugen.

2.2 Het modale model van Atkinson en Shiffrin: een geheugensysteem

Het idee van een geheugensysteem dat meerdere onderdelen bevat, werd verder ontwikkeld door de Amerikaanse psychologen Richard Atkinson en Richard Shiffrin, die in 1968 het *modale model van het geheugen* presenteerden (Atkinson & Shiffrin 1968), waarmee ze een duidelijke brug sloegen tussen waarneming en het geheugen. Het woord 'modaal' betekent in dit geval dat dit model gezien werd als representatief voor andere modellen uit die tijd, het was een standaardbenadering van het geheugen. Het woord 'model' wijst op de weergave van het geheugen die in dit model schematisch is. Het is uiteraard niet zo dat de verschillende opslagplaatsen netjes geordend als vierkante boxen in ons hoofd zitten, maar via dit model kunnen we beter begrijpen wat er in ons brein gebeurt.

De drie zojuist beschreven stadia (encoderen, opslaan en terughalen) hebben alle drie een plaats in het *modale model*, dat hieronder is weergegeven.

Figuur 2, het modale model van het geheugen, door Atkinson & Shiffrin (1968)



Het geheugen bevat volgens dit model drie types geheugenopslag: het sensorisch geheugen, het werkgeheugen (ook wel kortetermijngeheugen) en het langetermijngeheugen. Elke opslagplaats heeft haar eigen functie, opslagruimte en duur (de duur dat informatie kan worden vastgehouden) (Gray 2010: 310, 311). Die verschillende onderdelen en processen van het *modale model* worden in de komende subparagrafen uiteengezet.

2.2.1 Het sensorisch geheugen: de opslagplaats voor een paar seconden

De plaats waar informatie het kortst wordt opgeslagen, is het sensorisch geheugen. Wanneer een spreker zijn luisteraar geërgerd verwijt dat die niet naar hem luistert, wordt dat vaak door de luisteraar tegengesproken door de laatste paar zinnen van de spreker te herhalen. Hoewel het herhalen van de gesproken woorden wijst op een geïnteresseerde luisteraar, hoeft dat niet het geval te zijn. Het sensorisch geheugen faciliteert namelijk de mogelijkheid om de woorden te herhalen, zonder dat er daadwerkelijk inhoudelijk naar de gesproken tekst geluisterd is. In het sensorisch geheugen worden beelden, geluiden, geuren en andere zintuiglijke indrukken opgenomen, die voor een korte tijd beschikbaar blijven. Die korte tijd, een paar seconden, is net lang genoeg voor het geheugen om te onderzoeken of er aandacht aan de informatie moet worden besteed. Als de indrukken die we opdoen langer zouden worden vastgehouden door het sensorisch geheugen, zouden die sensorische herinneringen de verwerking van nieuwe indrukken verstoren (Zimbardo, Weber & Johnson 2008: 251).

Het sensorisch geheugen wordt onderverdeeld in drie onderdelen waarvan er twee veel worden onderzocht in het geheugenonderzoek. De drie onderdelen zijn het iconisch geheugen, het echoïsch geheugen en het haptisch geheugen. In het iconisch

geheugen komt alle visueel waargenomen informatie terecht, terwijl auditieve informatie in het echoïsch geheugen belandt. De in onderzoek vaak onderbelichte derde variant in het sensorisch geheugen, het haptisch geheugen, bevat informatie die we via aanraking waarnemen. Dat kan bijvoorbeeld een streling over de wang zijn, of een pijnlijke tik op de hand (Gray 2010: 311) (Baddeley, Eysenck & Anderson 2009: 7).

Wanneer de in het sensorisch geheugen binnengekomen informatie als belangrijk genoeg wordt beschouwd, wordt die toegelaten tot het werkgeheugen, ook wel kortetermijngeheugen genoemd.

2.2.2 Het kortetermijngeheugen: onderdeel van het werkgeheugen

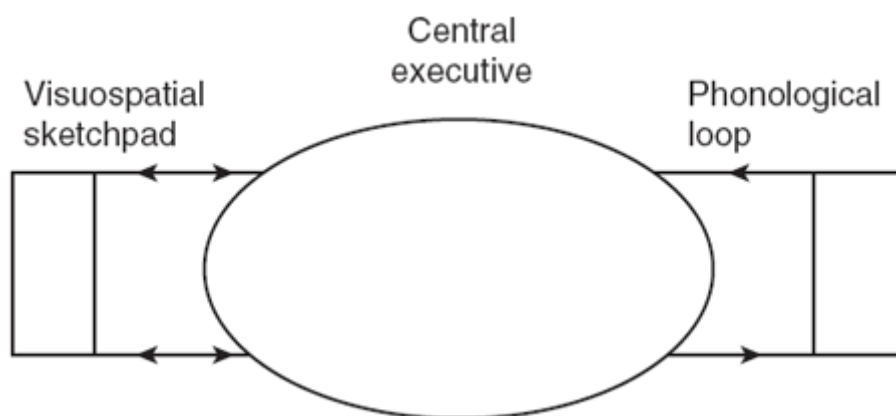
Het werkgeheugen is de grote werkplaats van het geheugen. Alle informatie die daar terecht komt, dringt tot ons bewustzijn door, in tegenstelling tot de informatie die een paar seconden in ons sensorisch geheugen zit. Net als in het sensorisch geheugen zal veel informatie die binnenkomt helemaal verdwijnen, maar de tijd die daarvoor nodig is, is iets langer dan de tijd die het sensorisch geheugen nodig heeft om informatie te laten verdwijnen. Informatie in het werkgeheugen blijft daar zo'n 15 – 30 seconden in opgeslagen. Hoewel de duur van de opslag in het werkgeheugen langer is dan in het sensorisch geheugen, is de opslagcapaciteit vele malen kleiner. Zo kan het werkgeheugen ongeveer zeven items bevatten. Wanneer dat er meer worden, is het vaak zo dat de oudste informatie uit het hoofd verdwijnt. Maar, als het werkgeheugen gevuld is met informatie die op dat moment allemaal even belangrijk lijkt, dan kan er juist geen nieuwe informatie bij, of die informatie nu belangrijker is of niet (Zimbardo, Weber & Johnson 2008: 253).

Het werkgeheugen wordt ook wel het kortetermijngeheugen genoemd. Toch zijn deze twee termen niet gelijk. Het kortetermijngeheugen kan volgens Baddeley beter gezien worden als onderdeel van het werkgeheugen. Het kortetermijngeheugen wijst dan op de simpele taak van het onthouden van kleine hoeveelheden informatie, zoals het onthouden van een telefoonnummer dat in een telefoonboek wordt opgezocht, of het onthouden van de naam van degene die zich net heeft voorgesteld. Het werkgeheugen omvat meer. Deze term gebruiken psychologen voor: 'a system that not only temporarily stores information but also manipulates it so as to allow people to perform such complex activities as reasoning, learning, and comprehension' (Baddeley, Eysenck & Anderson 2009: 19). In figuur 2 is er dan ook te zien dat er op verschillende manieren

interactie plaatsvindt tussen het sensorisch geheugen en het werkgeheugen en het werkgeheugen en het langetermijngeheugen. (In figuur 2 is in plaats van de term *working memory*, de term *short-term memory* genoteerd, maar naar analogie van de benadering van Baddeley wordt het kortetermijngeheugen onder het werkgeheugen geschaard en in dit onderzoek dus ook werkgeheugen genoemd.) Zo geeft het sensorisch geheugen informatie door aan het werkgeheugen, wordt er informatie verwerkt in het werkgeheugen zodat het opgeslagen kan worden in het langetermijngeheugen, kan er informatie worden teruggehaald uit het langetermijngeheugen en wordt er informatie herhaald, zodat het langer kan blijven hangen in het werkgeheugen (Atkinson & Shiffrin 1968: 92).

Om een beter beeld te krijgen van het werkgeheugen, breidden Baddeley en Hitch het *modale model* van Atkinson en Shiffrin uit met het *multicomponent model*. Dit is een model dat gedetailleerder in beeld brengt welke processen er plaatsvinden in het werkgeheugen. Het werkgeheugen wordt volgens dit model geleid door *the central executive*. Dat systeem selecteert en manipuleert materiaal dat vervolgens in de subsystemen terecht komt. Die subsystemen zijn *the phonological loop* en *the visuospatial sketchpad*. Schematisch weergegeven ziet het *multicomponent model* er als volgt uit:

Figuur 3, het multicomponent model van Baddeley en Hitch



Onder de *visuospatial sketchpad* wordt het opslaan en het verwerken van beeld in het geheugen verstaan. De *phonological loop* bevat het opslaan en verwerken van verbaal materiaal. Hoe de drie componenten met elkaar kunnen interacteren, kan duidelijk worden gemaakt met het volgende voorbeeld. Wanneer iemand gevraagd wordt om te

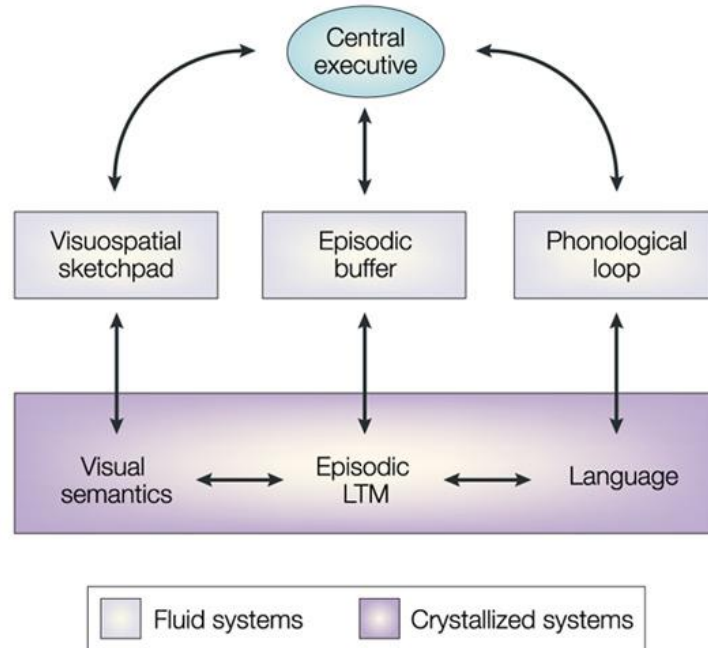
benoemen hoeveel ramen zijn huis heeft, maakt hij vaak een beeld van het huis in z'n hoofd. Dat zou je een tekening op een schetsblok kunnen noemen (*visuospatial sketchpad*). Vervolgens telt de persoon in kwestie de ramen (woordelijk, dus de *phonological loop*). De *central executive* brengt die twee processen samen, waardoor de ondervraagde het aantal ramen kan benoemen dat zijn huis telt.

Maar, met deze drie componenten is het *multicomponent model* nog niet compleet. Er mist namelijk een link tussen de drie onderdelen in het werkgeheugen en het langetermijngeheugen. Het aantal items dat een mens kan opslaan in het werkgeheugen bedraagt gemiddeld zeven. Baddeley ontdekte dat er maar twee of drie van die items afkomstig zijn uit de *phonological loop* en dus uit het werkgeheugen. De overige items zijn opgeslagen in het langetermijngeheugen. Er vindt dus interactie plaats tussen het langetermijngeheugen en het werkgeheugen. Die interactie wordt ondersteund door de *episodic buffer*, de vierde component van het door Baddeley en Hitch ontwikkelde model, die in contact staat met het episodisch geheugen dat zich in het langetermijngeheugen bevindt (Baddeley, Eysenck & Anderson 2009: 44-58). In 2001 voegde Baddeley deze component toe aan het model en legde uit:

‘The episodic buffer is assumed to be capable of storing information in a multi-dimensional code. It thus provides a temporary interface between the slave systems (the phonological loop and the visuospatial sketchpad) and long-term memory (LTM). It is assumed to be controlled by the central executive, which is responsible for binding information from a number of sources into coherent episodes. Such episodes are assumed to be retrievable consciously. The buffer serves as a modelling space that is separate from LTM, but which forms an important stage in long-term episodic learning.’ (Baddeley 2000)

Met deze toevoeging bestaat het *multicomponent model* uit vier onderdelen:

Figuur 4, het vernieuwde multicomponent model³



De *central executive* bestuurt de *visuospatial sketchpad*, de *episodic buffer* en de *phonological loop*, die respectievelijk verantwoordelijk zijn voor het opslaan van visuele informatie, de interactie tussen het werkgeheugen en het langetermijngeheugen en het opslaan van verbale informatie. Dat opslaan van visuele en verbale informatie is maar heel tijdelijk als er verder niets meer mee gedaan wordt door het werkgeheugen. Na nog geen minuut gaat de informatie dan verloren. Als het werkgeheugen er wel verder mee aan het werk gaat, kan de informatie op een gegeven moment worden overgezet naar het langtermijngeheugen, de laatste ‘geheugenbox’ uit het *modale model* van Atkinson en Shiffrin.

2.2.3 Het langetermijngeheugen: de bibliotheek in ons hoofd

Het langetermijngeheugen bevat de informatie die ons de mogelijkheid geeft om ons geluiden, gebeurtenissen, gevoelens etc. te herinneren die we al eerder hebben gehoord of hebben meegemaakt. Zo onthoudt een mens hoe woorden moeten worden geschreven, wat hij gisteravond gegeten heeft en hoe een oude vriend van de basisschool heet. We zijn ons niet bewust van alle informatie die er opgeslagen is in ons langetermijngeheugen, maar wel wanneer die informatie geactiveerd wordt en wordt verzonden naar het werkgeheugen. Het langetermijngeheugen is daarmee net als een

³ http://www.nature.com/nrn/journal/v4/n10/fig_tab/nrn1201_F5.html

bibliotheek waar verschillende boeken liggen opgeslagen zonder dat ze gebruikt worden, totdat een boek geleend wordt en van de boekenplank wordt gehaald (Gray 2010: 312).

Het langetermijngeheugen bevat een expliciet en een impliciet geheugen. In het expliciete geheugen zitten gegevens opgeslagen die betrekking hebben op kennis van de wereld (semantisch geheugen) en op gebeurtenissen uit het verleden (episodisch geheugen). Het impliciete geheugen gebruiken we om vaardigheden die we ooit hebben geleerd toe te passen. Kunnen fietsen, weten hoe je piano speelt, die vaardigheden zitten opgeslagen in het impliciete geheugen. In tegenstelling tot het werkgeheugen heeft het langetermijngeheugen een grote opslagcapaciteit en kan informatie soms zelfs een leven lang bewaard blijven (Baddeley, Eysenck & Anderson 2009: 10).

In dit onderzoek wordt onderzocht welke retentietechnieken er worden gebruikt in speeches. Wanneer retentie plaatsvindt, wordt er informatie uit het langetermijngeheugen teruggehaald (in figuur 2 beschreven als *retrieval*) die daar eerder in is geplaatst (in figuur 2 beschreven als *encoding*). Voordat er verder kan worden ingegaan op retentietechnieken die bevorderend werken voor het onthouden van informatie, is het daarom nodig om het encodeerproces in het geheugen nader te bekijken.

2.3 Encoderen

Lang niet alle informatie die in het werkgeheugen terechtkomt, wordt uiteindelijk opgeslagen in het langetermijngeheugen. Zoals te zien is in figuur 2, kan het geheugen informatie blijven herhalen (*maintenance rehearsal*) waardoor de informatie iets langer bewaard blijft, maar daarmee blijft de informatie in het werkgeheugen hangen. Door middel van *encoding rehearsal* kan informatie wel worden toegevoegd aan de langetermijnopslag in het geheugen. De factoren die de effectiviteit van het encoderen bevorderen zijn *elaboratie*, *organisatie* en *visualisatie* (Gray 2010: 325-330).

2.3.1 Elaboratie

Het proces van elaboratie gaat dieper dan het simpelweg herhalen van informatie om het zo te blijven herinneren. Bij elaboratie is het doel dat de informatie wordt begrepen. Door middel van het stellen van vragen over de gelezen of gehoorde informatie, verwerkt het geheugen de stof dieper. Uit onderzoek van Craik en Tulving (1975) blijkt

dat ondervraagden woorden beter onthouden als ze er tijdens de test een betekenis aan moeten verbinden, dan wanneer ze alleen moeten benoemen of het woord met een hoofdletter is gedrukt of niet. Ezelsbruggetjes helpen dus ook goed om informatie beter te onthouden. Omdat het geheugen betekenis toekent aan de woorden, kan er een link worden gelegd tussen materiaal dat al opgeslagen ligt in het langtermijngeheugen en materiaal dat wordt verwerkt in het werkgeheugen. Die koppeling tussen oude en nieuwe informatie is de kern van elaboratie (Gray 2010: 325-327).

Elaboratie is afhankelijk van de hoeveelheid kennis die al in het langetermijngeheugen zit opgeslagen. Iemand met een bredere hoeveelheid kennis is makkelijker in staat nieuwe informatie te koppelen aan al bestaande kennis. Daarnaast is er vanzelfsprekend aandacht nodig om elaboratie te bewerkstelligen. ‘It seems clear that attention to the word's meaning is a necessary prerequisite of good retention’ (Craik & Tulving 1975: 269). Wanneer er geen aandacht is, gaat het geheugen niet actief aan de slag met het zoeken naar associaties in het langetermijngeheugen. Voor een spreker is het dus van groot belang dat het publiek aandacht heeft voor wat hij zegt. Dat advies wordt zelfs al in de klassieke oudheid gegeven door Quintilianus. Vanaf de eerste minuten is het van belang dat het publiek luistert (De Jong & Andeweg 2004: 35).

2.3.2 Organisatie

De effectiviteit van het encoderen van informatie wordt verder bevorderd door organisatie van de informatie. Net als bij elaboratie, is het bij organisatie van belang dat informatie niet alleen herhaald wordt, maar dat er ook over wordt nagedacht en dat er betekenis aan wordt gegeven. Dat kan door middel van *chunking* en door middel van *hiërarchische organisatie*. *Chunking* is het groeperen van items die op het eerste gezicht los van elkaar staan. Door ze samen tot één item te maken, kan er meer informatie worden onthouden. Het onthouden van een serie willekeurige letters is moeilijk als de letters niets met elkaar te maken lijken te hebben. Het onthouden van de letters A T S C F N H A S I T gaat veel makkelijker als daar het woord F A N T A S T I S C H van wordt gemaakt. Door de letters tot één item te organiseren, is er meer ruimte in het werkgeheugen voor andere items en kunnen de letters beter worden geëncodeerd naar het langtermijngeheugen. Bij het organiseren van de letters hebben we tegelijk te maken met elaboratie. Er wordt namelijk een betekenis toegevoegd aan de nieuwe informatie.

Hiërarchische organisatie is een ander onderdeel van organisatie. In een hiërarchie worden items die aan elkaar gerelateerd zijn geclusterd in een categorie, die onderdeel uitmaakt van een grotere structuur. Zo wordt het overzicht bewaard en kan er sneller meer informatie worden verwerkt (Gray 2010: 327 – 329).

2.3.3 Visualisatie

Visualisatie is een derde factor die het encodeerproces kan bevorderen. Verbale informatie wordt middels visualisatie namelijk niet alleen verbaal maar ook visueel verwerkt. Wanneer het woord ‘kat’ onthouden moet worden, blijft dat beter hangen als er ook het beeld van een kat bij wordt gevoegd. Op die manier zijn er als het ware twee ‘kansen’ voor het geheugen om de gegeven informatie te bewaren. Naast het feit dat visualisatie een toevoeging voor verbale informatie is, kan visualisatie ook het proces van *chunking* ondersteunen. Als iemand die je nog nooit ontmoet hebt aan de hand van verschillende kenmerken wordt omschreven, kan het geheugen door middel van visualisatie de kenmerken bij elkaar nemen en één beeld schetsen van de persoon in kwestie (Gray 2010: 330). In dit onderzoek zal het proces van visualisatie verder worden uitgediept dan de twee andere encodeerprincipes, elaboratie en organisatie. Wat er bij visualisatie gebeurt in het geheugen en waarom visualisatie bevorderend werkt voor het encodeerproces, wordt in hoofdstuk 3 uitgewerkt. Ook is daar te lezen dat visualisatie niet altijd een goede toevoeging is bij een presentatie. Er kan ook teveel gevisualiseerd worden, waardoor het geheugen een *overload* aan informatie moet verwerken.

HOOFDSTUK 3 VISUALISATIE: EEN BEELDEND ENCODEERPRINCIPE

In de analyse van TEDtalks die later in dit onderzoek aan bod zal komen, worden visuele technieken geanalyseerd. Om te begrijpen wat dat visuele materiaal in het geheugen teweegbrengt, zal in dit hoofdstuk verder worden ingezoomd op het encodeerprincipe *visualisatie* en hoe dat in het geheugen werkt. In paragraaf 3.1 wordt het verschil weergegeven in de geschiedenis van het geheugenonderzoek tussen de visuele en de verbale benadering. Paragraaf 3.2 bevat de gedachtegang van Paivio (1971, 1986) die wordt vergeleken met de benadering van Baddeley (1976, 1986). Mayer nam beide benaderingen mee in zijn *Multimedia Learning Theory*, die in paragraaf 3.3 wordt behandeld. Paragraaf 3.4 weidt uit over andere onderzoeken naar het gebruik van woord in combinatie met beeld en paragraaf 3.5 besluit dit hoofdstuk met een korte vergelijking met andere onderzoeken naar visueel materiaal in presentaties.

3.1 Verschillende benaderingen van visualisatie

In hoofdstuk 2 werd duidelijk dat er in de ontwikkeling van het onderzoek naar het menselijk geheugen vanuit verschillende invalshoeken naar het geheugen werd gekeken. Zo benaderde Ebbinghaus het geheugen vooral verbaal. Hij testte zichzelf door woorden uit zijn hoofd te leren. Door de Gestaltpsychologen werd er een meer visuele benadering gekozen. Niet de stimuli die zich buiten het menselijk lichaam bevonden waren van belang, maar juist de waarneming van de mens zelf en de innerlijke representatie van gebeurtenissen. Volgens die visuele benadering zou het geheugen op zoek gaan naar patronen op basis van beelden die men ziet. Verder werd duidelijk bij de behandeling van het sensorisch geheugen, dat de mens met zintuigen informatie tot zich neemt. Het opslaan van informatie bleef daarmee niet beperkt tot het onthouden van woorden, maar ook tot het onthouden van gevoelens, geluiden, beelden en andere informatie die via zintuigen het geheugen binnenkomt. Psychologen die zich uitgebreid hebben beziggehouden met de visuele kant van het menselijk geheugen zijn Baddeley, Paivio en Mayer.

3.2 Paivio versus Baddeley

Allan Paivio, een Canadese psycholoog, ontwikkelde begin jaren zeventig van de vorige eeuw de *dual-coding theory*, waarmee hij beweerde dat er twee kanalen bestaan in het geheugen die respectievelijk verbale en visuele informatie verwerken (1971). Hoewel bekend was dat de mens niet alleen verbaal informatie opslaat in het geheugen, werd de waarde van het visuele voorstellingsvermogen onderschat. Paivio wilde aantonen dat dat onterecht was en dat woorden nog beter zouden kunnen worden onthouden wanneer er gemakkelijk een beeld van het te onthouden woord kon worden opgeroepen.

Woorden waarvan de afbeelding makkelijk voor te stellen is, woorden als *kerk*, *krokodil*, *theepot* en *appel*, kunnen veel makkelijker worden onthouden dan woorden die niet zo concreet zijn, woorden als *geschiedenis*, *stilte*, *hoop* en *idee*. De concrete woorden kunnen namelijk worden geëncodeerd op basis van het beeld dat er van die woorden in het geheugen bestaat en op basis van de betekenis van de woorden (Baddeley, Eysenck & Anderson 2009: 98):

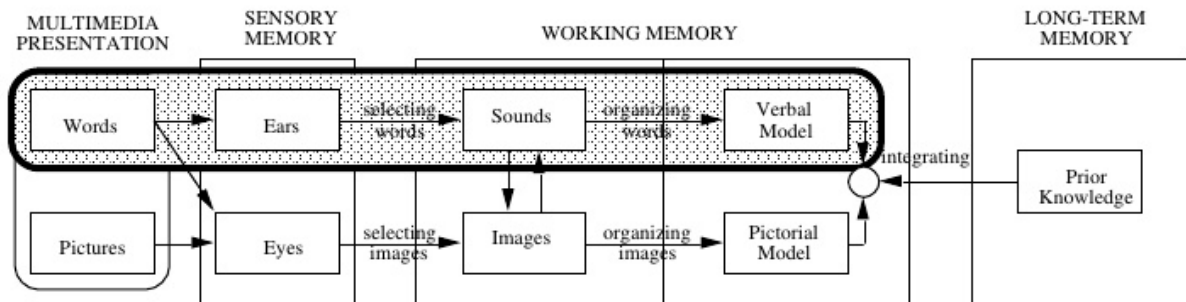
‘Recall increases with concreteness because the items are increasingly likely to be stored in both the verbal and the nonverbal code, or at least experienced in both forms. Thus concrete words not only are read or heard but some of them also evoke referent images; familiar pictures are perceived (images are aroused), and implicit labeling is highly probable particularly if the subject knows that verbal recall will be required. The increased availability of both codes increases the probability of item recall because the response can be retrieved from either code - one code could be forgotten during the retention interval, but verbal recall would still be possible provided that the other is retained.’ (Paivio 1971: 207)

Die twee manieren van verwerking in het geheugen (zowel via een afbeelding als via de betekenis van het woord) in de *dual-coding theory* van Paivio wijzen op twee verschillende kanalen in ons geheugen. Het idee dat ieder mens die twee kanalen in het geheugen heeft, is uitgewerkt in de *dual-channel assumption*. Die houdt in dat een mens gescheiden kanalen in het geheugen bezit die visueel gepresenteerd en auditief gepresenteerd materiaal gescheiden verwerken. Wanneer informatie non-verbaal wordt voorgesteld (plaatjes, video's, tekst op het scherm), wordt het via het visuele kanaal

verwerkt. Wanneer de informatie verbaal wordt voorgesteld (vertelling, geluiden), wordt het via het audiokanaal verwerkt. In het figuur hieronder zijn de twee kanalen apart schematisch weergegeven (Mayer 2009: 64).

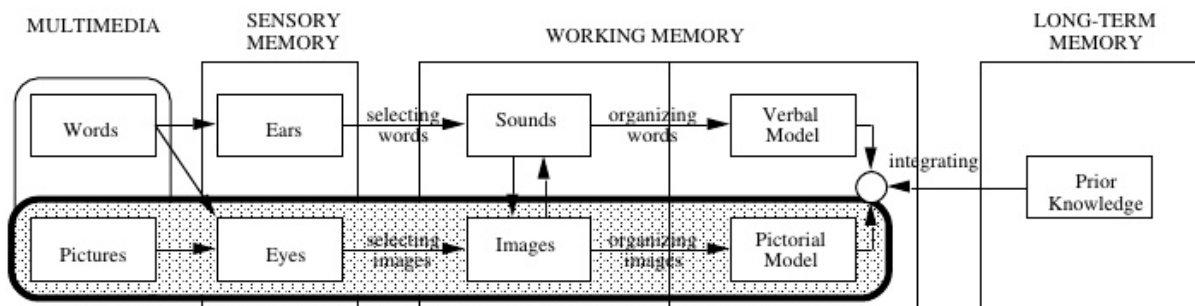
Figuur 5, het audiokanaal in het modale model

Auditory/Verbal Channel Highlighted



Figuur 6, het visuele kanaal in het modale model

Visual/Pictorial Channel Highlighted



Iemand die ook uitging van de *dual-channel assumption* was Baddeley (1976). Ook hij erkende dat een mens twee kanalen in het geheugen heeft waarlangs verbale en non-verbale informatie wordt verwerkt. Anders dan Paivio, focuste hij op de zintuigen van de mens. Hij keek niet naar de manier waarop de informatie gepresenteerd werd (verbaal versus non-verbaal), maar naar de zintuigen die werden aangesproken door het gepresenteerde materiaal. Wanneer gepresenteerd materiaal door de ogen wordt gezien, wordt het visueel verwerkt en wanneer gepresenteerd materiaal door de oren wordt gehoord, wordt het auditief/verbaal verwerkt. Zijn benadering wordt ook wel de *sensory-modality* benadering genoemd, tegenover de *presentation-mode* benadering van

Paivio. Baddeley's benadering van de twee kanalen focust zich dus op de zintuigen die worden aangesproken door de gepresenteerde informatie. In zijn benadering gebruikt Baddeley de eerder genoemde subsystemen in het werkgeheugen: de *visuo-spatial sketchpad* en de *phonological loop*, die verantwoordelijk zijn voor respectievelijk beeld en woord.

Het onderscheid tussen de benaderingen van Paivio en Baddeley is van belang bij het volgen van de verwerking van de informatie door gescheiden kanalen. Volgens Paivio zal geprojecteerde tekst op een scherm namelijk verbaal worden verwerkt (de informatie wordt immers gepresenteerd door middel van tekst/woorden), terwijl Baddeley bij eenzelfde presentatie van informatie zal beweren dat de informatie door de ogen wordt opgenomen en dus door het visuele kanaal wordt verwerkt. Dit verschil in benadering was voor de Amerikaanse psycholoog Richard Mayer geen reden om één van de twee benaderingen links te laten liggen toen hij onder andere op basis van de gedachtegangen van Baddeley en Paivio zijn *Multimedia Learning Theory* presenteerde (Mayer 2009: 65).

3.3 Een compromis van theorieën: Mayers Multimedia Learning Theory

Mayer, die gespecialiseerd is in de educatieve psychologie, heeft zich in zijn wetenschappelijk onderzoek gericht op de studie naar hoe een mens leert. Een mens leert door informatie op te slaan en weer terug te halen op de momenten dat er naar de informatie gevraagd wordt. Leren is dus een continu proces van *encoderen* en *retentie*, waarbij het werkgeheugen en het langetermijngeheugen informatie uitwisselen. In 1986 ontwikkelde Mayer de *Multimedia Learning Theory*, waarin hij uitgaat van de hypothese dat het leren en dus onthouden van informatie sneller gaat wanneer de uitleg is gepresenteerd in woord én beeld. De manier waarop men kan leren van multimedia noemt hij de *multimedia instruction*:

‘the presentation of material using both words and pictures, with the intention of promoting learning. By words, I mean that the material is presented in *verbal form* – using printed or spoken text, for example. By pictures, I mean that the material is presented in *pictorial form*, including using static graphics such as

illustrations, graphs, photos, or maps, or dynamic graphics such as animations or video.’ (Mayer 2009: 5)

Voor de goede orde: het begrip *multimedia* wordt in de *Multimedia Learning Theory* niet gebruikt als zelfstandig naamwoord. In het dagelijks leven betekent *multimedia* vaak ‘meer dan één medium’. Er wordt dan gefocust op de middelen waarmee een boodschap kan worden gepresenteerd, maar Mayer wil zich juist richten op de *learners*, de mensen voor wie de informatie bedoeld is. Hij benadrukt daarom uit te gaan van de eerder genoemde *presentation-mode* benadering en de *sensory-modality* benadering. In het volgende overzicht is nog eens te zien waar de benaderingen van elkaar verschillen.

Figuur 7, de drie verschillende Multimedia Views

View	Definition	Example
Delivery media	Two or more delivery devices	Computer screen and amplified speakers
Presentation modes	Verbal and pictorial representations	On-screen text and animation
Sensory modalities	Auditory and visual senses	Narration and animation

(Mayer 2009: 5-10)

3.3.1 Drie aannames

Mayer formuleert drie aannames die de basis vormen voor zijn cognitieve theorie van *Multimedia Learning*.

Allereerst de al eerder genoemde *dual-channel assumption*, die het sensorisch geheugen en het werkgeheugen in twee kanalen verdeelt. Mayer neemt zowel de benadering van Baddeley (de *sensory-modality*) als de benadering van Paivio (de *presentation-mode*) mee in die verdeling. Het linkerdeel van het werkgeheugen, waarin *sounds* en *images* met elkaar in contact staan, bevat de *sensory-modality view*, waar wordt gefocust op de zintuigen en of de informatie via geluiden of via afbeeldingen het geheugen binnenkomt. Het rechterdeel van het werkgeheugen, waarin verbaal en

pictoriaal gepresenteerde informatie in verbinding staat met eerdere kennis die al is opgeslagen in het langetermijngeheugen, bevat de *presentation-mode view*.

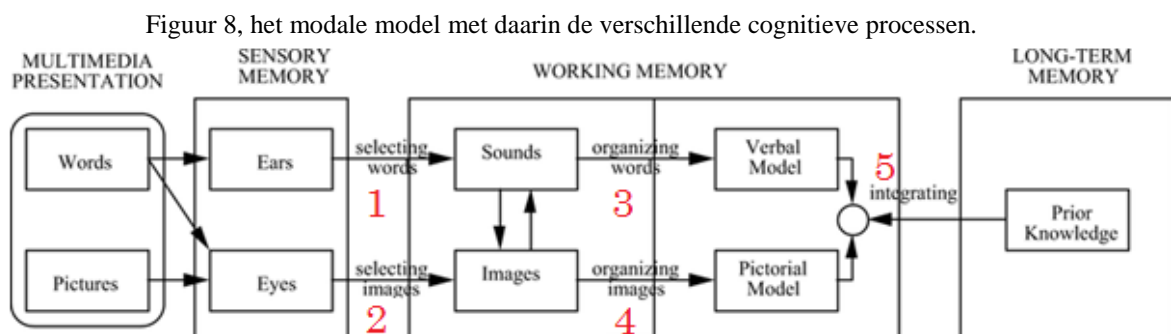
Een tweede aanname die de basis vormt voor de cognitieve theorie van *Multimedia Learning* is de *limited-capacity assumption*. Een mens heeft in zijn geheugen maar een beperkte opslagruimte waar informatie kan worden bewaard. Er kunnen dus maar een paar beelden worden vastgehouden in het visuele kanaal van het werkgeheugen en een klein beetje verbale informatie via het verbale kanaal van het werkgeheugen.

De laatste aanname is de *active-processing assumption*. Die gaat ervan uit dat de mens actief meewerkt in het cognitieve proces om een goed samenhangend geheel te maken van de verschillende prikkels en waarnemingen die in het geheugen binnenkomen.

Wanneer *learners* actief informatie proberen op te slaan, worden er dus cognitieve processen in gang gezet. Mayer onderscheidt er vijf:

1. Het selecteren van relevante woorden die worden verwerkt in het verbale werkgeheugen.
2. Het selecteren van relevant beeld dat wordt verwerkt in het visuele werkgeheugen.
3. Het organiseren van geselecteerde woorden in het verbale model.
4. Het organiseren van geselecteerde beelden in het visuele model.
5. Het integreren van de verbale en visuele informatie met informatie die al in het langetermijngeheugen opgeslagen is.

Hieronder is dit schematisch weergegeven, met in het rood de nummers van het bijbehorende cognitieve proces.



Dat betekent dat er verschillende wegen zijn binnen het geheugen die ervoor kunnen zorgen dat gepresenteerde informatie bij het langetermijngeheugen terechtkomt. Zo gaat informatie gepresenteerd in afbeeldingen via *pictures* naar *eyes* naar *images* naar *pictorial model* waar het kan worden vermengd met eerdere kennis. Wanneer informatie gepresenteerd wordt in woorden op een scherm, gaat de informatie via *words* naar *eyes* naar *images* waar het geheugen geluiden creëert die bij het beeld passen (*images* en *sounds* interacteren met elkaar) naar *verbal mode* waar het kan worden vermengd met eerdere kennis (Mayer 2005: 31 – 42; Mayer 2009: 57 – 79).

3.3.2 Vier methodes van Multimedia Learning

Om te onderzoeken onder welke omstandigheden *learners* de meeste informatie opnemen in het geheugen, testte Mayer het effect van twaalf verschillende multimedia lessen. Zo onderzocht hij onder andere of mensen informatie beter in zich opnemen als ze voorkennis hebben van het te behandelen onderwerp (*pre-training principle*) en of de stijl van de presentatie formeel of informeel beter werkt voor het onthouden (*personalization principle*) (Mayer 2009: 52). Met het oog op de analyse van zestien TEDtalks verderop in dit onderzoek, zijn vier van die multimedialessen van belang. In de analyse worden namelijk de visuele technieken behandeld die in de TEDtalks voorkomen. *Principles* als *the pre-training principle* en *the personalization principle* betreffen de inhoud van de kennis die moet worden overgebracht, terwijl het in de analyse in dit onderzoek vooral gaat om de vorm van de informatie, om de manier waarop de informatie visueel in beeld wordt gebracht. De technieken die in de vier *principles* die hieronder worden behandeld naar voren komen, zijn meer toegespitst op die vorm en daarom van belang.

3.3.2.1 Multimedia Principle

Een van de *principles* van Mayer is het *Multimedia Principle*. De naam zegt het al, dit principe is de basis van alle andere principes binnen de *Multimedia Learning Theory*. Dit principe gaat er namelijk vanuit dat mensen beter leren van woorden én beeld dan van woorden alleen. Volgens de *information-delivery view* zou een combinatie van woord en beeld niet beter zijn voor het onthouden van informatie dan alleen woord. In die optiek kan een presentatie met woorden worden gebracht of met beelden, maar blijft het resultaat hetzelfde: er wordt dezelfde informatie opgeslagen in het

langetermijngeheugen. Volgens de *Multimedia Learning Theory* bezit een mens twee kanalen (*dual-channel assumption*) waar kwalitatief verschillende informatie doorheen wordt vervoerd. Woord en beeld vullen elkaar aan, maar kunnen elkaar niet vervangen (Mayer 2009: 223-238). In verschillende onderzoeken van Mayer in samenwerking met onder andere Gallini (1990) en Anderson (1992), concludeerden de onderzoekers inderdaad dat studenten die informatie tot zich hadden genomen die bestond uit woorden en beeld, meer hadden onthouden dan de studenten die alleen woorden gepresenteerd hadden gekregen.

3.3.2.2 Redundancy Principle

Het *Redundancy Principle* is een ander principe dat Mayer onderzoekt. De hypothese van dit principe is dat mensen informatie beter onthouden wanneer er een beeld wordt geprojecteerd en erover wordt verteld dan wanneer er een beeld wordt geprojecteerd, erover wordt verteld én de gesproken tekst ook nog wordt geprojecteerd. Deze hypothese is gebaseerd op de *limited-capacity assumption*. Omdat er niet oneindig veel ruimte is voor nieuwe informatie, kunnen het visuele en het verbale kanaal overvol raken. Wanneer er én beeld én woord geprojecteerd wordt, komen beide door de ogen het sensorisch geheugen binnen, terwijl er niet veel plaats is in het visuele kanaal. Er moet als het ware gestreden worden om een plaats, terwijl er bij een presentatie waar alleen afbeeldingen worden getoond en woorden gesproken worden, één stroom informatie via de oren naar binnen komt en één stroom via de ogen (Mayer 2009: 118 – 125). In onderzoek dat Mayer samen met Heiser en Lonn (2001) deed onder studenten, werd zijn hypothese bevestigd. Studenten die een samenvatting van de tekst die gesproken werd of de precieze tekst die gesproken werd naast een afbeelding, op het scherm zagen geprojecteerd, onthielden minder van het verhaal dan studenten die geen tekst op het scherm zagen (2001: 193). In samenwerking met Moreno, ontdekte Mayer (2002: 159) dat studenten wel beter presteren als de tekst na het beeld wordt vertoond, aangezien de informatie dan verspreid wordt en er minder kans is op een *overload* aan informatie die op hetzelfde moment door één kanaal moet worden verwerkt. Hertz (2005), die onderzoek doet naar het gebruik van PowerPoint in wetenschappelijke presentaties, baseert zich ook op Mayer wanneer ze zegt: ‘Je moet het beeldkanaal niet onnodig vullen met projecties van nog meer woorden (denk aan de gebruikelijke sheets met opsommingen van onderwerpen in PowerPoint)’ en ‘je moet afwegen welke

informatie je beter kunt vertellen en welke informatie je beter kunt laten zien.’ (2005: 20).

3.3.2.3 Coherence Principle

De hypothese van het *Coherence Principle* is, dat mensen meer leren van informatie waar relevant materiaal bij is toegevoegd dan van informatie waar irrelevant materiaal bij is opgenomen. Wanneer er interessante, maar irrelevante informatie wordt gedeeld in een uitleg, proberen *learners* actief een samenhangend mentaal beeld te vormen van de ontvangen informatie. Dat is ook wat we kunnen aannemen op basis van de *active-processing assumption*: de mens gaat actief aan de slag met verkregen informatie. Het werkgeheugen heeft maar een beperkte opslagruimte en dus kan de irrelevante informatie de plaats innemen van de informatie die er eigenlijk terecht had moeten komen, de relevante informatie. Met irrelevant beeld of irrelevante tekst wordt er dus minder informatie onthouden die er echt toe doet (Mayer 2009: 89-98). Deze hypothese werd bevestigd door Harp en Mayer (1998). Zelfs als studenten werd verteld waar ze aan het einde van het experiment op bevraagd zouden worden, konden ze het niet laten om ook de irrelevante informatie op te slaan, waardoor er minder aandacht werd besteed aan de relevante informatie (1998: 423). Atkinson, Cliff en Mayer (2004) stellen dan ook dat wanneer een spreker een PowerPoint maakt om informatie over te brengen, alles dat het hoofdidde niet ondersteunt, moet worden geschrapt op de dia.

3.3.2.4 Temporal Contiguity Principle

In het *Temporal Contiguity Principle* stelt Mayer de hypothese op dat mensen beter leren wanneer het beeld en de bijbehorende gesproken tekst op hetzelfde moment tot de *learner* komen. Informatie die na elkaar komt (dus eerst beeld en dan gesproken woord of eerst gesproken woord en dan beeld) zorgt voor een minder goede herinnering van de gepresenteerde informatie. Wanneer een *learner* namelijk eerst de informatie leest en dat daarna pas ziet uitgewerkt, moet hij de woorden vasthouden in het werkgeheugen totdat hij de informatie kan toepassen op de afbeeldingen. Dat kan een *overload* aan informatie in het werkgeheugen veroorzaken. De *information-delivery view* daarentegen pleit juist voor een scheiding in de presentatie van woorden en beelden. Bij een scheiding van die twee zou er namelijk twee keer een *delivery* plaatsvinden en zou het werkgeheugen twee keer alle ruimte hebben om de informatie op te slaan in het langetermijngeheugen. Maar ‘humans are sense-makers who engage in active cognitive processes during learning such as selecting relevant words and pictures, organizing the

selected material into verbal and visual mental models, and integrating the verbal and visual models.’ aldus Mayer (2009: 153-164). Het zou dus beter werken om woorden en beelden tegelijkertijd te presenteren, zodat het geheugen de combinatie van de informatie als relevant beschouwt. Zo blijkt ook uit onderzoek van Ginns (2006) en Mayer en Anderson (1991); studenten onthouden meer informatie wanneer beeld en woord tegelijk worden getoond.

3.4 Andere onderzoeken naar woord en beeld en hun volgorde

De kern van de *Multimedia Learning Theory* is de combinatie van woord en beeld in presentaties en hoe die zich tot elkaar verhouden. Mayer toonde aan dat woorden en beelden meer zeggen en beter helpen bij het onthouden van informatie dan woorden alleen. Uit onderzoek naar de effectiviteit van het tegelijk vertonen van woord en beeld of het op elkaar volgend vertonen, kwam naar voren dat het geheugen informatie beter vasthoudt wanneer woord en beeld tegelijk worden vertoond. Op de vraag of het nog verschil maakt of er eerst beeld en dan woord wordt getoond of eerst woord en dan beeld, gaat Mayer verder niet in. Eitel en Scheiter (2014) doen dat wel. Na 42 onderzoeken waarin de rol van beeld en woord werd onderzocht naast elkaar te hebben gelegd, concludeerden zij dat het niet gaat om de volgorde van het beeld en het woord, maar om de functie van die twee middelen. Dat betekent dat het uitmaakt of informatie ondersteunend bedoeld is bij belangrijkere informatie of juist de kern van de boodschap vormt.

‘Therefore, in the present review, we hypothesize that it is not the sequence of presenting text and pictures per se that predicts learning outcomes. Rather, it is the functions that text and pictures have for the processes and outcomes of learning that make the difference; amongst other influences such as prior knowledge, these functions depend on the sequence in which text and pictures are presented.’ (2004:154)

Een tekst wordt dus niet beter onthouden doordat er eerst een plaatje of eerst een tekst wordt vertoond, maar door de functie die dat beeld of die tekst heeft. Wanneer het beeld bijvoorbeeld een beroep doet op eerdere kennis, is dat belangrijker dan de tekst en moet

het beeld na de tekst worden getoond. Zit dat beroep op eerdere kennis meer in de tekst, dan moet die tot slot worden gepresenteerd. Informatie die het laatst getoond wordt, wordt namelijk het beste onthouden. Dit wordt ook wel het *recency effect* genoemd. De volgorde is dus wel van belang, maar die volgorde wordt bepaald door de functie die de tekst in de gepresenteerde informatie heeft. De bewering dat belangrijke informatie juist aan het begin gepresenteerd moet worden, bestaat ook. Dit wordt het *primacy effect* genoemd (Baddeley, Eysenck & Anderson 2009:24). De twee termen spreken elkaar tegen, maar uit meerdere onderzoeken blijkt dat het *recency effect* een grotere impact heeft op het onthouden van informatie. Op de lange termijn blijkt het *recency effect* dus effectiever voor het onthouden van informatie (Baddeley & Hitch 1977 en Pinto & Baddeley 1991).

Eitel en Scheiter ontdekten verder dat de ontvanger informatie beter onthoudt als de minder complexe informatie wordt vertoond vóór de complexere informatie.

Ook Nederlandse onderzoekers houden zich bezig met de vraag welk effect woord en/of beeld hebben op de ontvanger. Blokzijl en Andeweg (2006) onderzochten geen combinatie van beide, maar het verschil tussen dia's met tekst, dia's met afbeeldingen of helemaal geen dia's. De studenten die geen visuele ondersteuning kregen, scoorden significant slechter in het zich herinneren van de uitgelegde stof dan de studenten die wel visuele ondersteuning hadden gehad. Daarnaast werd duidelijk dat de groep studenten die tekstslides gezien had, significant beter scoorde dan de studenten die te maken hadden gehad met de slides met visualiseringen. Dat laatste verschil was na een week verdwenen, maar dát visuele ondersteuning nodig is om retentie te bevorderen, werd hiermee nog eens bewezen.

Samenvattend kan over de combinatie van woord en beeld in presentaties het volgende gesteld worden:

- *Learners* kunnen het slechtst informatie encoderen wanneer er geen visuele ondersteuning is.
- Wanneer er de keuze is uit óf tekst projecteren óf beeld projecteren om zoveel mogelijk informatie over te brengen, dan moet gekozen worden voor tekst (Blokzijl & Andeweg, 2006).

- Wanneer er in een presentatie op drie manieren informatie wordt doorgegeven (via gesproken woord, geprojecteerd woord en geprojecteerd beeld), dan kan het beste gekozen worden voor een scheiding in het vertonen van het geprojecteerde woord en het geprojecteerde beeld om een *overload* aan informatie te voorkomen (Mayer & Moreno, 2002).
- De beste combinatie voor het overbrengen van informatie is het tegelijkertijd vertonen van een afbeelding of visuele tekst en het spreken van daarbij relevante woorden (*temporal contiguity principle*). Dan onthoudt de ontvanger de boodschap het beste.

3.5 Een vergelijking met andere onderzoeken naar PowerPoint

In dit onderzoek worden de eerste stappen genomen in een koppeling van de geheugentheorie aan de invulling van toespraken. Uit de zojuist behandelde theorie blijkt dat zo'n koppeling bepaald niet onlogisch is. Toch zijn er nog weinig andere onderzoeken gedaan naar soortgelijke visuele technieken. Een onderzoek dat wel in de buurt komt bij het hier beschreven onderzoek, is dat van Buchko, Buchko en Meyer in 2012. Zij analyseerden middels een vooropgezet experiment hoeveel informatie er werd onthouden van preken die gehouden werden in een Amerikaanse kerk na het zien van PowerPointslides met alleen woorden, PowerPointslides met alleen beelden, PowerPointslides met woorden en beelden en geen PowerPoint. In dat onderzoek werd dus niet gemeten welke visuele retentietechnieken er zoal gebruikt worden in een kerkdienst, maar hoeveel informatie de toehoorders onthielden na het zien van de verschillende PowerPointslides. Uit het experiment bleek dat men informatie het beste onthoudt wanneer er alleen tekst op de slide geprojecteerd is. Slides met afbeeldingen of met woorden en afbeeldingen veroorzaakten minder retentie bij het publiek. Na de vier verschillende scenario's te hebben onderzocht, concludeerden de onderzoekers dat het gebruik van PowerPoint in een kerkdienst er niet voor zorgde dat het publiek zich meer van de inhoud kon herinneren dan wanneer PowerPoint niet werd gebruikt (2012:693). Dit is een wat vreemde conclusie, met het oog op de uitkomst dat men informatie het beste onthoudt wanneer er alleen tekst op de slide is geprojecteerd. Blijkbaar is het projecteren van visuele tekst het meest retentie bevorderend in vergelijking met slides waar een afbeelding of een afbeelding én tekst worden getoond, maar is het verschil met een presentatie waarin helemaal geen beeld wordt vertoond niet significant. Deze

conclusie is in tegenspraak met de *Multimedia Learning Theory* van Mayer waarin een presentatie met woord én beeld altijd als meer retentie bevorderend wordt gezien dan een presentatie zonder beeld en ook het onderzoek van Andeweg en Blokzijl wijst op betere retentie na het projecteren van beeld (2006). Er zou dus meer onderzoek moeten worden gedaan naar presentaties met en zonder beeld om hier meer duidelijkheid in te krijgen.

Ook binnen het recht wordt er nagedacht over onderzoek naar retentie.

Feigenson en Dunn (2003) beschrijven een proces waarin de mogelijkheden worden afgewogen voor een onderzoek naar nieuwe visuele technologieën in de rechtszaal. ‘The question is not whether advanced visual technology will be used in civil litigation, but how wisely.’

Op verschillende gebieden en in verschillende genres wordt dus steeds meer nagedacht over het gebruik van visuele middelen en hoe die te analyseren zijn. Een vergelijking tussen het in dit onderzoek gebruikte corpus en andere corpora is dus zeker niet ondenkbaar in de toekomst. Op dit moment is een vergelijking tussen de twee zojuist genoemde onderzoeken en dit onderzoek nog moeilijk te maken, omdat de context anders is. Die onderzoeken vonden plaats in een net iets andere context en zijn niet op een lijn te zetten met dit onderzoek naar *visuals* in TEDtalks.

HOOFDSTUK 4 VISUALISATIETECHNIEKEN IN ADVIESLITERATUUR

Nu de theorie is behandeld, verschuift de focus van dit onderzoek naar de praktijk. TEDtalks worden geanalyseerd en onderzocht op het gebruik van visuele retentietechnieken. Die visuele retentietechnieken zijn opgenomen in een codeboek dat voorwaarden bevat waar de technieken aan moeten voldoen om te kunnen worden gezien als visuele retentietechniek. In dit hoofdstuk wordt uiteengezet welke visuele technieken er door adviseurs worden aangeraden om te gebruiken in een toespraak met het oog op retentie en welke technieken geselecteerd zijn in dit onderzoek. In paragraaf 4.1 is een overzicht te vinden van visuele retentietechnieken die Besterveld (2012) en Helderma (2013) uit respectievelijk Engelse en Nederlandse adviesliteratuur hebben geselecteerd. Paragraaf 4.2 bevat de uiteindelijke selectie voor de analysemethode, waarna in paragraaf 4.3 een korte terugkoppeling wordt gemaakt naar de geheugentheorie. Op de techniek *object* wordt verder ingegaan in paragraaf 4.4.

4.1 Een opsomming van visuele technieken: van demonstratie tot mimiek

In twee eerdere studies zijn door Besterveld (2012) en Helderma (2013) retentietechnieken onderscheiden die voorkomen in adviesboeken voor het houden van een toespraak. Besterveld onderzocht of de geadviseerde technieken in Engelse adviesliteratuur in verband werden gebracht met retentie en Helderma deed dat voor de Nederlandse adviesliteratuur. In totaal vond Besterveld 83 retentietechnieken in adviesliteratuur en Helderma 46 retentietechnieken. De technieken uit de Nederlandse en de Engelse adviesboeken vertoonden veel overeenkomsten. In totaal bevatten beide onderzochte corpora 88 verschillende technieken (Van Loosbroek 2014: 12). Vijftien daarvan zijn technieken die visueel worden waargenomen door het publiek (Besterveld 2012: 488-490):

- Afbeelding
- Demonstratie
- Elektronische presentatie
- Gebaar
- Handout

- Kaart
- Mimiek
- Object
- Oogcontact
- Projectie
- Schematische weergave
- Sprezzatura
- Verplaatsen
- Videomateriaal
- Visuele tekst

De technieken *imagery*, *metafoor* en *metonymia* hebben alle drie betrekking op mentale afbeeldingen en niet op een afbeelding die in de werkelijkheid voor ieders ogen te zien is. Die drie technieken zijn daarom niet opgenomen in de zojuist gegeven opsomming van vijftien visuele technieken, aangezien in de TEDtalks alleen met het oog waarneembare visuele retentietechnieken worden geanalyseerd.

Hoewel de vijftien technieken allemaal afkomstig zijn uit adviesboeken uit de periode 1980 – 2009, vormt de verzameling technieken een ongelijk span. Niet elke techniek komt namelijk in veel adviesboeken voor. Zo is de term *sprezzatura* er een die zelden genoemd wordt. In paragraaf 4.3 zal blijken dat onder andere de *sprezzatura* niet zal worden opgenomen in het codeboek voor de analyse, maar om een volledig beeld te geven van de visuele retentietechnieken die Helderman en Besterveld in hun studies vonden, wordt de term in deze paragraaf nog meegenomen.

Er zal nu eerst een korte uitleg per visuele retentietechniek volgen (alle afkomstig uit Besterveld 2012: 81-90) met een paar voorbeelden uit adviesboeken. De gegeven voorbeelden zijn bedoeld om aan te geven wat er volgens adviseurs wordt verstaan onder de visuele retentietechnieken. De link naar retentie komt niet in elk voorbeeld expliciet naar voren, omdat de passages uit de adviesboeken vaak onderdeel uitmaken van een groter hoofdstuk waar algemener over retentie wordt gesproken. Niet elke techniek wordt daarin expliciet aan retentie verbonden. Met de overkoepelende categorie waartoe de techniek behoort gebeurt dat wel.

4.1.1 Afbeelding

De techniek *afbeelding* is een niet-bewegende visualisatie van de werkelijkheid. In tien van de veertig Engelse adviesboeken werd de techniek *afbeelding* geadviseerd en gezien als bevorderend met het oog op retentie. In de Nederlandse adviesboeken was dat in zes van de veertig boeken. Al met al een veelvoorkomende techniek.

Lucas (1995: 290): ‘As the old saying tells us, one picture is worth a thousand words. People find a speaker’s message more interesting, grasp it more easily, and retain it longer when its presented visually as well as verbally.’

Osborn & Osborn (1997: 289-290): ‘A good photograph can authenticate a point in a speech in a way that words alone cannot. It can make a situation seem more vivid and realistic. For instance, if you were trying to describe the devastation caused by a flood, tornado, or hurricane, photographs could be quite useful. (...) Pictures should reinforce, not replace, the speaker’s words. (...) They should be controlled and revealed only when they illustrate the point you are making and then put away.’

4.1.2 Demonstratie

Bij een demonstratie laat de spreker zien wat hij bedoelt door middel van een handeling. Die handeling vindt op het moment zelf plaats en wordt op dat moment dus waargenomen door het publiek. Onder andere Lucas adviseert het gebruik van een demonstratie.

Lucas (1995: 301): ‘Sometimes you can use your own body as a visual aid – by showing how to perform sign language for the deaf, by demonstrating the skills of modern dance, by doing magic tricks, and so forth. (...) Doing a demonstration well requires special practice to coordinate your actions with your words and to control the timing of your speech.’

4.1.3 Elektronische presentatie

Elektronische presentatie is een subtype van de techniek *projectie*. De bekendste vorm van een elektronische presentatie is de PowerPoint-presentatie. Waar vroeger veel gebruik werd gemaakt van dia's, zijn PowerPoint en Prezi daar nu voor in de plaats gekomen.

Hertz (2005: 85): 'De beste manier om beelden te projecteren is met behulp van PowerPoint. PowerPoint is een computerprogramma waarmee vrij eenvoudig, goed uitziende dia's gemaakt kunnen worden. (...) Beelden hebben een belangrijke functie bij een presentatie, maar ze dienen vooral als ondersteuning!'

Osborn & Osborn (1997: 297): 'Computer-assisted presentations can bring together texts, numbers, pictures, and artwork made into slides, videos, animations, and audio materials. Materials such as graphs and charts that are generated with the computer can be changed at any time, even during a presentation.'

4.1.4 Gebaar

Met behulp van een lichaamsdeel zoals een hand of een arm, kan een spreker impliciet nadruk leggen op een bepaald deel van de rede:

Leanne (2008: 29): 'The use of gestures can also create the sense that a speaker is deeply invested in a topic and earnest in their desire to get others to see their points. For example, a hand placed sincerely over the heart shows deeply felt emotion. Additionally, effective gestures make speech more lively, engaging and memorable.'

4.1.5 Handout

De handout is een specifieke vorm van de techniek *visuele tekst* en verschilt van andere visuele tekst doordat het publiek de handout mee naar huis kan nemen.

DeVito (1981: 84): ‘Handouts, printed materials that you distribute to the audience, are especially helpful in explaining complex material and also in providing listeners with a permanent record of some aspect of your speech. Handouts are also useful for presenting complex information that you want your audience to refer to throughout the speech. Handouts encourage listeners to take notes – especially if you leave enough white space or even provide a specific place for notes – which keeps them actively involved in your presentation.’

4.1.6 Kaart

Een kaart bevat informatie met een topografisch karakter en kan in een toespraak herkenbaar in beeld worden gebracht.

Verderber (2001: 162): ‘Maps are pictorial representations of a territory. Well-prepared maps allow you to focus on landforms (mountains, deserts, rivers, lakes), states, cities, land routes or weather systems.’

4.1.7 Mimiek

Met de techniek *mimiek* kan een spreker impliciet nadruk leggen op een bepaald deel van de rede. Dat kan door een duidelijk gezichtsexpressie aan te nemen.

Osborn & Osborn (1997: 278): ‘People can function as presentation aids. As the speaker, you cannot avoid being a presentation aid for your own speech. Your body, grooming, actions, gestures, voice, facial expressions, and demeanor always provide an added dimension to your speech. Use these factors to help convey your message.’

4.1.8 Object

Een object (ook wel *prop*) is een voorwerp dat een spreker meeneemt en toont aan zijn publiek.

Laskowski (2001: 187): ‘In some instances I combine my closing remarks or statements with a theatrical closing, one that involves props or even a costume.’

When I do this, each time an audience member picks up that object they are reminded of my presentation.’

Linkletter (1980: 131): ‘But sometimes you may feel you need a little help, and that’s where the “prop principle” comes into play. A prop is nothing more than a physical object (or even a person) that helps you get your audience’s attention and illustrates your main theme more effectively. (...) The main idea is that the more you hear or see something in a variety of ways, the more likely you are to understand and remember it.’

4.1.9 Oogcontact

Door middel van oogcontact kijkt een spreker zijn toeschouwers aan. Dat kan door het publiek gezien worden. Deze techniek wordt dan visueel waargenomen en hoort daarmee thuis in het rijtje van visuele technieken. Alleen Anholt (2006: 139) behandelt dit als retentietechniek.

‘Posture and gestures, like eye contact and vocal inflections, contribute to the stage presence of a speaker. The stage presence, in turn, will help determine whether the presentation will linger in the audience's memory or quickly be forgotten.’

4.1.10 Projectie

Projectie is de overkoepelende techniek voor alle audiovisuele ondersteuning. Hieronder vallen onder andere tekst die op een scherm wordt getoond, schematische weergaven en ook de inmiddels ouderwetse overhead projector. Voorbeelden van deze techniek zijn opgenomen in de omschrijvingen van de *afbeelding*, *elektronische presentatie*, *kaart*, *schematische weergave*, *videoweergave* en *visuele tekst*.

4.1.11 Schematische weergave

Schematische weergave is feitelijke informatie op een schematische manier weergegeven. Onder deze techniek worden het diagram, verschillende grafieken en tabellen verstaan.

Lucas (1995: 296): ‘Graphs are a good way to simplify and clarify statistics. Audiences often have trouble grasping a complex series of numbers. You can ease their difficulty by using graphs to show statistical trends and patterns.’

Verderber (2000: 160): ‘Pie graphs help audiences to visualize the relationships among parts of a single unit.’

4.1.12 Sprezzatura

Sprezzatura betekent: stevig in je schoenen staan en tonen dat jij degene bent die alle controle in handen hebt.

Anholt (2006: 139, 225): ‘The stage presence, in turn, will help determine whether the presentation will linger in the audience's memory or quickly be forgotten. (...) You, the speaker, are the leader, the general who gives the commands, and need to look the part!’

4.1.13 Verplaatsen

De techniek *verplaatsen* houdt in dat de spreker zich van de ene naar de andere plek verplaatst.

Gurak (2000: 102, 110): ‘Audiences remember messages that reach multiple senses. Therefore gestures, body movements, and facial expressions are valuable tools when employed skillfully. (...) Changing your position or location while speaking is the broadest, most visible physical action you can perform. Therefore it can either help drive your message home or spell failure for even the most wellplanned speech. Moving your body in a controlled, purposeful manner creates three benefits.

1. Supports and reinforces what you say
2. Attracts an audience's attention
3. Burns up nervous energy and relieves physical’

4.1.14 Videomateriaal

Onder *videomateriaal* wordt bewegende visualisatie van de ‘werkelijkheid’ verstaan.

Hertz (2005: 84): ‘Videofragmenten zijn heel aantrekkelijk om naar te kijken en kunnen een onderwerp snel inzichtelijk maken.’

Osborn & Osborn (1997: 296): ‘Videotapes and audiotapes can authenticate a speech and add variety to your presentation. (...)Videos are especially useful for transporting the audience to distant, dangerous, or otherwise unavailable locations. Although you could verbally describe the scenic wonders of the Grand Canyon, you could reinforce your wordpictures with actual photos of the site or, better still, with living scenes from a videotape. (...) For certain topics, however, carefully prepared videos can be more effective than any other type of presentation aid.’

4.1.15 Visuele tekst

Onder de techniek *visuele tekst* valt de ondersteuning met tekst in een presentatie. Dat kan tekst zijn die door de spreker op een bord wordt geschreven, maar ook tekst die op een slide in een presentatie is neergezet.

Spolders (1997: 86): ‘Als er met visueel materiaal wordt gewerkt – wat zeer aan te bevelen is – kan het materiaal een dubbel doel dienen, namelijk als geheugensteun voor de spreker en als ‘inscherpmiddel’ voor de hoorder. Want als je er ook iets bij ziet, blijft wat je hoort beter hangen. Sterker nog: hoe meer zintuigen geraakt worden, des te beter blijft een indruk hangen.’

Verderber (2000: 157): ‘Word charts are often used to preview material that will be covered in a speech, to summarize material, and to remind an audience of speech content. (...) An outline can also be considered a word chart.’

4.2 Adviestechnieken voor de analyse van TEDtalks geselecteerd

De vijftien visuele retentietechnieken die gevonden zijn door Besterveld en Helderma kunnen niet allemaal worden meegenomen in de analyse van de TEDtalks. Dan zou de analyse te erg aan de oppervlakte blijven en zouden de resultaten lastig te interpreteren zijn. Daarom is er een selectie gemaakt van de vijftien technieken op basis van de volgende voorwaarde: de techniek moet los staan van de spreker zelf. Lichaamstaal en non-verbale communicatie worden dus niet meegenomen in het codeboek.

Volgens Mayer (2009: 4) is de kern van het succesvol overbrengen van informatie het combineren van woord en beeld in een speech. In hoofdstuk 2 en 3 kwam naar voren dat verschillende psychologen modellen hebben opgezet om het geheugen systematisch in kaart te brengen. Door de twee kanalen die het geheugen heeft (visueel en auditief) komt de informatie binnen en door een combinatie van woord en beeld is er meer kans op een succesvolle *transfer* van informatie vanuit het werkgeheugen naar het langetermijngeheugen dan wanneer één van de twee middelen wordt ingezet (Mayer 1991, 2001, 2005, 2009; Paivio 1971, 1986; Baddeley 1986). Aangezien op die kern gefocust wordt in dit onderzoek, worden alleen de technieken meegenomen in de analyse die wijzen op het daadwerkelijk vertonen van een afbeelding, voorwerp of tekst. Hoe de spreker zijn handen houdt en of hij zich verplaatst of niet staat daar los van. Dat zijn geen technieken die te maken hebben met geprojecteerd of meegenomen beeld. Daarnaast is de spreker een mens en dus onvoorspelbaar. Gebaren en verplaatsingen op het podium kunnen voorbereid zijn, maar ontstaan vaak op het moment zelf en worden dus veelvuldig in een opwelling gebruikt, of zelfs zonder erbij na te denken. Aan voorbereide, statische, visuele retentietechnieken kan tijdens de speech niets meer veranderen ten opzichte van de momenten waarop bedacht is om die visuele hulpmiddelen in te zetten. Het analyseren van die technieken is dus duidelijker en beter te benoemen, omdat ze intentioneel worden ingezet.

Ook wordt de mate van betrouwbaarheid van de analyse verhoogd door gebaren en andere handelingen van de spreker zelf buiten beschouwing te laten. Gebaren en mimiek zijn veel moeilijker te duiden voor analysatoren en dus zal er sneller onenigheid zijn over de beoordeling van de speeches.

Op basis van de deze voorwaarde, zijn de volgende technieken beschikbaar voor analyse:

- Afbeelding
- Elektronische presentatie
- Kaart
- Object
- Projectie
- Schematische weergave
- Videomateriaal
- Visuele tekst

De niveaus waarop deze technieken in te delen zijn, zijn verschillend. Zo is *projectie* een overkoepelende term voor alle beelden die geprojecteerd kunnen worden op een scherm achter de spreker. Er is daarom voor gekozen om de technieken die geprojecteerd worden, onder de term *projectie* te scharen.

Aangezien de techniek *kaart* een afbeelding is met een topografisch karakter en daarmee dus een subtype is van de techniek *afbeelding*, wordt de kaart onder de afbeelding ondergebracht.

De techniek *elektronische presentatie* valt vandaag de dag samen met de techniek *projectie*. Waar in adviesboeken nog verschil werd gemaakt tussen een elektronische presentatie en een presentatie zonder gebruik van elektronica (denk aan een overhead projector of een flip chart), is een presentatie, een projectie, tegenwoordig altijd elektronisch en dus valt die techniek weg naast de techniek *projectie*.

De technieken die in het analysemodel zullen worden opgenomen zijn de volgende:

- Object
- Projectie - Afbeelding
- Projectie - Schematische Weergave
- Projectie - Videomateriaal
- Projectie - Visuele Tekst

4.3 Terug naar de geheugentheorie

Besterveld (2012: 138) stelt dat de onderbouwing van de geadviseerde technieken in de adviesboeken ver te zoeken is. Maar dat wil niet zeggen dat de adviezen niet goed zouden kunnen aansluiten bij wetenschappelijke theorieën. In deze paragraaf wordt die koppeling gemaakt voor de verschillende gekozen technieken.

De techniek *Projectie – afbeelding* wordt gelinkt aan alle stilstaande beelden die er op het projectiescherm achter de spreker verschijnen. Op basis van het visuele kanaal in het *modale model* van Atkinson en Shiffrin (zie figuur 2) en de *Multimedia Learning Theory* van Mayer (woord en beeld kunnen het beste tegelijk vertoond worden) kunnen we stellen dat een afbeelding retentiebevorderend werkt als daarbij ook met woorden wordt verteld wat er op de afbeelding te zien is. Die woorden worden namelijk tegelijkertijd met de afbeelding verwerkt, maar dan in het auditieve kanaal (zie figuur 5).

Voor de techniek *Projectie – schematische weergave* zal het geheugen veelal op eenzelfde manier aan het werk gaan als voor de techniek *Projectie – afbeelding*. Maar, aangezien deze techniek een grafiek of tabel bevat, zal er naast beeld (lijnen van de grafiek of tabel) ook tekst in beeld verschijnen (benaming van de x- en y-as of namen van tabellen). Wellicht zorgt dat voor een kleine moeilijkheid in het verwerken van de informatie, aangezien er zowel gesproken tekst, geschreven tekst en een afbeelding moeten worden verwerkt. Uit het *redundancy principle* dat in hoofdstuk 3 is beschreven, blijkt dat dat een *overload* aan informatie zou kunnen veroorzaken. Maar ook met deze techniek zal veel informatie vast kunnen worden gehouden. Projectie is immers beter dan helemaal geen projectie (Andeweg & Blokzijl 2006).

Ook de techniek *Projectie – visuele tekst* zal het onthouden van informatie kunnen bevorderen. Naast dat woorden gesproken worden en dus via het auditieve kanaal worden verwerkt, zijn ze ook zichtbaar en worden ze via het visuele kanaal verwerkt. Daarmee is er meer kans op een opslag in het langetermijngeheugen. Uit onderzoek van Andeweg & Blokzijl (2006: 121) bleek zelfs dat het projecteren van visuele tekst zorgt voor het onthouden van meer informatie dan wanneer een afbeelding wordt geprojecteerd.

De techniek *Projectie – videomateriaal* bevat net als de techniek *Projectie – afbeelding* een beeld, maar dat is in dit geval een bewegend beeld. Er zijn veel

onderzoeken gedaan naar de invloed van video's in collegezalen op de studenten, maar dat zijn voornamelijk onderzoeken naar *video-based instructions*. In die onderzoeken wordt gekeken of studenten informatie beter onthouden als er door middel van een instructie in een video informatie wordt overgebracht (Homer, Plass, Blake 2008; Rackaway 2012). Het vertonen van het videomateriaal heeft inderdaad het verwachte effect: er wordt meer informatie vastgehouden door de studenten. Deze onderzoeken zijn niet een op een door te trekken naar de video's die in TEDtalks worden vertoond. Dat zijn vaak interviews met mensen of beeld uit het werkveld waar de spreker over spreekt en geen instructievideo's. Toch kan wel gesteld worden dat video's bevorderend werken voor het opslaan van geheugen. Het blijft namelijk beeld dat hand in hand gaat met gesproken woorden, de combinatie die zorgt voor het beste opslaan van informatie. Naar de techniek *Object* is nog relatief weinig wetenschappelijk onderzoek gedaan. Wel zijn er speechexperts die tips en aanwijzingen geven voor het gebruik van objecten.

4.4. Props: adviezen en mogelijke werking in het geheugen

Al in de klassieke oudheid beweerde men dat het meenemen van een voorwerp indruk kan maken op het publiek. Zo beweerde Quintilianus in hoofdstuk 6 van zijn *Institutio Oratoria*:

‘Niet alleen met woorden ook met bepaalde daden kunnen we tranen opwekken. Zo is het een gewoonte geworden de verdachten vervuild en onooglijk uitgedost te laten opdraven, evenals hun kinderen en ouders, we zien hoe aanklagers bebloede zwaarden tonen, uit wonden afkomstige botsplinters en met bloed doordrenkte kleren, we zien wonden zonder verband en striemen op ontblote lichamen. Het effect van zo iets is meestal enorm, omdat het de mensen als het ware met de neus op de feiten drukt: toen de bebloede toga van Gaius Caesar vooraan megedragen werd in de begrafenisstoet, bracht dat de Romeinse bevolking tot razernij. Men wist dat hij gedood was, zijn lichaam lag immers op de baar, maar dat van bloed druipend gewaad stelde het beeld van de misdaad zo levensecht voor ogen, dat het leek alsof Caesar niet vermoord was, maar op dat moment werd vermoord.’

Tegenwoordig is de gangbare naam voor een voorwerp dat meegenomen wordt om aan het publiek te laten zien: *prop*, dat komt van het woord *property*.

Communicatieadviseurs uit deze tijd benadrukken net als Quintilianus eeuwen geleden, dat *props* een grote rol kunnen spelen bij het indruk maken op het publiek. Hoewel er nog geen onderzoek gedaan is naar het gebruik van *props* in toespraken, hebben verschillende communicatieadviseurs een lijst opgesteld van effecten van *props*. Deze adviezen hebben zij vooral gebaseerd op eigen ervaringen en kennis die zij hebben van de ‘speechwereld’ waarin zij zelf al jaren toespraken en verhalen houden. Andrew Dlugan, een speech-expert uit Canada is daar één van en noemde de volgende eigenschappen van *props*⁴:

1. *Props* zijn concreet. Waar toespraken abstract kunnen blijven, wordt de informatie meer tastbaar voor het publiek.
2. *Props* zijn onverwacht. Het publiek verwacht niet automatisch van elke spreker dat hij een voorwerp meeneemt. Het publiek wordt dus verrast.
3. *Props* kunnen emoties veroorzaken. De voorwerpen kunnen herinneringen oproepen aan eerdere gebeurtenissen waarbij de *prop* een rol speelde.
4. *Props* hebben voorbereiding nodig. Een spreker doet de moeite om het voorwerp mee te nemen en laat daarmee zien dat hij voorbereid is, nagedacht heeft over wat hij met het voorwerp wil.
5. Beeld blijft beter hangen dan woord en dus is het publiek een *prop* minder snel vergeten dan wanneer een spreker er alleen maar over vertelt.

Punt 3 wijst op *encoding rehearsal*. Het beeld van de *prop* komt via de ogen het sensorisch geheugen binnen. Als er genoeg aandacht aan het beeld wordt besteed, wordt het doorgeschoven naar het werkgeheugen, waar het pictoriale model samen met het verbale model eerdere kennis op kan roepen en zo herkenning teweeg kan brengen bij het publiek. Het principe van *Multimedia Learning* is ook van toepassing op *props*. Een vermenging van woord en beeld zorgt voor een hogere mate van het onthouden van informatie dan alleen woord (Mayer 2009). Met het tonen van een *prop* zorgt een spreker ervoor dat woord en beeld interacteren. Ook de techniek *object* kan dus ingezet worden om retentie in het geheugen te bevorderen.

⁴ <http://sixminutes.dlugan.com/speech-props/>

HOOFDSTUK 5 ONDERZOEKSMETHODE: EEN CORPUSANALYSE VAN VISUALISATIETECHNIEKEN

In dit hoofdstuk wordt de methode van het onderzoek naar visuele retentietechnieken in TEDtalks behandeld en het gebruikte corpus toegelicht. In paragraaf 5.1 wordt het genre van TEDtalks uiteengezet en in paragraaf 5.2 komt aan bod welk corpus voor de analyse is geselecteerd. Paragraaf 5.3 bevat informatie over de totstandkoming van een codeboek voor de analyse en paragraaf 5.4 besluit dit hoofdstuk met extra informatie over het gebruik van het codeboek.

5.1 Over TED

In dit onderzoek staan retentietechnieken in toespraken centraal. Aangezien het begrip toespraken erg algemeen is en bijna aan elk verhaal van meer dan 1 minuut toe te schrijven is, is het nodig om dat begrip in dit onderzoek af te bakenen. Er is voor gekozen om een corpus van zestien TEDtalks te analyseren.

TED staat voor *Technology, Entertainment, Design*. TEDtalks zijn toespraken van doorgaans 18 minuten lang, die uitleg geven over een onderwerp dat valt binnen de drie pijlers techniek, amusement en ontwerp. Het motto van de TEDorganisatie is *Ideas Worth Spreading*. In 1984 kwam de Amerikaan Richard Saul Wurman met het idee om een conferentie te organiseren waar bezoekers naar een variëteit aan lezingen over techniek, amusement en ontwerp konden luisteren. Er was gekozen voor een veelzijdige line up, waarin onder andere een demo van de cd werd getoond en *the theory of fractal geometry* uiteen werd gezet.⁵ De conferentie draaide ondanks de technisch nieuwe onderwerpen verlies en het duurde vervolgens zes jaar voor er een nieuwe TEDconferentie werd georganiseerd.

Vanaf 1990 vond er in Californië elk jaar een vierdaagse conferentie plaats. In de jaren die volgden breidde het TEDnetwerk zich uit en won de conferentie aan bekendheid. In 2001 nam Chris Anderson het stokje over van Wurman en in 2009 ontstond er ook voor landen buiten Amerika de mogelijkheid om een TEDconferentie te organiseren. Deze conferenties kregen een x achter de merknaam TED, zodat duidelijk werd dat de conferenties deel uitmaakten van ‘de grote TED’ in Amerika. Vandaag de

⁵ <http://www.ted.com/about/our-organization/history-of-ted>

dag schieten de TEDxconferenties als paddestoelen uit de grond en zo worden er op elke dag van het jaar over de hele wereld wel een paar conferenties gehouden (Gallo 2014: 3-5).

5.1.1 TEDx Delft

Een voorbeeld van zo'n TEDxconferentie is TEDx Delft. De laatste TEDx Delft werd gehouden op 27 februari 2015 en werd door mij bezocht. Een TEDx zoals die in Delft georganiseerd wordt, moet zich aan een aantal afspraken houden om de licentie die van TED Californië uitgaat, te behouden. Caryn 't Hart, curator bij TEDxDelft, vertelt hoe het organiseren van een TEDxconferentie in z'n werk gaat en wat het TEDidee inhoudt. (Zie voor het hele interview bijlage 4.) 'TED is een wereldwijde non-profitorganisatie, geënt op dat waar het echt om gaat: *Ideas Worth Spreading*. Daar zijn wij een filiaal van. We moeten bepaalde dingen doen om dat filiaal te mogen blijven en vooral bepaalde dingen ook niet doen. Op die manier kunnen we het blijven en worden we opgenomen in een groter verband.' Dit houdt in dat er op TEDxconferenties niets over religie en politiek op het podium verkondigd mag worden, dat een spreker geen commerciële agenda mag hebben en dat het verhaal dat gehouden wordt niets te maken mag hebben met pseudo-science. 'Dat komt voort uit het idee dat iedereen zich thuis moet voelen op het podium', aldus 't Hart. Verder moet een organisator van een TEDxconferentie een keer in Californië zijn geweest bij de TEDconferentie die daar elk jaar gehouden wordt. Daar wordt dan een cursus gegeven over TED. Organisatoren die die cursus gevolgd hebben, krijgen toestemming om in hun eigen land een TEDx te organiseren met een groter publiek dan 100 mensen. Wanneer de TEDconferentie in de Verenigde Staten nog niet bezocht is, mogen er niet meer dan 100 mensen worden uitgenodigd.

5.1.2 Coaching van de sprekers

Bij veel TEDconferenties worden de sprekers gecoacht voordat ze hun talk op het TEDpodium mogen houden. In Delft is het verplicht om gecoacht te worden, legt 't Hart uit: 'Aan het begin was coachen mogelijk, was het een keus. Vanaf 2013 is het verplicht en is het geen optie meer. De meeste coaches zijn van het eigen team of van het *teachers-training-program*, waar docenten cursussen kunnen volgen.' De coachteams bestaan meestal uit twee coaches en twee sprekers, die minstens twee keer

samenkomen. Bij veel TEDxconferenties wordt er uitgebreid aandacht besteed aan het begeleiden van de sprekers.

Op de vraag hoe die coaching precies vorm krijgt en of er nog wordt aangestuurd op bepaalde technieken die vallen onder visualisatie, organisatie en/of elaboratie, antwoordt 't Hart dat de presentatie bij TED meer als een *performance* moet worden gezien. 'Je moet ervoor zorgen dat het publiek je onthoudt om je *performance*. Dan doe je wat minder aan bijvoorbeeld structuurtips.' Tips over technieken die speciaal gericht zijn op retentie worden dus niet gegeven bij de coaching, maar er wordt wel een algemene lijn uitgezet. 'Het algemene idee van een TEDtalk is dat het lijkt op *The Hero's Journey*.' Dat is een structuur die al eeuwenlang gebruikt wordt in verhalen. 'Je ziet dat in de middeleeuwen bijvoorbeeld. Het is altijd zo dat het een poosje goed gaat met de hoofdpersoon, hij heeft een bepaald doel, hij wil iets en dan gaat het mis. Dan komt het beslissende moment en dan loopt het weer goed af.'

Hoewel niet altijd expliciet, wordt er in de coachmomenten verder ook aangestuurd op elaboratie: 'Het is slim als je je verhaal laat aansluiten bij wat mensen kennen, daar maak je het veel begrijpelijker mee voor het publiek.' Ook geven de coaches tips over visueel materiaal. Hoewel het soms zo logisch lijkt om je verhaal kracht bij te zetten met een meegenomen object, is dat niet voor iedereen vanzelfsprekend. 't Hart vertelt over een spreker op TEDxDelft die een heupbot meenam om zijn talk te ondersteunen: 'Zo'n man heeft er dus nog nooit over nagedacht, terwijl hij al heel zijn leven iets met die botten doet, om er dan gewoon een keer eentje mee te nemen. Dat is voor hem een geval van: hoe kom je erop, hoe heb je dat bedacht!?' Al met al gaat er veel coaching vooraf aan het houden van de TEDtalks, waarin er ook in meerdere of mindere mate aandacht wordt besteed aan het gebruiken van technieken die retentie bevorderen. Door die uitgebreide voorbereiding van de talks die door professionele sprekers gehouden worden, leent dit genre zich goed voor een uitgebreide analyse.

5.2 Het corpus

Om een goed onderbouwd beeld te kunnen krijgen van de gebruikte visuele middelen in TEDtalks, is gekozen voor een corpus van zestien talks. Dat is een aantal dat een variëteit aan onderwerpen en toespraken met zich meebrengt en daarmee een goede indruk geeft van het genre TEDtalks. De TEDtalks zijn makkelijk te verkrijgen,

aangezien alle talks op video worden vastgelegd en vele daarvan zijn terug te vinden op *www.ted.com*. Elke wereldburger met internet heeft toegang tot de video's. Op die site zijn verschillende kijklijsten opgesteld, waarin TEDtalks geordend zijn op genre, populariteit, onderwerp, etc. Voor het corpus dat in dit onderzoek gebruikt wordt, is gekozen voor de lijst van de zestien *Most popular talks of all time*. Deze zestien talks zijn het meest populair op *www.ted.com*. Dat betekent dat er veel mensen zijn die naar deze talks gekeken hebben. Naar de eerste talk op de lijst, de talk van Ken Robinson met de titel *How school kills creativity*, keken bijvoorbeeld meer dan 33 miljoen via *www.ted.com*. Ook via andere sites zijn de talks te bekijken. Zo heeft het filmpje van Robinson op *www.youtube.com* al meer dan 8 miljoen views. Op basis van die grote aantallen kijkers, kan worden geconcludeerd dat men enthousiast is over deze TEDtalks en dat ze in zekere mate als goed, leuk en/of interessant worden gekwalificeerd. Dat de talks bovenaan een lijst met populaire talks staan, zorgt er wel voor, dat bezoekers van *www.ted.com* sneller op de talks klikken, waardoor ze bovenaan de lijst blijven staan. Daarnaast kan het zijn dat vooral het onderwerp of de bekendheid van de spreker mensen aanspreekt en niet per se de talk zelf. Hoewel deze nadelen niet moeten worden genegeerd, blijft buiten kijf staan dat de talks bovenaan een lijst staan die de titel *The most popular talks of all time* draagt. Over de hele wereld hebben velen dus naar deze talks gekeken en is er iets interessants of boeiends in de toespraken dat kijkers aantrekt. Al met al kan worden gesteld dat het genre van TEDtalks goed bij dit onderzoek past, aangezien er uitgebreid is nagedacht over de voordracht en de talks eenvoudig (met ondertitels) toegankelijk zijn. In vergelijking met andere genres van toespraken waarbij een spreker vaak geen visuele ondersteuning heeft, bijvoorbeeld in de Tweede Kamer, wordt er in TEDtalks veel gebruik gemaakt van *visuals*. Verder is er nog weinig kwalitatief en kwantitatief onderzoek naar het genre gedaan. Giuseppina Scotto di Carlo was in 2014 een van de eersten die een groot corpus van TEDtalks onderwierp aan een analyse. Ze concludeerde dat er in een TEDtalk veel nadruk ligt op de relatie die de spreker met z'n onderwerp heeft en op hoe hij daar persoonlijk mee in aanraking is gekomen. 'So science once again becomes ideas to be discussed rather than information to be received.' (2014:605).

De zestien TEDtalks die opgenomen zijn in het corpus, zijn de volgende:

Ken Robinson - How schools kill creativity (2006)

Amy Cuddy - Your body language shapes who you are (2012)

Simon Sinek - How great leaders inspire action (2009)

Brené Brown - The power of vulnerability (2010)

Jill Bolte Taylor - My stroke of insight (2008)

Pranav Mistry - The thrilling potential of SixthSense technology (2009)

Mary Roach - 10 things you didn't know about orgasm (2009)

Tony Robbins - Why we do what we do (2006)

Dan Pink - The puzzle of motivation (2009)

David Gallo - Underwater astonishments (2007)

Dan Gilbert - The surprising science of happiness (2004)

Susan Cain - The power of introverts (2012)

Pattie Maes, Pranav Mistry - Meet the SixthSense interaction (2009)

Elizabeth Gilbert - Your elusive creative genius (2009)

Hans Rosling - The best stats you've ever seen (2006)

Pamela Meyer - How to spot a liar (2011)

5.3 Opstelling van het codeboek

Om het samengestelde corpus te analyseren, is er een codeboek nodig waardoor overzichtelijk in beeld kan worden gebracht welke visuele retentietechnieken er voorkomen in de TEDtalks en op welke manier de visuele technieken worden geïntroduceerd. Hoofdstuk 4 bestaat uit een opsomming van visuele technieken die door auteurs van adviesliteratuur worden aangeraden om te gebruiken in een toespraak. De in hoofdstuk 4 geselecteerde visuele technieken zijn:

- Object
- Projectie - afbeelding
- Projectie - schematische weergave
- Projectie - videomateriaal
- Projectie - visuele tekst

Het doel van dit onderzoek is om de frequentie van de visuele retentietechnieken te noteren en die voorkomens vervolgens te duiden. Dit onderzoek is dus zowel kwantitatief als kwalitatief van aard. Kwantitatief omdat er geteld wordt hoe vaak de technieken voorkomen. Bij een kwantitatieve inhoudsanalyse gaat het om aantallen en is er weinig interpretatie nodig. Het onderzoeksproces verloopt lineair, volgens vaste stappen. Aan de hand van het codeboek wordt er kwantitatief geteld hoeveel technieken er voorkomen in de TEDtalks. De duiding van die resultaten wijst op een kwalitatief onderzoek. Kwalitatief onderzoek legt patronen bloot en benoemt categorieën. Dat proces wordt ook wel *iteratief* genoemd, omdat er steeds opnieuw naar het materiaal gekeken wordt: ‘Je kijkt naar het materiaal, je bedenkt iets, gaat nog eens naar het materiaal kijken en stelt je gedachten bij’. Een zich herhalend proces dus (Koetsenruijter en Van Hout 2014: 110). In het resultatenhoofdstuk zullen de resultaten zowel kwalitatief als kwantitatief worden behandeld.

De analyse heeft een gedetailleerde omschrijving van die verschillende technieken, die te vinden is in een codeboek. Op die manier worden de grenzen tussen en binnen de verschillende technieken bewaakt. Dat bevordert de helderheid en betrouwbaarheid van het onderzoek.

Het codeboek is opgesteld per visuele techniek en ziet er als volgt uit:

Tabel 1, codeboek voor ‘Object’

Object	
Passage wordt gecodeerd als:	<ol style="list-style-type: none"> 1. De spreker een voorwerp in handen heeft zonder er expliciet over te praten. 2. De spreker een voorwerp in handen heeft en er expliciet over praat. 3. Er een voorwerp zichtbaar is dat (nog) niet in handen van de spreker is.
Voorbeeld	(De spreker ontvangt een wapen in zijn hand.) “Thanks. Ladies and gentlemen. I share your goals. I share the goals of the speakers you heard before. I did not choose to take up the pen, the brush, the camera. I chose this instrument. I chose the gun.” ⁶

⁶http://www.ted.com/talks/peter_van_uhm_why_i_chose_a_gun

Coderen	De passage die de spreker spreekt ten tijde van het zichtbaar zijn van een object, wordt geselecteerd en gecodeerd. In het eerste geval als ‘object in handen zonder duiding’. In het tweede geval als ‘object in handen met duiding’ en in het derde als ‘object niet in handen, maar wel zichtbaar op het podium’.
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Tabel 2, codeboek voor ‘Projectie – afbeelding’

Projectie – Afbeelding	
Passage wordt gecodeerd als:	<ol style="list-style-type: none"> 1. De spreker beeld laat zien in de vorm van een afbeelding en er tegelijkertijd over begint te spreken. 2. De spreker spreekt over een afbeelding en het dan laat zien. 3. De spreker een afbeelding laat zien en er vervolgens over spreekt.
Voorbeeld	(Er verschijnt een foto in beeld van de spreker die aan het werk is.) “But our hard work paid off. We discovered many incredible specimens. There's the largest dinosaur bone that had ever been found in this part of the Sahara.” ⁷
Coderen	De passage die de spreker spreekt over de getoonde afbeelding, wordt geselecteerd en gecodeerd. In het eerste geval als ‘Projectie - afbeelding, woord en beeld’. In het tweede geval als ‘Projectie - afbeelding, beeld na woord’ en in het derde als ‘Projectie - afbeelding, woord na beeld’.

Tabel 3, codeboek voor ‘Projectie - schematische weergave’

Projectie – Schematische Weergave	
Passage wordt gecodeerd als:	1. De spreker beeld laat zien in de vorm van een schema (grafiek/diagram/tabel) en er tegelijkertijd over begint te spreken.

⁷http://www.ted.com/talks/nizar_ibrahim_how_we_unearthed_the_spinosaurus/transcript?language=en#t-133698

	<p>2. De spreker spreekt over een schema (grafiek/diagram/tabel) en het dan laat zien.</p> <p>3. De spreker een schema (grafiek/diagram/tabel) laat zien en er vervolgens over spreekt.</p>
Voorbeeld	(Er verschijnt een grafiek in beeld.) “This is where I realized that there was really a need to communicate, because the data of what's happening in the world and the child health of every country is very well aware. We did this software which displays it like this: every bubble here is a country.” ⁸
Coderen	De passage die de spreker spreekt over het getoonde schema, wordt geselecteerd en gecodeerd. In het eerste geval als ‘Projectie – schematische weergave, woord en beeld’. In het tweede geval als ‘Projectie - schematische weergave, beeld na woord’ en in het derde als ‘Projectie - schematische weergave, woord na beeld’.

Tabel 4, codeboek voor ‘Projectie – videomateriaal’

Projectie – Videomateriaal	
Passage wordt gecodeerd als:	<p>1. De spreker beeld laat zien in de vorm van videomateriaal en er tegelijkertijd over begint te spreken.</p> <p>2. De spreker spreekt over videomateriaal en het dan laat zien.</p> <p>3. De spreker videomateriaal laat zien en er vervolgens over spreekt.</p>
Voorbeeld	“Let's look at the first video. I hope you'll think it's a good example of harmony. And then speak a little bit about how it comes about.” ⁹ (De video wordt vervolgens afgespeeld.)
Coderen	De passage die de spreker spreekt over het getoonde videomateriaal, wordt geselecteerd en gecodeerd. In het eerste geval als ‘Projectie -

⁸http://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen/transcript?language=en#t-117635

⁹ http://www.ted.com/talks/itay_talgam_lead_like_the_great_conductors/transcript?language=nl#t-165000

	videomateriaal, woord en beeld’. In het tweede geval als ‘Projectie - videomateriaal, beeld na woord’ en in het derde als ‘Projectie - videomateriaal, woord na beeld’.
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Tabel 5, codeboek voor ‘Projectie – visuele tekst’

Projectie – Visuele Tekst	
Passage wordt gecodeerd als:	<ol style="list-style-type: none"> 1. De spreker beeld laat zien in de vorm van visuele tekst en er tegelijkertijd over begint te spreken. 2. De spreker tekst uitspreekt die vervolgens in beeld verschijnt. 3. De spreker tekst laat zien en er vervolgens over spreekt.
Voorbeeld	(De schuingedrukte passage verschijnt in beeld.) “Well, according to the biological literature, <i>‘During copulation, the genitalia of certain males may elicit more favorable female responses through superior mechanical or stimulatory interaction with the female reproductive tract.’</i> Mm-hm.” ¹⁰
Coderen	De passage die de spreker spreekt over de getoonde visuele tekst, wordt geselecteerd en gecodeerd. In het eerste geval als ‘Projectie - visuele tekst, woord en beeld’. In het tweede geval als ‘Projectie - visuele tekst, beeld na woord’ en in het derde als ‘Projectie - visuele tekst, woord na beeld’.

Deze methode, het gebruik van een codeboek, is geschikt voor een zoektocht naar visuele retentietechnieken in TEDtalks, omdat de omschrijvingen per techniek gedetailleerd zijn en daarmee goed toepasbaar op een TEDtalk. Op een overzichtelijke manier kan in beeld worden gebracht van welke technieken er sprake is. Als de spreker bijvoorbeeld tekst uitspreekt die vervolgens in beeld verschijnt, dan staat er in het codeboek welke techniek daarmee gevonden is.

¹⁰ http://www.ted.com/talks/carín_bondar_the_birds_and_the_bees_are_just_the_beginning/transcript

5.4 Gebruik van het codeboek en een voorziene moeilijkheid

Hoewel er veel al duidelijk wordt uit het codeboek zelf, is nog enige uitleg en explicatie nodig voor bijzonderheden waar aandacht aan zal moeten worden besteed bij een analyse die op basis van dit codeboek gedaan wordt. Een moeilijkheid die wordt voorzien, wordt hier ook genoemd. De aandachtspunten maken geen onderdeel uit van het codeboek. Ze zijn opgesteld op basis van de in dit onderzoek genoemde theorie, maar hebben meer onderzoek nodig om duidelijke conclusies te kunnen trekken over hun effect. Omdat ze wel kunnen bijdragen aan een hogere interbeoordelaarsbetrouwbaarheid, zijn ze in deze paragraaf opgenomen.

5.4.1 Volgorde van tekst en beeld

Onder andere Mayer toonde aan dat het verschil uitmaakt of tekst en beeld tegelijk verschijnen in een presentatie of na elkaar (Mayer & Anderson 1992: 450). Het is daarom dat er in het codeboek onderscheid wordt gemaakt tussen beeld dat tegelijk met de woorden van de spreker verschijnt, beeld dat na de woorden van de spreker verschijnt en beeld dat voor de woorden van de spreker verschijnt.

5.4.2 Onderscheid tussen statisch en dynamisch

Bij de visuele technieken *Projectie – visuele tekst*, *Projectie – afbeelding* en *Projectie – schematische weergave* kan er verschil zijn in het in beeld verschijnen van de projectie. Op sommige momenten komt alle informatie in één keer in beeld en op andere momenten verschijnen de afbeeldingen of de tekst in delen één voor één in beeld. Mayer (2005: 264) toonde aan dat uitleg over een product beter werd begrepen door studenten wanneer zij stilstaande tekst voor zich zagen in combinatie met een afbeelding, dan wanneer de tekst via animatie (beweging) tot hen kwam. Holzinger, Kickmeier-Rust en Albert (2008) daarentegen, toonden aan dat bewegend beeld juist bevorderlijk is voor het onthouden van informatie. Wat daarbij wel moet worden opgemerkt, is dat zij bewegende animaties tegenover tekst uit een leerboek zetten. De tekst was dus niet geprojecteerd, zoals dat in Mayers onderzoek wel het geval was. Ook Höffler en Leutner (2007) concluderen na experimenteel onderzoek dat bewegende beelden een groter effect hebben op het opslaan van informatie dan statische tekst dat heeft. Hoewel de bewegende beelden uit de zojuist genoemde onderzoeken niet allemaal hetzelfde zijn als het bewegende beeld uit TEDtalks (animaties zijn vaak bewegende

plaatjes, terwijl bewegend beeld ook kan betekenen dat tekst stap voor stap in beeld verschijnt), worden de visuele technieken in dit onderzoek verder onderverdeeld in de subcategorieën *statische projectie* en *dynamische projectie*. Feit blijft namelijk dat een dynamische projectie een ander effect op de toehoorder kan hebben dan een statische projectie. Dat wordt in het analyseprogramma dat voor deze analyse gebruikt wordt, *Atlas.ti*, aangegeven door een (S) of een (D) als opmerking bij de techniek te plaatsen. Deze subcategorieën zijn alleen door mij onderscheiden. Mijn medeonderzoekers hebben deze subcategorieën niet meegenomen in hun analyse.

5.4.3 De spreker tekent of schrijft

Wanneer sprekers zelf een schema tekenen op een flipoverpapier, dan is dat beeld gecodeerd als *Projectie – schematische weergave* (D), aangezien er niet in een keer een beeld wordt getoond, maar dat langzamerhand ontstaat.

5.4.4 Niet relevante projectie

Bij *Projectie – afbeelding* kan het zijn dat de getoonde afbeelding niets te maken heeft met de gesproken woorden. Soms is een beeld alleen bedoeld als achtergrondfoto zonder dat de inhoud van de foto iets te maken heeft met de gesproken tekst. Een afbeelding van een bloem of iets anders uit de natuur wordt hier vaak voor gebruikt. In dat geval is er geen sprake van woord en beeld, woord na beeld of beeld na woord en wordt de categorie alleen gecodeerd als *Projectie – afbeelding*. Dit onderscheid wordt gemaakt omdat is bewezen dat irrelevante informatie de informatie die wel relevant is en goed moet worden overgebracht, soms in de weg zit (Mayer 2009: 89-98). Het oordeel dat geveld wordt over de irrelevantie van een afbeelding is zeer subjectief. Een beoordelaar kan wellicht aanvoelen dat het vertonen van een bloem vaak niet relevant is als er gesproken wordt over een auto, maar het blijft de interpretatie van de beoordelaar als een afbeelding tot niet relevant wordt bestempeld. Met deze verzwakking van het oordeel over de relevantie van de afbeelding moet worden gerekend als er uitspraken worden gedaan over de interbeoordelaarsbetrouwbaarheid.

5.4.5 Meerdere codes

Passages kunnen meerdere codes tegelijkertijd krijgen, wanneer er tegelijkertijd een afbeelding en tekst in beeld komt. Dat wordt gecodeerd als *Projectie – afbeelding*,

woord en beeld/beeld na woord/woord na beeld en *Projectie – visuele tekst, woord en beeld/beeld na woord/woord na beeld*.

5.4.6 Tien seconden voor het beeld en tien seconden na het beeld

De term *woord en beeld* wordt verbonden aan passages waarin de spreker over het beeld spreekt en het tegelijkertijd laat zien. Volgens Mayer onthoudt een ontvanger meer informatie als woord en beeld tegelijk worden vertoond, dan wanneer de ontvanger eerst de woorden ziet en vervolgens pas het beeld. In het onderzoek dat Mayer naar deze twee mogelijkheden deed, liet hij een groep studenten eerst een omschrijving lezen van de werking van een fietspomp. Nadat ze die tekst gelezen hadden, kregen ze de werking ook te zien (1991:484). Dat beeld kregen ze niet een paar seconden later, maar een paar minuten later te zien. Het is daarom dat passages in de analyse van dit onderzoek ook als *woord en beeld* worden genoteerd als het beeld tien seconden eerder of tien seconden later dan de woorden verschijnt. In vergelijking met het onderzoek dat Mayer deed naar de combinatie van woord en beeld en de opeenvolging van woord en beeld, zijn die tien seconden verwaarloosbaar en zullen die niet veel verschil maken in de hoeveelheid informatie die wordt vastgehouden. Een kanttekening die hierbij moet worden geplaatst, is dat dit onderzoek van Mayer er een is die het verschil in minuten onderzoekt, terwijl het niet ondenkbaar is dat er ook onderzoeken kunnen worden uitgevoerd die onderzoeken of seconden verschil maken. Volgens Mayers onderzoek zijn die tien seconden dus verwaarloosbaar, maar er is meer onderzoek nodig om te vinden of die paar seconden niet toch veel verschil maken. Voor een analyse op basis van de theorie die in dit onderzoek uiteen wordt gezet, wordt het onderzoek van Mayer aangehouden.

5.4.7 Mogelijke moeilijkheid in de analyse

Een passage wordt gecodeerd wanneer er visuele middelen worden gebruikt. Het is niet altijd 100% duidelijk wanneer het visuele middel wordt ingezet. Het hele podium van de TEDconferentie is namelijk niet altijd in zijn geheel in beeld. Dat betekent dat niet altijd te zien is wat er op het scherm achter de spreker in beeld staat en dus ook niet wanneer de spreker wisselt van beeld. Omdat de mogelijkheid om het hele podium op elk moment van de presentatie te zien niet beschikbaar is, is er een inschatting gemaakt van wat het meest waarschijnlijk is. Wanneer het beeld voor de videokijker niet meer in beeld is, wordt ervan uitgegaan dat het beeld ook daadwerkelijk verdwenen is, tenzij er

niet meer dan twee zinnen tussen het eerdere beeld en het volgende beeld worden uitgesproken. Dan wordt aangenomen dat het eerdere beeld blijft staan tot het volgende beeld. Twee zinnen zijn vaak namelijk net lang genoeg om het onderwerp dat bij het beeld uitgesproken wordt af te ronden. Maar, ook deze aanname behoeft meer onderzoek om duidelijke uitspraken te doen over de beslissingen die in een analyse moeten worden genomen op basis van het wel of niet in beeld zijn van dia's.

HOOFDSTUK 6 DE ANALYSE

Met het codeboek als leidraad zijn de zestien TEDtalks geanalyseerd. Hoe die analyse is uitgevoerd wordt in dit hoofdstuk duidelijk. In paragraaf 6.1 wordt verteld over het onderzoeksproces en in paragraaf 6.2 komen problemen die tijdens de analyse naar voren kwamen aan bod. Dit hoofdstuk wordt afgesloten met paragraaf 6.3, waarin de betrouwbaarheid van de analyse wordt besproken.

6.1 Onderzoek: de uitvoering

Elke TEDtalk is apart en zorgvuldig geanalyseerd aan de hand van het opgestelde codeboek. Voordat die analyse kon beginnen, zijn de talks eerst verzameld op papier. Bij de video's die via *www.ted.com* te zien zijn, is er een interactief transcript beschikbaar in soms wel 59 verschillende talen. De transcripties zijn zeer gedetailleerd en geven letterlijk weer wat er gezegd wordt in de TEDtalk. Ook staan er publieksreacties in vermeld. Er is bijvoorbeeld *applause* of *laughter* in de lopende tekst genoteerd om aan te geven dat het publiek applaudisseert en lacht. De publieksreactie is niet relevant voor de analyse, maar zit een analyse ook niet in de weg en is daarom niet uit het transcript verwijderd voor de analyse.

De zestien TEDtalks zijn eerst een keer bekeken zonder dat er een analyse op werd losgelaten. Op die manier was er bij aanvang van de analyse een duidelijk beeld van het onderwerp en de inhoud van de talk aanwezig. Vervolgens zijn de video's nog een keer bekeken en werd er op de geprinte versie gemarkeerd op welke plekken er visuele middelen werden gebruikt in de talk (in bijlage 1 met een rode kleur aangegeven in de tekst). Na deze tweede keer van doornemen van de TEDtalk, werd het codeboek erbij gepakt. Een voor een werden de gemarkeerde passages gekoppeld aan de codes uit het codeboek. Voor deze analyse is een analysemodel opgesteld waar de codes konden worden ingevuld. Daarbij is genoteerd wat er op de projectie wordt getoond of welk object er is meegenomen. Deze specificatie is nodig, omdat er in de resultaten aandacht wordt besteed aan de relevantie van de projectie of het object. Als er geen link te leggen is tussen de projectie en de gesproken tekst, dan kan de invloed op het geheugen minder duidelijk aanwezig zijn dan wanneer die link er wel is. Een niet relevante projectie kan ervoor zorgen dat relevante informatie naar de achtergrond verdwijnt (Mayer 2009: 89-98). Een voorbeeld van een ingevuld analysemodel ziet er als volgt uit:

Spreker: Amy Cuddy

Titel: Your body language shapes who you are

Totale tijd: 20:59 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1: Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee foto's van Merkel en Sarkozy en hun lichaamstaal naar elkaar.

Passage: “You know, we're interested in, like, you know — (Laughter) — an awkward interaction, or a smile, or a contemptuous glance,”

2: Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een knipoog van Sarah Palin.

Passage: “or maybe a very awkward wink, or maybe even something like”

3: Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Een filmpje van een wachter bij het huis van de Prime Minister die wél een hand krijgt van president Obama, maar geen hand van de Prime Minister, hoewel de wachter zijn hand wel uitsteekt.

Passage: “Narrator: Here they are arriving at Number 10. This lucky policeman gets to shake hands with the President of the United States. Here comes the Prime Minister -- No.”

Op basis van het analysemodel zijn de technieken vervolgens ingevoerd in het programma *Atlas.ti*. Met behulp van dat programma ontstaat er een duidelijk overzicht van de gebruikte technieken per TEDtalk en de gebruikte technieken in het hele corpus.

6.2 Problemen tijdens de analyse

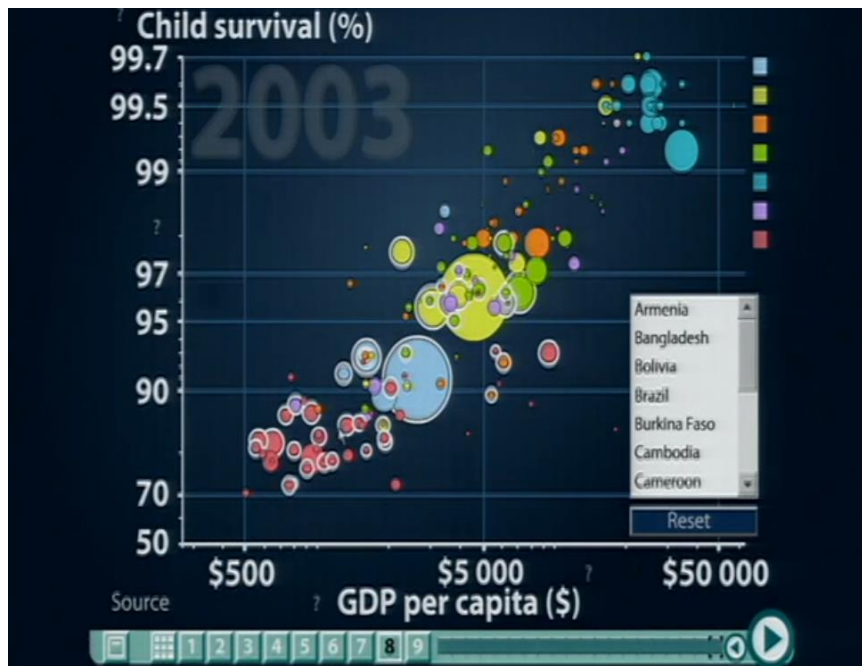
Tijdens de analyse bleek dat er projecties waren die lastig waren te coderen. Zo verschenen er grafieken in beeld waar veel tekst in stond verwerkt. Deze visuele middelen zouden kunnen worden gecodeerd als *Projectie – schematische weergave*, maar ook als *Projectie – schematische weergave en Projectie – visuele tekst*.

Uiteindelijk is gekozen voor een enkele codering: *Projectie – schematische weergave*.

Dit is gedaan omdat de tekst in het schematische beeld een onderdeel is van dat

schematische beeld en dus ook als zodanig kan worden geduid. (Schematische weergaven bevatten altijd tekst, omdat er bij grafieken en tabellen altijd wordt aangegeven in woorden of cijfers welke informatie er wordt uitgedrukt in het beeld.) Een voorbeeld hierbij is de talk *The best stats you've ever seen* van Hans Rosling, waarin er veel bewegende grafieken voorbij komen.

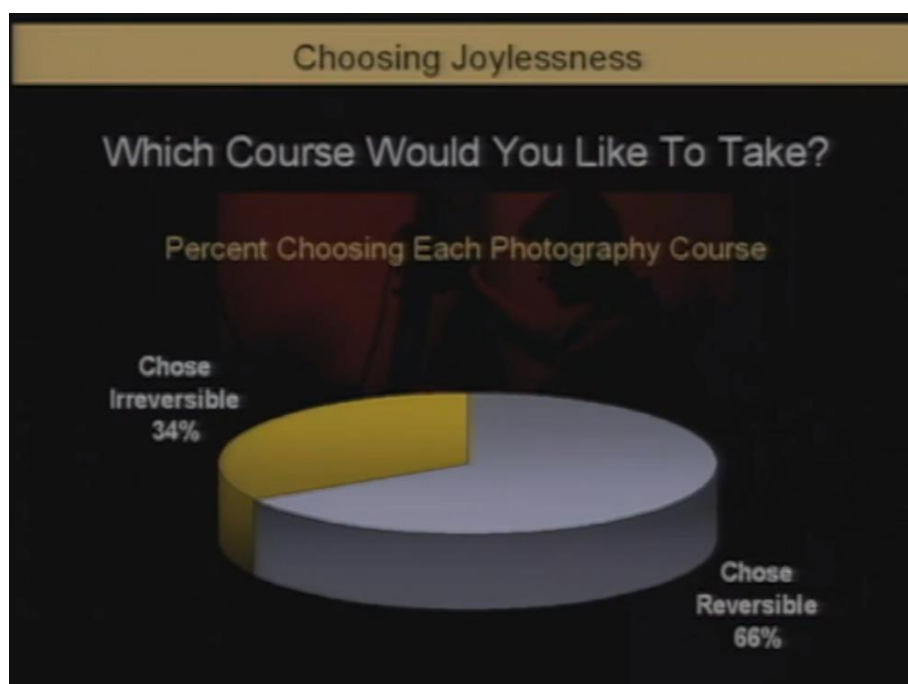
Figuur 9, slide uit de presentatie van Hans Rosling



In die grafieken staan namen van landen, de betekenis van de getallen op de x- en de y-as, etc. Dit beeld is dus alleen gecodeerd als *Projectie – schematische weergave*.

Wanneer er een titel op de dia stond vermeld die los stond van de grafiek of de tabel, dan werd die passage wél gecodeerd als *Projectie – schematische weergave* en *Projectie – visuele tekst*. Daar is een voorbeeld van te zien in de talk *The surprising science of happiness* van Dan Gilbert.

Figuur 10, slide uit de presentatie van Dan Gilbert



De woorden *Choosing Joylessness* maken hier geen deel uit van de cirkeldiagram.

6.3 Controle van de analyse en de betrouwbaarheid van de methode

Om te controleren of de juiste codes en passages zijn verbonden aan de gevonden visuele technieken, is door een medeonderzoeker, die aan ditzelfde onderzoek meewerkt, een analyse gedaan van acht van de zestien talks, om zo de mate van beoordelaarsbetrouwbaarheid vast te stellen door middel van Cohen's Kappa. Aan de hand van het codeboek heeft zij, de tweede beoordelaar, de mogelijkheid gehad om onafhankelijk van mij, de eerste beoordelaar, op eenzelfde manier het corpus van TEDtalks te analyseren. Ter instructie kreeg de tweede beoordelaar het codeboek mee met daarbij de instructies uit paragraaf 5.4 over het gebruik van het codeboek. Ook zij voerde haar analyse in in het programma *Atlas.ti*, waardoor de twee analyses goed met elkaar konden worden vergeleken. Wanneer de gemarkeerde passage van de tweede analysator één zin eerder of later begon dan de door de eerste beoordelaar gemarkeerde passage, is genoteerd dat de codering voor die passage gelijk was. Dat is de foutmarge van de analyse. Voor de codering zelf maakt het niet uit of de passage een zin eerder of later wordt gecodeerd. Als de passage de codering *woord en beeld* meekrijgt, dan is het ook nog steeds *woord en beeld* als de codering een zin later begint, gezien de *tien seconden voor het beeld en tien seconden na het beeld*-regel uit paragraaf 5.4.6.

Om een zo duidelijk mogelijk beeld te krijgen van de interbeoordelaarsbetrouwbaarheid, is de kappa berekend voor de vijf hoofdtechnieken en voor de zestien (meer gedetailleerde) technieken. In de analyse kwam namelijk naar voren dat de tweede beoordelaar zo nu en dan een andere specificatie toevoegde aan de code. Waar de eerste beoordelaar bijvoorbeeld *Projectie – afbeelding, woord na beeld* had genoteerd, beschreef de tweede beoordelaar die passage als *Projectie – afbeelding, woord en beeld*. De hoofdtechniek van deze twee coderingen is hetzelfde, namelijk *Projectie – afbeelding*. In de berekening met de vijf hoofdtechnieken kwamen deze coderingen dus overeen, terwijl ze in de berekening met de zestien technieken als verschillend werden opgenomen. Hoewel er dus meer ongelijkheden te vinden waren in de berekening op basis van de zestien technieken, komt er zowel uit die berekening als uit de berekening voor de vijf hoofdtechnieken een kappa die een hoge mate van betrouwbaarheid aangeeft. Voor de vergelijking aan de hand van de zestien codes is de kappa 0,73 en aan de hand van de vijf codes 0,79. De scores vallen daarmee in de categorie *substantial agreement* (Viera & Garret 2005). In bijlage 3 zijn de tabellen te vinden waar de berekening van de kappa te zien is.

Hoewel de kappa hoog uitvalt, moeten er wel een paar kanttekeningen worden geplaatst bij de interbeoordelaarsbetrouwbaarheid in deze analyse. De codes die de eerste en de tweede beoordelaar aan de verschillende visuele retentietechnieken verbonden, waren over het algemeen vaak gelijk, maar de passages waarop die codes betrekking hadden verschilden regelmatig en kwamen niet overeen met de eerder genoemde foutmarge. De tweede beoordelaar codeerde langere passages dan de eerste beoordelaar. Dit hing vaak samen met de al in paragraaf 5.4.7 verwachte moeilijkheid: het beeld dat de kijker van de video ziet is niet altijd het beeld dat het publiek in de zaal ziet. Zo weet de videokijker (en dus degene die de analyse van dit corpus doet) niet altijd zeker dat de slides die op de video niet meer in beeld zijn, ook in de zaal niet meer in beeld zijn. Daar is in paragraaf 5.4.7 het volgende over gezegd: ‘Wanneer het beeld voor de videokijker niet meer in beeld is, wordt ervan uitgegaan dat het beeld ook daadwerkelijk verdwenen is, tenzij er niet meer dan twee zinnen tussen het eerdere beeld en het volgende beeld worden uitgesproken. Dan wordt aangenomen dat het eerdere beeld blijft staan tot het volgende beeld.’ Waar de eerste beoordelaar ervan uitging dat het beeld niet meer terugkwam omdat er langer dan twee zinnen was gesproken zonder dat daar beeld bij werd vertoond, codeerde de tweede beoordelaar die

passage toch nog langer door, totdat er een nieuw beeld verscheen. De lengte van de stukken passages die extra werden gecodeerd verschilde per code. Soms waren het een paar zinnen extra en soms meer dan twintig zinnen extra. De passages zijn in het geval van twintig zinnen extra bij de tweede beoordelaar wel als gelijke beoordeeld. De code die er aan de gemarkeerde passage door beide beoordelaars gegeven was, kwam namelijk wel overeen en had dus op dezelfde visualisatie betrekking. Wanneer het codeboek uit deze analyse voor een ander onderzoek wordt gebruikt, moet er duidelijk met de tweede beoordelaar worden afgesproken welk gedeelte van een passage er wordt gecodeerd. Op die manier komen de codes niet alleen overeen, maar ook de passages waarop die codes betrekking hebben.

Een andere moeilijkheid ontstond door de onderverdeling in statische en dynamische slides. Dat is een onderverdeling die alleen de eerste beoordelaar gemaakt heeft. De tweede beoordelaar hoefde die tweedeling niet aan te geven. Dat heeft consequenties gehad. Waar de eerste beoordelaar één passage als dynamisch noteerde, heeft de tweede beoordelaar die passage gezien als meerder passages achter elkaar. Steeds wanneer er een nieuwe zin of een nieuw beeld op de slide verscheen, codeerde de tweede beoordelaar dat als nieuwe code. De tweede beoordelaar hing daarmee meerdere codes aan de tekst dan de eerste beoordelaar deed. Dit gebeurde omdat uit het codeboek niet duidelijk wordt dat een dynamische slide als één slide gezien wordt. Hoewel de onderverdeling in statisch en dynamisch niet het hoofddoel van dit onderzoek was en als extra element is toegevoegd, zou in een volgend onderzoek duidelijker in het codeboek naar voren moeten komen wat het verschil is tussen statisch en dynamisch en dat een dynamische slide als één slide wordt gezien.

Het codeboek zoals dat er nu ligt werkt goed, gezien de betrouwbaarheid van de twee analyses van de beoordelaars, maar zou nog beter kunnen werken als de zojuist genoemde elementen daarin worden opgenomen. Ook de andere punten uit paragraaf 5.4 moeten worden meegegeven aan een tweede beoordelaar om de betrouwbaarheid van de beoordeling te vergroten. Maar, een begin van onderzoek naar visuele retentietechnieken in toespraken is met deze analysemethode gemaakt. De resultaten bevatten een hoge mate van betrouwbaarheid en de scores zijn overzichtelijk te noemen.

HOOFDSTUK 7 RESULTATEN

In dit hoofdstuk worden de resultaten besproken van de analyse in zestien TEDtalks. Door middel van het programma *Atlas.ti* kan worden geconstateerd hoeveel visuele retentietechnieken er voorkomen in de talks. Die constatering is kwantitatief van aard en wordt vervolgens kwalitatief geduid. In paragraaf 7.1 worden de algemene resultaten besproken die iets zeggen over het gehele corpus van TEDtalks en paragraaf 7.2 gaat specifiek in op de verschillende talks.

7.1 Resultaten van het hele corpus: kwantitatief en kwalitatief geduid

In hoofdstuk 5 zijn de vijf verschillende visuele retentietechnieken op een rij gezet die in het corpus zouden kunnen voorkomen. Die vijf technieken konden elk op drie manieren worden gecodeerd. Of als *woord en beeld*, of als *beeld na woord* of als *woord na beeld*. Dat maakt dat er in totaal vijftien verschillende codes aan passages in het corpus konden worden gegeven. In paragraaf 5.4.4 kwam daar nog de code *Projectie – afbeelding* bij, waar geen extra manier aan was toegevoegd. Deze code zou worden toegekend aan afbeeldingen die niet relevant waren en niets te maken hadden met de gesproken tekst. Daarmee komt het totaal aantal codes op zestien. In totaal zijn er 321 passages gecodeerd met een van die zestien codes. In twee talks werden geen visuele technieken waargenomen. Dat was in de talk *How schools kill creativity* van Ken Robinson en in de talk *Your elusive creative genius* van Elizabeth Gilbert. Ook deze twee talks maken deel uit van de lijst van meest populaire TEDtalks. Populariteit staat dus niet gelijk aan het gebruik van visuele middelen in een talk. Ook zonder visuele middelen kunnen TEDtalks het publiek boeien. Maar de hoeveelheid informatie die wordt opgeslagen na het zien van de talk zal hoogstwaarschijnlijk minder zijn dan in de rest van de talks in het corpus. Publiek dat geen visuele ondersteuning krijgt, onthoudt minder informatie dan publiek dat wel visuele ondersteuning heeft gehad (Andeweg en Blokzijl 2006:121; Mayer 2009:3; Mayer en Gallini 1990:724).

In tabel 6 is een overzicht weergegeven van de gevonden technieken.

Tabel 6, gevonden technieken in de TEDtalks

Visuele retentietechnieken	Voorkomens	Percentage
Object in handen met duiding	5	2%
Object in handen zonder duiding	0	0%
Object niet in handen maar wel in beeld	4	1%
Projectie - afbeelding, beeld na woord	0	0%
Projectie - afbeelding, woord en beeld	136	42%
Projectie - afbeelding, woord na beeld	1	0%
Projectie - schematische weergave, beeld na woord	0	0%
Projectie - schematische weergave, woord en beeld	14	4%
Projectie - schematische weergave, woord na beeld	1	0%
Projectie - videomateriaal, beeld na woord	0	0%
Projectie - videomateriaal, woord en beeld	24	7%
Projectie - videomateriaal, woord na beeld	0	0%
Projectie - visuele tekst, beeld na woord	1	0%
Projectie - visuele tekst, woord en beeld	128	40%
Projectie - visuele tekst, woord na beeld	2	1%
Projectie – afbeelding	5	2%
Totaal	321	100%

7.1.1 Woord na beeld en beeld na woord: een zeldzaamheid

Vijf van de zestien codes komen niet voor in het corpus. Dat zijn de volgende codes:

- Object in handen zonder duiding
- Projectie – Afbeelding, beeld na woord
- Projectie - Schematische Weergave, beeld na woord
- Projectie – Videomateriaal, beeld na woord
- Projectie – Videomateriaal, woord na beeld

De code *Projectie – visuele tekst, beeld na woord* komt één keer voor, maar dat is op het moment dat Mary Roach in haar talk *10 things you didn't know about orgasm* per ongeluk de slide laat zien waarop punt zes van haar talk in tekst is neergezet, terwijl ze die slide al eerder liet zien, toen ze daadwerkelijk over punt zes uitweidde. Ze schakelde de dia dan ook meteen door naar de dia waarop punt zeven uitgeschreven stond. Er kan dus gesteld worden dat codes met daarin de eigenschap *beeld na woord* niet voorkomen in deze TEDtalks.

Ook codes waarin een andere volgorde van woord en beeld is opgenomen, namelijk codes met daarin *woord na beeld*, komen zelden voor. *Projectie – afbeelding* en *Projectie – schematische weergave* bevatten beiden één keer een *woord na beeld*-moment en *Projectie – visuele tekst* twee keer. Bij *Projectie – videomateriaal* komt die volgorde nooit voor. Bij alle codes waarin *woord na beeld* is gescoord, overschrijdt de passage weliswaar de door mij gestelde grens waarin is besloten dat beeld maximaal tien seconden voor de gesproken tekst of tien seconden na de gesproken tekst moet verschijnen om de code *woord en beeld* te krijgen, maar zit er steeds minder dan een minuut verschil tussen het getoonde beeld en het gesproken woord. Volgens het *Temporal Contiguity Principle* dat in paragraaf 3.3.2.4 is behandeld, is een presentatie waarin woord en beeld tegelijk worden gepresenteerd beter voor het onthouden van de informatie, omdat een *learner* anders de informatie die hij leest of ziet net zo lang moet herhalen en vasthouden in het werkgeheugen totdat de informatie kan worden gekoppeld aan het beeld of het woord dat daarna verschijnt. Dat kan een *overload* aan informatie in het werkgeheugen opleveren, omdat er teveel informatie moet worden vastgehouden (Mayer 2009:153). Ook in de paar gevallen waarin de term *woord na beeld* aan de passage is verbonden, zou er een eventuele *overload* aan informatie in het geheugen kunnen zijn, maar het verschil in tijd tussen de twee manieren van presenteren is zo klein, dat dat weinig effect zal hebben op de verwerking van de informatie. Toch moet hier worden toegegeven dat de term *woord en beeld* in dit onderzoek niet heel strikt is, aangezien er een marge van 20 seconden is ingesteld. In verder onderzoek zou die marge strikter moeten worden om *woord en beeld* beter te onderscheiden van *woord na beeld* en *beeld na woord*.

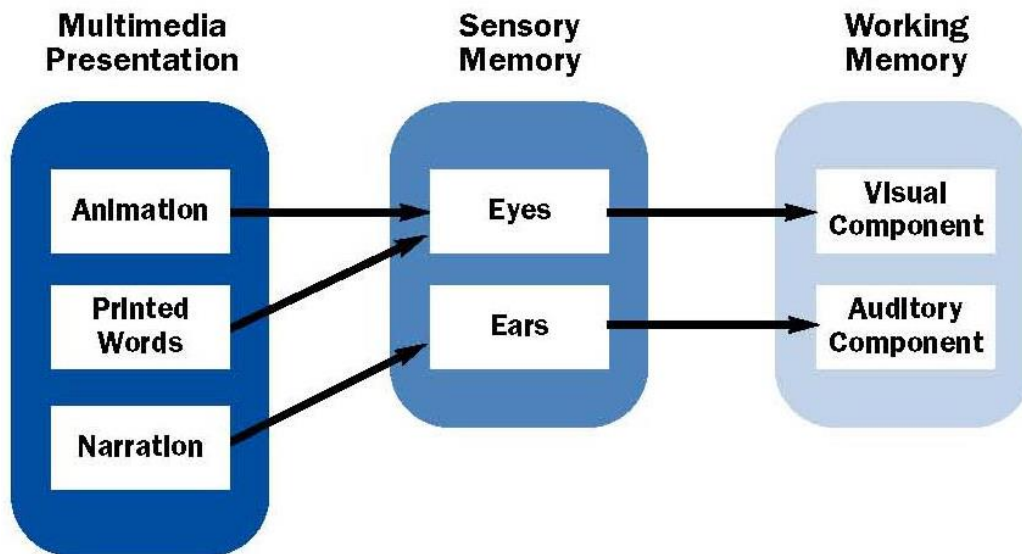
7.1.2 Afbeelding en visuele tekst, woord en beeld: meest voorkomend

De technieken *Projectie – afbeelding, woord en beeld* en *Projectie – visuele tekst, woord en beeld* komen verreweg het meeste voor in dit corpus. 136 keer is *Projectie –*

afbeelding, woord en beeld genoteerd en 128 keer *Projectie – visuele tekst, woord en beeld*. 56 voorkomens van elk werden samen aan één passage gekoppeld. Er zijn dus 80 passages die alleen de code *Projectie – afbeelding, woord en beeld* hebben en 72 passages die alleen de code *Projectie – visuele tekst, woord en beeld* hebben. Dat maakt dat bijna de helft van alle visuele technieken die in dit corpus zijn gemarkeerd (47%) een afbeelding op het scherm is of een visuele tekst op het scherm, de twee visuele middelen die volgens Mayer het meest retentie bevorderend zijn. Bij allebei de technieken worden namelijk de twee kanalen in ons geheugen gebruikt. De spreker vertelt zijn verhaal. Die informatie komt via het verbale kanaal binnen en daarnaast vertoont de spreker beeld (of een afbeelding, of visuele tekst) dat via het visuele kanaal wordt verwerkt. Een goede combinatie van woord en beeld dus (Mayer 2009: 9). Het visuele middel dat volgens Andeweg en Blokzijl (2006) veroorzaakt dat de meeste informatie wordt opgeslagen, is de projectie van visuele tekst, de visuele retentietechniek die in dit corpus na de *Projectie – afbeelding, woord en beeld* het meeste voorkomt.

56 passages kregen zowel de code *Projectie – afbeelding, woord en beeld* als *Projectie – visuele tekst, woord en beeld*. Dat zijn 112 coderingen (35% van alle codes). Dat is veel als we afgaan op wat Mayer zegt over een combinatie van woord en beeld op het scherm, hij raadt dat af. Op die manier komt er namelijk via de oren verbale informatie tot de *learner* (dat wordt verwerkt in het verbale kanaal) en via de ogen zowel visuele tekst als afbeeldingen (die worden verwerkt in het visuele kanaal). Dit is schematisch weergegeven in figuur 11. De informatie die via de afbeelding wordt overgebracht krijgt in het visuele kanaal ‘concurrentie’ van de visuele tekst die ook is afgebeeld, ook wel het *redundancy effect* genoemd (Mayer 2009: 125). Maar, de hoeveelheid tekst die samen met de afbeelding in beeld verschijnt, verschilt per talk. Bij sommige talks zijn de enige woorden die op de slide staan de woorden uit de titel van de slide, terwijl er bij andere talks lange zinnen zijn opgenomen in de slide. Op die verschillen tussen de talks wordt in paragraaf 7.2 dieper ingezoomd.

Figuur 11, het redundancy effect bij een visuele presentatie van zowel beeld als woord.



7.1.3 Visual props: weinig gebruikt

De *visual props*, in het codeboek als *object* opgenomen, komen niet vaak voor in het onderzochte corpus. Alleen Susan Cain en Jill Bolte Taylor maken gebruik van het visuele middel. Susan Cain doet dat in haar talk *The power of introverts* de gehele talk door, door steeds opnieuw te refereren naar de koffer die ze in haar hand heeft of naast zich heeft staan, terwijl Jill Bolte Taylor in haar talk *My stroke of insight* een kort moment gebruikt om uit te leggen hoe het brein in elkaar zit, door middel van het tonen van een echt menselijk brein. Zij last daar precies een minuut voor in. Twee *props* die dus op verschillende manieren worden gebruikt. Bolte Taylor laat het brein een kort moment zien om op dat moment aan de hand van de twee hersenhelften in haar hand te illustreren hoe het brein eruitziet. Als ze dat gedaan heeft is het klaar en is de *prop* niet meer nodig. Cain zorgt ervoor dat de koffer de hele talk lang zichtbaar is voor het publiek en neemt de koffer zo nu en dan eens in haar hand. Haar *prop* is meer metaforisch bedoeld dan dat ze iets wil vertellen over de *prop* zelf. Een verschil in het effect op het geheugen van het publiek zou kunnen zijn, dat het geheugen harder aan het werk is om de informatie te verwerken bij de koffer van Cain dan bij het brein van Bolte Taylor. De koffer blijft gedurende de hele talk in beeld en ook als Cain het niet over de koffer heeft, kan het publiek er nog naar blijven kijken. Het visuele kanaal wordt meer dan achttien minuten lang aan het werk gezet, terwijl Bolte Taylor een kortere tijd een beroep doet op het verwerken van informatie in het visuele kanaal. Daarbij is de

betekenis van de *prop* bij Bolte Taylor duidelijker aanwezig. Ze vertelt over onderdelen van het brein en laat dat meteen zien. Bij Cain is de betekenis van de koffer wat moeilijker te begrijpen in verband met de metaforische benadering van Cain. Hoewel het niet is bewezen, zou kunnen worden gesteld dat het publiek meer kans heeft om de informatie die Bolte Taylor overbrengt te verwerken in het geheugen, dan de informatie die Cain met haar publiek deelt.

7.1.4 Statisch versus dynamisch

Bij de technieken *Projectie – afbeelding*, *Projectie – visuele tekst* en *Projectie – schematische weergave* is ook genoteerd of het afgebeelde dynamisch of statisch in beeld werd gebracht. Onder dynamisch wordt elke slide verstaan waar beweging in zit. Dat kan betekenen dat woorden een voor een in beeld komen, maar ook dat in een staafdiagram de verschillende staven een voor een verschijnen. In dit corpus zijn aanzienlijk meer statische dan dynamische slides te vinden. 160 statische tegenover 56 dynamische slides. Hoewel niet alle onderzoeken eenduidig antwoord geven op de vraag of dynamische slides bewerkstelligen dat er een grotere hoeveelheid informatie in het geheugen wordt verwerkt, wijzen de resultaten uit het merendeel van de onderzoeken op een betere verwerking na het zien van bewegende beelden. In dat opzicht is een percentage van 17% voor het aantal dynamische slides (56 van de 328 slides) niet hoog.

7.2 Verder inzoomend op de verschillende talks

7.2.1 Hoeveelheid technieken per talk

Het gebruik van visuele middelen verschilt per talk. De talk van Dan Pink, *The puzzle of motivation*, bevat met 56 visuele middelen de meeste visuele technieken. De talk van Simon Sinek daarentegen, *How great leaders inspire action*, bevat er met twee het minst. Zijn talk onderscheidt zich van de andere talks in dit corpus, omdat het visuele middel dat gebruikt wordt een flipover is waar Sinek op schrijft. Door steeds te wijzen op de cirkels met tekst die hij heeft getekend/geschreven, koppelt hij de hele talk door zijn woorden aan de schematische weergave op het papier. Daardoor hoeft het publiek weinig moeite te doen om de gehoorde woorden te koppelen aan het getoonde beeld en kan de informatie goed worden verwerkt in het werkgeheugen. Dat zijn talk maar twee

technieken bevat, zegt niets over de passages waaraan die technieken zijn verbonden. Zo omvatten de twee technieken die Sinek inzet bijna de gehele talk, terwijl de tien technieken die Tony Robbins gebruikt in een veel kleiner deel van zijn talk worden ingezet. In bijlage 1 zijn alle talks te zien met daarin in rode kleur aangegeven welke passages zijn voorzien van een code. Bijlage 2 bevat alle talks in hun analysemodel. 70% van alle tekst uit de veertien talks waarin visuele retentietechnieken zijn gevonden, is gecodeerd als visuele techniek. Als dat percentage wordt berekend over alle talks uit het corpus (dus ook over de twee talks waarin geen visuele retentietechnieken voorkwamen), dan is dat 61%.

7.2.2 Niet relevante afbeeldingen

In het hele corpus komt het vijf keer voor dat een spreker een afbeelding toont die niet relevant is voor zijn of haar verhaal. Die passages komen uit de talk van Brené Brown, *The power of vulnerability*. Een afbeelding is als niet relevant bestempeld als het getoonde beeld meer een sfeerplaatje op de achtergrond is dan een ondersteunend beeld. Zo verschenen er tijdens de talk van Brown onder andere foto's in beeld van een kers, een foto van grassprietten en een foto van lampjes in hartjesvorm. Over die plaatjes heen verscheen de tekst in beeld die wel relevant was voor de talk. Bij de meeste foto's was het ook nog het geval dat de foto zelf eerst in beeld kwam en een paar zinnen later pas de tekst waar het op dat moment om ging. Harp en Mayer (1998) en Mayer (2009) toonden aan dat niet relevante informatie een goede verwerking van de relevante informatie in de weg kan zitten. Door de *active-processing assumption*, kunnen we aannemen dat de mens actief aan de slag gaat met verkregen informatie en dat de niet relevante informatie door de beperkte opslagruimte in het werkgeheugen de plaats in kan nemen van relevante informatie.

7.2.3 Combinatie van video en woord

De talk van David Gallo, *Underwater astonishments*, is de enige talk waarin de codes *Projectie – videomateriaal* en *Projectie – visuele tekst, woord en beeld* samen aan één passage worden gekoppeld. Dat is in die talk zes keer het geval. Tijdens de video omschrijft Gallo wat er in beeld te zien is, wat wordt onderstreept door de bijbehorende zinnen die een voor een in beeld verschijnen. Net als bij de combinatie *Projectie – afbeelding, woord en beeld* en *Projectie – visuele tekst, woord en beeld* zou ook de combinatie van videomateriaal en geschreven en geprojecteerde tekst een *overload* aan

informatie kunnen opleveren, omdat het videomateriaal in het visuele kanaal ‘concurrentie’ krijgt van de visuele tekst. Het weglaten van de tekst op de video was met het oog op de hoeveelheid informatie die onthouden moest worden slimmer geweest.

7.2.4 Veel tekst tegenover weinig tekst

In twaalf van de zestien talks komt de code *Projectie – visuele tekst* voor. De hoeveelheid tekst die wordt geprojecteerd op de slides verschilt per talk. Dan Gilbert is met zijn talk *The surprising science of happiness* de enige die slides in zijn presentatie heeft opgenomen die soms meer dan veertig woorden bevatten. De andere sprekers gebruiken veelal korte zinnen in telegramstijl, of losse woorden. Adviezen die presentatieadviseurs vaak geven over de hoeveelheid woorden op een PowerPointslide zijn gevarieerd, maar de meeste adviseurs geven de tip om niet meer dan 36 woorden per slide te gebruiken. Atkinson en Mayer (2004) beweren dat 36 woorden per slide al teveel zijn en ook Alley en Neeley zeggen dat woorden op slides zouden moeten worden beperkt tot ongeveer twee regels. Opsommingen moeten wat hun betreft niet meer dan drie of vier items bevatten (2005). Miller beweerde in 1956 dat het werkgeheugen zeven items tegelijk kan onthouden. Wanneer informatie wordt gegroepeerd kunnen er grotere hoeveelheden worden onthouden, omdat één groep dan als één item in het werkgeheugen komt. Daarmee wordt nog maar eens duidelijk dat het werkgeheugen een beperkte opslagruimte heeft en dat teveel informatie op een slide voor een *overload* aan informatie kan zorgen. In Gilberts talk is dat op sommige momenten het geval. Bijvoorbeeld bij deze twee slides:

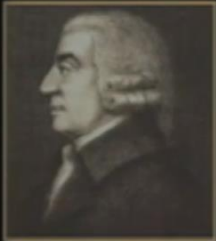
Figuur 12, een slide uit de talk van Dan Gilbert met veel tekst

The Unanticipated Joy of Being Totally Stuck

- Students make two photos and choose one to keep and one to relinquish.
- The decision is either...
 - Reversible (4 days to swap)
 - Irreversible (can never swap)
- Students either
 - Predict satisfaction 3 days later or
 - Go away and report satisfaction 3 days later -- and then again 6 days after that.

Figuur 13, een slide uit de talk van Dan Gilbert met veel tekst

Turgid Truth



"The great source of both the misery and disorders of human life, seems to arise from over-rating the difference between one permanent situation and another... Some of those situations may, no doubt, deserve to be preferred to others; but none of them can deserve to be pursued with that passionate ardour which drives us to violate the rules either of prudence or of justice; or to corrupt the future tranquillity of our minds, either by shame from the remembrance of our own folly, or by remorse from the horror of our own injustice."

Adam Smith,
The Theory of Moral Sentiments, 1759

HOOFDSTUK 8 CONCLUSIE EN AANBEVELINGEN

In deze scriptie is een onderzoek beschreven naar visuele retentietechnieken in TEDtalks. Aangezien er nog weinig onderzoek gedaan is naar visuele retentietechnieken in toespraken en speeches, is er nog geen duidelijke analysemethode beschikbaar om die technieken op te sporen en te duiden. In dit onderzoek heb ik gepoogd zo'n methode te ontwerpen en te gebruiken bij het analyseren van visuele retentietechnieken in TEDtalks. De onderzoeksvraag die aan het begin van dit onderzoek is opgesteld luidt:

Wat is een geschikte methode om het gebruik van visuele retentietechnieken in een TEDtalk te detecteren en op welke manier en in welke mate maken succesvolle TED-sprekers gebruik van die retentietechnieken in hun presentatie?

In dit hoofdstuk wordt er een tweeledig antwoord op deze vraag geformuleerd. Een antwoord dat uiteenzet welke analysemethode er gebruikt is in dit onderzoek en waarom die geschikt is, wordt gegeven in paragraaf 8.1, en een antwoord waarin naar voren komt welke visuele retentietechnieken er gebruikt zijn door TEDsprekers en op welke manier, wordt beschreven in paragraaf 8.2. Paragraaf 8.3 besluit dit hoofdstuk met aanbevelingen voor verder onderzoek.

8.1 Een analysemethode in ontwikkeling

Uit eerder onderzoek van Besterveld (2012) en Helderma (2013) is gebleken dat er zowel in Nederlandse als in Engelse adviesliteratuur verschillende retentietechnieken worden geadviseerd voor het houden van een toespraak. Een aantal daarvan zijn gericht op de visuele kant van een toespraak. De technieken die te maken hebben met het doen en laten van de spreker zelf, zijn voor een analyse in dit onderzoek buiten beschouwing gelaten. Ingezoomd is op de processen in het geheugen die reageren op vertoond beeld of meegebrachte objecten. Het geheugen verwerkt tekstdia's beter dan dia's met afbeeldingen (Blokzijl & Andeweg 2006) en de volgorde waarin gesproken woord en geprojecteerde tekst en/of afbeeldingen voorkomen maakt ook verschil bij het verwerken van de informatie in het geheugen (Mayer 2009). Daarom zijn die variaties onderscheiden in het opgestelde codeboek. Aan de hand van dat codeboek zijn de

gebruikte visuele technieken in de TEDtalks geanalyseerd. Elke passage tekst die gepaard ging met het vertonen van beeld werd gecodeerd in het programma *Atlas.ti*, waardoor er een duidelijk overzicht ontstond van het gebruikte aantal technieken in de zestien TEDtalks die geanalyseerd waren. Die kwantitatieve gegevens zijn vervolgens kwalitatief geduid. Met deze analysemethode is een geschikte manier gevonden om visuele technieken in toespraken op te sporen. Door middel van de omschrijvingen in het codeboek konden de technieken goed worden aangewezen in de tekst en overzichtelijk worden weergegeven. Doordat het codeboek gedetailleerd en uitgebreid is, is goed te onderscheiden van welke techniek er sprake is. Het opsporen van de technieken is een arbeidsintensieve klus, maar brengt precies in beeld wat er gevonden moet worden: visuele retentietechnieken in TEDtalks. Ook de mate van betrouwbaarheid is meer dan voldoende voor een eerste analyse met de ontwikkelde methode. De kappa viel hoog uit en de analyse van de tweede beoordelaar kan daarmee betrouwbaar genoemd worden (zie voor de berekening van de kappa bijlage 3).

Ruimte voor verbetering van de analysemethode is er wel. Hoewel de analyse aan de hand van het codeboek goed verlopen is, zijn er verschillende aandachtspunten naast het codeboek, genoemd in paragraaf 5.4 (bijvoorbeeld de objectiviteit van het scoren van niet relevante afbeeldingen en de lengte van gecodeerde passages), waar verder onderzoek naar moet worden verricht. Het codeboek an sich biedt een goede analysemethode, maar de kanttekeningen daarnaast zouden beter in het codeboek zelf moeten kunnen worden verwerkt, waardoor de resultaten uitgebreider en nog meer betrouwbaar worden.

8.2 Visuele retentietechnieken in TEDtalks

Het codeboek bestaat uit vijf hoofdcodes: *Projectie – afbeelding*, *Projectie – visuele tekst*, *Projectie – schematische weergave*, *Projectie – videomateriaal* en *Object*. Omdat die technieken elk zijn onderverdeeld in drie meer gedetailleerde groepen, is de lijst met codes waaruit gekozen kon worden voor de analyse, een uitgebreide. Dat lang niet elke code voorkomt in de TEDtalks bleek, toen er vijf codes op nul voorkomens bleven steken. Dat waren voornamelijk codes met de specificatie *beeld na woord*. Sprekers spreken dus niet vaak over een onderwerp dat daarna pas in beeld wordt gebracht. Van de andere tien codes waren *Projectie – afbeelding* en *Projectie – visuele tekst* overduidelijk het meest voorkomend en wel in combinatie met de toevoeging *woord en*

beeld. Daarmee lijken de meeste sprekers te handelen in lijn met de *Multimedia Theory of Learning* van Mayer (2009), waaruit blijkt dat het geheugen meer informatie opslaat als gesproken woorden gecombineerd worden met getoond beeld of getoonde tekst. Dat betekent dat veel sprekers, bewust of onbewust, aansturen op een zo goed mogelijke opname van de informatie in het geheugen van de toehoorders.

Dat getoond beeld en die getoonde tekst worden regelmatig gecombineerd op een slide. Naast de woorden die de spreker spreekt, zijn de woorden ook terug te vinden op de slide, begeleid door een afbeelding. Dat is juist afgeraden door Mayer (2009:125), die beweert dat én beeld én woord op een slide voor een *overload* aan informatie kan zorgen. Het werkgeheugen zou dan meer tijd nodig hebben om de informatie te verwerken. Hoewel sprekers dus veel beeld gebruiken en daarmee de opname van informatie in het geheugen bevorderen, gaan ze daar op sommige punten te ver in door, door veel informatie zowel te projecteren als beeld als tekst.

Objecten, ook wel *visual props* genoemd, komen weinig voor in het TEDcorpus. In twee van de zestien talks heeft een spreker een voorwerp getoond om het verhaal kracht bij te zetten. Er is nog te weinig onderzoek gedaan naar deze visuele techniek om gefundeerde uitspraken te doen over het voorkomen van *props* in dit corpus.

70% van alle tekst uit het corpus is voorzien van een code en bevat daarmee een visuele techniek. Er wordt dus in hoge mate gebruikgemaakt van visuele technieken die bewerkstelligen dat informatie in het langetermijngeheugen wordt opgenomen. Typerend voor het gebruik van die technieken in een toespraak is, dat ze veelal bestaan uit een slide met een afbeelding en/of met geschreven tekst. Die combinatie van woord en beeld kon worden verwacht naar aanleiding van de *Multimedia Learning Theory* van Mayer en andere onderzoeken van onder andere Paivio (1986), Moreno (2002) en Blokzijl & Andeweg (2006), waaruit blijkt dat woord en beeld bevorderend werken voor het verwerken van informatie in het geheugen. De theorie van Mayer is daarmee een goede en uitgebreide theorie gebleken die in veel opzichten toepasbaar is op het corpus van TEDtalks. De verschillende kanalen waar hij over spreekt worden in de talks aangesproken door het beeld en de gesproken tekst. Op basis van het *redundancy principle* dat Mayer behandelt in zijn theorie, kan gesteld worden dat er bij de sprekers van TEDtalks nog ruimte voor verbetering is als het gaat om de manier van het presenteren van informatie, waarbij ze een *overload* aan informatie zouden moeten beperken.

8.3 Verder onderzoek

In dit onderzoek is het visuele terrein van een toespraak verkend, dat wil zeggen, de niet mentale visualisatie. Mentale visualisatie, waarbij er een beeld wordt geschetst dat in het geheugen vorm kan krijgen is in dit onderzoek niet meegenomen, hoewel dat ook visualisatie genoemd zou kunnen worden. In dit onderzoek betrof het begrip *visualisatie* de visualisatie die met het blote oog kon worden waargenomen. Het blijkt dat TEDsprekers hun speech in veel gevallen ondersteunen met beeldmateriaal dat de verwerking van de informatie in het geheugen bevordert. Hoewel de ene techniek meer bevorderend werkt voor die verwerking dan de andere techniek, zorgt visueel materiaal er in een toespraak voor dat het publiek de informatie die overgebracht wordt beter onthoudt dan wanneer er geen visueel materiaal gebruikt wordt. Er zijn nog geen vergelijkbare onderzoeken gedaan naar visuele retentietechnieken in toespraken en dus is een vergelijking met andere corpora op dit moment nog niet mogelijk. Hoewel de verwachting wellicht is dat er in TEDtalks relatief veel gebruik wordt gemaakt van visuele ondersteuning in vergelijking met andere genres van toespraken, zouden in de toekomst andere corpora geanalyseerd moeten worden op het gebruik van visuele retentietechnieken aan de hand van het in dit onderzoek opgezette codeboek, om beter onderbouwde conclusies te kunnen trekken. De 70% tekst die in dit corpus gecodeerd is als visuele techniek, kan dan vergeleken worden met andere percentages uit andere corpora, waardoor beter zal kunnen worden vastgesteld of de 70% uit dit corpus uitzonderlijk is of niet.

Verder is er nog weinig bekend over welk effect het tonen van een object heeft voor de verwerking van informatie in het geheugen. Vanuit de *Multimedia Learning Theory* zou kunnen worden beweerd dat over het object praten en het daadwerkelijk laten zien van dat object, eenzelfde combinatie is als het vertonen van beeld bij gesproken woord. Het meebrengen en tonen van een object zou dan bevorderend kunnen werken voor de opname van de informatie in het geheugen. Toch is een meer specifiek onderzoek naar het meebrengen van objecten in een presentatie nodig om verdere uitspraken te kunnen doen over het gebruik van *props* in toespraken. Zo zouden er experimenten kunnen worden gedaan met een publiek dat na verschillende toespraken wordt gevraagd naar getoonde voorwerpen, om zo te onderzoeken wat er in het geheugen blijft hangen over het tonen van objecten. Ook het gebruik van een levende *prop*, een persoon die het podium op komt als voorbeeld voor een in het verhaal

geschetst iemand, of de soms vreemde en niet passende kleding van een spreker is in dit onderzoek niet aan de orde gekomen en zou in verder onderzoek kunnen worden meegenomen bij een analyse van visualisatie in toespraken.

De in paragraaf 5.4 genoemde punten die naast het codeboek van belang zijn voor de analyse zouden ook verder moeten worden onderzocht. In dit onderzoek is beweerd dat het niet uitmaakt dat een beeld tien seconden nadat de spreker erover spreekt, verschijnt, op basis van de *Multimedia Learning Theory*, maar het is te kort door de bocht om alleen op basis van die theorie te stellen dat er in een analyse van TEDtalks geen rekening hoeft te worden gehouden met een verschil van 10 seconden in het tonen van een beeld en het erover spreken. Dit punt en de andere punten van paragraaf 5.4 zouden uitgebreider moeten worden bekeken en wellicht worden geïntegreerd in het codeboek, waardoor een analyse van visualisatietechnieken nog nauwkeuriger kan worden uitgevoerd.

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http://www.nature.com/nrn/journal/v4/n10/fig_tab/nrn1201_F5.html (geraadpleegd op 13 september 2015)

- Propsadviezen van Andrew Dlugan

<http://sixminutes.dlugan.com/speech-props/> (geraadpleegd op 24 juni 2015)

Bijlage 1: transcripties TEDtalks

In deze bijlage is alle tekst te vinden die in de zestien geanalyseerde TEDtalks is uitgesproken. In het rood is de tekst aangegeven die gecombineerd werd met een visuele techniek.

Talk 1, Ken Robinson – How school kills creativity

0:11

Good morning. How are you? (Laughter) It's been great, hasn't it? I've been blown away by the whole thing. In fact, I'm leaving. (Laughter) There have been three themes running through the conference which are relevant to what I want to talk about. One is the extraordinary evidence of human creativity in all of the presentations that we've had and in all of the people here. Just the variety of it and the range of it. The second is that it's put us in a place where we have no idea what's going to happen, in terms of the future. No idea how this may play out.

0:56

I have an interest in education. Actually, what I find is everybody has an interest in education. Don't you? I find this very interesting. If you're at a dinner party, and you say you work in education -- Actually, you're not often at dinner parties, frankly. (Laughter) If you work in education, you're not asked. (Laughter) And you're never asked back, curiously. That's strange to me. But if you are, and you say to somebody, you know, they say, "What do you do?" and you say you work in education, you can see the blood run from their face. They're like, "Oh my God," you know, "Why me?" (Laughter) "My one night out all week." (Laughter) But if you ask about their education, they pin you to the wall. Because it's one of those things that goes deep with people, am I right? Like religion, and money and other things. So I have a big interest in education, and I think we all do. We have a huge vested interest in it, partly because it's education that's meant to take us into this future that we can't grasp. If you think of it, children starting school this year will be retiring in 2065. Nobody has a clue, despite all the expertise that's been on parade for the past four days, what the world will look like in five years' time. And yet we're meant to be educating them for it. So the unpredictability, I think, is extraordinary.

2:23

And the third part of this is that we've all agreed, nonetheless, on the really extraordinary capacities that children have -- their capacities for innovation. I mean, Sirena last night was a marvel, wasn't she? Just seeing what she could do. And she's exceptional, but I think she's not, so to speak, exceptional in the whole of childhood. What you have there is a person of extraordinary dedication who found a talent. And my contention is, all kids have tremendous talents. And we squander them, pretty ruthlessly. So I want to talk about education and I want to talk about creativity. My contention is that creativity now is as important in education as literacy, and we should treat it with the same status. (Applause) Thank you. (Applause) That was it, by the way. Thank you very much. (Laughter) So, 15 minutes left. (Laughter) Well, I was born... no. (Laughter)

3:30

I heard a great story recently -- I love telling it -- of a little girl who was in a drawing lesson. She was six, and she was at the back, drawing, and the teacher said this girl hardly ever paid attention, and in this drawing lesson, she did. The teacher was fascinated. She went over to her, and she said, "What are you drawing?" And the girl said, "I'm drawing a picture of God." And the teacher said, "But nobody knows what God looks like." And the girl said, "They will, in a minute." (Laughter)

4:07

When my son was four in England -- Actually, he was four everywhere, to be honest. (Laughter) If we're being strict about it, wherever he went, he was four that year. He was in the Nativity play. Do you remember the story? (Laughter) No, it was big, it was a big story. Mel Gibson did the sequel, you may have seen it. (Laughter) "Nativity II." But James got the part of Joseph, which we were thrilled about. We considered this to be one of the lead parts. We had the place crammed full of agents in T-shirts: "James Robinson IS Joseph!" (Laughter) He didn't have to speak, but you know the bit where the three kings come in? They come in bearing gifts, gold, frankincense and myrrh. This really happened. We were sitting there and I think they just went out of sequence, because we talked to the little boy afterward and we said, "You OK with that?" And he said, "Yeah, why? Was that wrong?" They just switched. The three boys came in, four-year-olds with tea towels on their heads, and they put these boxes down, and the first boy said, "I bring you gold." And the second boy said, "I bring you myrrh." And the third boy said, "Frank sent this." (Laughter)

5:21

What these things have in common is that kids will take a chance. If they don't know, they'll have a go. Am I right? They're not frightened of being wrong. I don't mean to say that being wrong is the same thing as being creative. What we do know is, if you're not prepared to be wrong, you'll never come up with anything original -- if you're not prepared to be wrong. And by the time they get to be adults, most kids have lost that capacity. They have become frightened of being wrong. And we run our companies like this. We stigmatize mistakes. And we're now running national education systems where mistakes are the worst thing you can make. And the result is that we are educating people out of their creative capacities. Picasso once said this, he said that all children are born artists. The problem is to remain an artist as we grow up. I believe this passionately, that we don't grow into creativity, we grow out of it. Or rather, we get educated out of it. So why is this?

6:21

I lived in Stratford-on-Avon until about five years ago. In fact, we moved from Stratford to Los Angeles. So you can imagine what a seamless transition that was. (Laughter) Actually, we lived in a place called Snitterfield, just outside Stratford, which is where Shakespeare's father was born. Are you struck by a new thought? I was. You don't think of Shakespeare having a father, do you? Do you? Because you don't think of Shakespeare being a child, do you? Shakespeare being seven? I never thought of it. I mean, he was seven at some point. He was in somebody's English class, wasn't he? (Laughter) How annoying would that be? (Laughter) "Must try harder." (Laughter) Being sent to bed by his dad, you know, to Shakespeare, "Go to bed, now! And put the pencil down." (Laughter) "And stop speaking like that." (Laughter) "It's confusing everybody." (Laughter)

7:34

Anyway, we moved from Stratford to Los Angeles, and I just want to say a word about the transition. My son didn't want to come. I've got two kids; he's 21 now, my daughter's 16. He didn't want to come to Los Angeles. He loved it, but he had a girlfriend in England. This was the love of his life, Sarah. He'd known her for a month. (Laughter) Mind you, they'd had their fourth anniversary, because it's a long time when you're 16. He was really upset on the plane, he said, "I'll never find another girl like Sarah." And we were rather pleased about that, frankly -- (Laughter) Because she was the main reason we were leaving the country. (Laughter)

8:27

But something strikes you when you move to America and travel around the world: Every education system on Earth has the same hierarchy of subjects. Every one. Doesn't matter where you go. You'd think it would be otherwise, but it isn't. At the top are mathematics and languages, then the humanities, and at the bottom are the arts. Everywhere on Earth. And in pretty much every system too, there's a hierarchy within the arts. Art and music are normally given a higher status in schools than drama and dance. There isn't an education system on the planet that teaches dance everyday to children the way we teach them mathematics. Why? Why not? I think this is rather important. I think math is very important, but so is dance. Children dance all the time if they're allowed to, we all do. We all have bodies, don't we? Did I miss a meeting? (Laughter) Truthfully, what happens is, as children grow up, we start to educate them progressively from the waist up. And then we focus on their heads. And slightly to one side.

9:22

If you were to visit education, as an alien, and say "What's it for, public education?" I think you'd have to conclude, if you look at the output, who really succeeds by this, who does everything that they should, who gets all the brownie points, who are the winners - - I think you'd have to conclude the whole purpose of public education throughout the world is to produce university professors. Isn't it? They're the people who come out the top. And I used to be one, so there. (Laughter) And I like university professors, but you know, we shouldn't hold them up as the high-water mark of all human achievement. They're just a form of life, another form of life. But they're rather curious, and I say this out of affection for them. There's something curious about professors in my experience - - not all of them, but typically, they live in their heads. They live up there, and slightly to one side. They're disembodied, you know, in a kind of literal way. They look upon their body as a form of transport for their heads. (Laughter) Don't they? It's a way of getting their head to meetings. (Laughter) If you want real evidence of out-of-body experiences, get yourself along to a residential conference of senior academics, and pop into the discotheque on the final night. (Laughter) And there, you will see it. Grown men and women writhing uncontrollably, off the beat. (Laughter) Waiting until it ends so they can go home and write a paper about it. (Laughter)

11:02

Our education system is predicated on the idea of academic ability. And there's a reason. Around the world, there were no public systems of education, really, before the 19th century. They all came into being to meet the needs of industrialism. So the hierarchy is rooted on two ideas. Number one, that the most useful subjects for work are at the top. So you were probably steered benignly away from things at school when you were a kid, things you liked, on the grounds that you would never get a job doing that. Is that right? Don't do music, you're not going to be a musician; don't do art, you won't

be an artist. Benign advice -- now, profoundly mistaken. The whole world is engulfed in a revolution. And the second is academic ability, which has really come to dominate our view of intelligence, because the universities designed the system in their image. If you think of it, the whole system of public education around the world is a protracted process of university entrance. And the consequence is that many highly-talented, brilliant, creative people think they're not, because the thing they were good at at school wasn't valued, or was actually stigmatized. And I think we can't afford to go on that way.

12:06

In the next 30 years, according to UNESCO, more people worldwide will be graduating through education than since the beginning of history. More people, and it's the combination of all the things we've talked about -- technology and its transformation effect on work, and demography and the huge explosion in population. Suddenly, degrees aren't worth anything. Isn't that true? When I was a student, if you had a degree, you had a job. If you didn't have a job, it's because you didn't want one. And I didn't want one, frankly. (Laughter) But now kids with degrees are often heading home to carry on playing video games, because you need an MA where the previous job required a BA, and now you need a PhD for the other. It's a process of academic inflation. And it indicates the whole structure of education is shifting beneath our feet. We need to radically rethink our view of intelligence.

12:56

We know three things about intelligence. One, it's diverse. We think about the world in all the ways that we experience it. We think visually, we think in sound, we think kinesthetically. We think in abstract terms, we think in movement. Secondly, intelligence is dynamic. If you look at the interactions of a human brain, as we heard yesterday from a number of presentations, intelligence is wonderfully interactive. The brain isn't divided into compartments. In fact, creativity -- which I define as the process of having original ideas that have value -- more often than not comes about through the interaction of different disciplinary ways of seeing things.

13:33

By the way, there's a shaft of nerves that joins the two halves of the brain called the corpus callosum. It's thicker in women. Following off from Helen yesterday, this is probably why women are better at multi-tasking. Because you are, aren't you? There's a raft of research, but I know it from my personal life. If my wife is cooking a meal at home -- which is not often, thankfully. (Laughter) No, she's good at some things, but if she's cooking, she's dealing with people on the phone, she's talking to the kids, she's painting the ceiling, she's doing open-heart surgery over here. If I'm cooking, the door is shut, the kids are out, the phone's on the hook, if she comes in I get annoyed. I say, "Terry, please, I'm trying to fry an egg in here." (Laughter) "Give me a break." (Laughter) Actually, do you know that old philosophical thing, if a tree falls in a forest and nobody hears it, did it happen? Remember that old chestnut? I saw a great t-shirt recently, which said, "If a man speaks his mind in a forest, and no woman hears him, is he still wrong?" (Laughter)

14:50

And the third thing about intelligence is, it's distinct. I'm doing a new book at the moment called "Epiphany," which is based on a series of interviews with people about how they discovered their talent. I'm fascinated by how people got to be there. It's really

prompted by a conversation I had with a wonderful woman who maybe most people have never heard of, Gillian Lynne. Have you heard of her? Some have. She's a choreographer, and everybody knows her work. She did "Cats" and "Phantom of the Opera." She's wonderful. I used to be on the board of The Royal Ballet, as you can see. Anyway, Gillian and I had lunch one day and I said, "How did you get to be a dancer?" It was interesting. When she was at school, she was really hopeless. And the school, in the '30s, wrote to her parents and said, "We think Gillian has a learning disorder." She couldn't concentrate; she was fidgeting. I think now they'd say she had ADHD. Wouldn't you? But this was the 1930s, and ADHD hadn't been invented at this point. It wasn't an available condition. (Laughter) People weren't aware they could have that. (Laughter) Anyway, she went to see this specialist.

15:57

So, this oak-paneled room, and she was there with her mother, and she was led and sat on this chair at the end, and she sat on her hands for 20 minutes while this man talked to her mother about the problems Gillian was having at school. Because she was disturbing people; her homework was always late; and so on, little kid of eight. In the end, the doctor went and sat next to Gillian, and said, "I've listened to all these things your mother's told me, I need to speak to her privately. Wait here. We'll be back; we won't be very long," and they went and left her. But as they went out of the room, he turned on the radio that was sitting on his desk. And when they got out, he said to her mother, "Just stand and watch her." And the minute they left the room, she was on her feet, moving to the music. And they watched for a few minutes and he turned to her mother and said, "Mrs. Lynne, Gillian isn't sick; she's a dancer. Take her to a dance school."

16:50

I said, "What happened?" She said, "She did. I can't tell you how wonderful it was. We walked in this room and it was full of people like me. People who couldn't sit still. People who had to move to think." Who had to move to think. They did ballet, they did tap, jazz; they did modern; they did contemporary. She was eventually auditioned for the Royal Ballet School; she became a soloist; she had a wonderful career at the Royal Ballet. She eventually graduated from the Royal Ballet School, founded the Gillian Lynne Dance Company, met Andrew Lloyd Webber. She's been responsible for some of the most successful musical theater productions in history, she's given pleasure to millions, and she's a multi-millionaire. Somebody else might have put her on medication and told her to calm down. (Applause)

17:39

What I think it comes to is this: Al Gore spoke the other night about ecology and the revolution that was triggered by Rachel Carson. I believe our only hope for the future is to adopt a new conception of human ecology, one in which we start to reconstitute our conception of the richness of human capacity. Our education system has mined our minds in the way that we strip-mine the earth: for a particular commodity. And for the future, it won't serve us. We have to rethink the fundamental principles on which we're educating our children. There was a wonderful quote by Jonas Salk, who said, "If all the insects were to disappear from the Earth, within 50 years all life on Earth would end. If all human beings disappeared from the Earth, within 50 years all forms of life would flourish." And he's right.

18:33

What TED celebrates is the gift of the human imagination. We have to be careful now that we use this gift wisely and that we avert some of the scenarios that we've talked about. And the only way we'll do it is by seeing our creative capacities for the richness they are and seeing our children for the hope that they are. And our task is to educate their whole being, so they can face this future. By the way -- we may not see this future, but they will. And our job is to help them make something of it. Thank you very much. (Applause)

Talk 2, Amy Cuddy – Your body language shapes who you are

1518 van 3674 woorden = 41 % gecodeerde passages

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So I want to start by offering you a free no-tech life hack, and all it requires of you is this: that you change your posture for two minutes. But before I give it away, I want to ask you to right now do a little audit of your body and what you're doing with your body. So how many of you are sort of making yourselves smaller? Maybe you're hunching, crossing your legs, maybe wrapping your ankles. Sometimes we hold onto our arms like this. Sometimes we spread out. (Laughter) I see you. (Laughter) So I want you to pay attention to what you're doing right now. We're going to come back to that in a few minutes, and I'm hoping that if you learn to tweak this a little bit, it could significantly change the way your life unfolds.

0:58

So, we're really fascinated with body language, and we're particularly interested in other people's body language. **You know, we're interested in, like, you know — (Laughter) — an awkward interaction, or a smile, or a contemptuous glance, or maybe a very awkward wink, or maybe even something like a handshake.**

1:22

Narrator: Here they are arriving at Number 10. This lucky policeman gets to shake hands with the President of the United States. Here comes the Prime Minister -- No. (Laughter) (Applause) (Laughter) (Applause)

1:38

Amy Cuddy: So a handshake, or the lack of a handshake, can have us talking for weeks and weeks and weeks. Even the BBC and The New York Times. So obviously when we think about nonverbal behavior, or body language -- but we call it nonverbals as social scientists -- it's language, so we think about communication. When we think about communication, we think about interactions. So what is your body language communicating to me? What's mine communicating to you?

2:04

And there's a lot of reason to believe that this is a valid way to look at this. So social scientists have spent a lot of time looking at the effects of our body language, or other people's body language, on judgments. And we make sweeping judgments and inferences from body language. And those judgments can predict really meaningful life outcomes like who we hire or promote, who we ask out on a date. For example, Nalini Ambady, a researcher at Tufts University, shows that when people watch 30-second soundless clips of real physician-patient interactions, their judgments of the physician's niceness predict whether or not that physician will be sued. So it doesn't have to do so much with whether or not that physician was incompetent, but do we like that person

and how they interacted? Even more dramatic, Alex Todorov at Princeton has shown us that judgments of political candidates' faces in just one second predict 70 percent of U.S. Senate and gubernatorial race outcomes, and even, let's go digital, emoticons used well in online negotiations can lead to you claim more value from that negotiation. If you use them poorly, bad idea. Right? So when we think of nonverbals, we think of how we judge others, how they judge us and what the outcomes are. We tend to forget, though, the other audience

3:28

that's influenced by our nonverbals, and that's ourselves. We are also influenced by our nonverbals, our thoughts and our feelings and our physiology. So what nonverbals am I talking about? I'm a social psychologist. I study prejudice, and I teach at a competitive business school, so it was inevitable that I would become interested in power dynamics. I became especially interested in nonverbal expressions of power and dominance.

3:56

And what are nonverbal expressions of power and dominance? Well, this is what they are. So in the animal kingdom, they are about expanding. So you make yourself big, you stretch out, you take up space, you're basically opening up. It's about opening up. And this is true across the animal kingdom. It's not just limited to primates. And humans do the same thing. (Laughter) So they do this both when they have power sort of chronically, and also when they're feeling powerful in the moment. And this one is especially interesting because it really shows us how universal and old these expressions of power are. This expression, which is known as pride, Jessica Tracy has studied. She shows that people who are born with sight and people who are congenitally blind do this when they win at a physical competition. So when they cross the finish line and they've won, it doesn't matter if they've never seen anyone do it. They do this. So the arms up in the V, the chin is slightly lifted. What do we do when we feel powerless? We do exactly the opposite. We close up. We wrap ourselves up. We make ourselves small. We don't want to bump into the person next to us. So again, both animals and humans do the same thing. And this is what happens when you put together high and low power. So what we tend to do when it comes to power is that we complement the other's nonverbals. So if someone is being really powerful with us, we tend to make ourselves smaller. We don't mirror them. We do the opposite of them.

5:24

So I'm watching this behavior in the classroom, and what do I notice? I notice that MBA students really exhibit the full range of power nonverbals. So you have people who are like caricatures of alphas, really coming into the room, they get right into the middle of the room before class even starts, like they really want to occupy space. When they sit down, they're sort of spread out. They raise their hands like this. You have other people who are virtually collapsing when they come in. As soon they come in, you see it. You see it on their faces and their bodies, and they sit in their chair and they make themselves tiny, and they go like this when they raise their hand. I notice a couple of things about this. One, you're not going to be surprised. It seems to be related to gender. So women are much more likely to do this kind of thing than men. Women feel chronically less powerful than men, so this is not surprising. But the other thing I noticed is that it also seemed to be related to the extent to which the students were participating, and how well they were participating. And this is really important in the MBA classroom, because participation counts for half the grade.

6:33

So business schools have been struggling with this gender grade gap. You get these equally qualified women and men coming in and then you get these differences in grades, and it seems to be partly attributable to participation. So I started to wonder, you know, okay, so you have these people coming in like this, and they're participating. Is it possible that we could get people to fake it and would it lead them to participate more?

6:57

So my main collaborator Dana Carney, who's at Berkeley, and I really wanted to know, can you fake it till you make it? Like, can you do this just for a little while and actually experience a behavioral outcome that makes you seem more powerful? **So we know that our nonverbals govern how other people think and feel about us. There's a lot of evidence. But our question really was, do our nonverbals govern how we think and feel about ourselves?**

7:24

There's some evidence that they do. So, for example, we smile when we feel happy, but also, when we're forced to smile by holding a pen in our teeth like this, it makes us feel happy. So it goes both ways. When it comes to power, it also goes both ways. So when you feel powerful, you're more likely to do this, but it's also possible that when you pretend to be powerful, you are more likely to actually feel powerful.

7:57

So the second question really was, you know, **so we know that our minds change our bodies, but is it also true that our bodies change our minds? And when I say minds, in the case of the powerful, what am I talking about? So I'm talking about thoughts and feelings and the sort of physiological things that make up our thoughts** and feelings, and in my case, that's hormones. I look at hormones. So what do the minds of the powerful versus the powerless look like? So powerful people tend to be, not surprisingly, more assertive and more confident, more optimistic. They actually feel they're going to win even at games of chance. They also tend to be able to think more abstractly. So there are a lot of differences. They take more risks. There are a lot of differences between powerful and powerless people. Physiologically, there also are differences on two key hormones: testosterone, which is the dominance hormone, and cortisol, which is the stress hormone. So what we find is that high-power alpha males in primate hierarchies have high testosterone and low cortisol, and powerful and effective leaders also have high testosterone and low cortisol. So what does that mean? When you think about power, people tended to think only about testosterone, because that was about dominance. But really, power is also about how you react to stress. So do you want the high-power leader that's dominant, high on testosterone, but really stress reactive? Probably not, right? You want the person who's powerful and assertive and dominant, but not very stress reactive, the person who's laid back.

9:37

So we know that in primate hierarchies, if an alpha needs to take over, if an individual needs to take over an alpha role sort of suddenly, within a few days, that individual's testosterone has gone up significantly and his cortisol has dropped significantly. So we have this evidence, both that the body can shape the mind, at least at the facial level, and also that role changes can shape the mind. So what happens, okay, you take a role change, what happens if you do that at a really minimal level, like this tiny manipulation, this tiny intervention? "For two minutes," you say, "I want you to stand like this, and it's going to make you feel more powerful."

10:19

So this is what we did. We decided to bring people into the lab and run a little experiment, and these people adopted, for two minutes, either high-power poses or low-power poses, and I'm just going to show you five of the poses, although they took on only two. So here's one. A couple more. This one has been dubbed the "Wonder Woman" by the media. Here are a couple more. So you can be standing or you can be sitting. And here are the low-power poses. So you're folding up, you're making yourself small. This one is very low-power. When you're touching your neck, you're really protecting yourself. So this is what happens. They come in, they spit into a vial, for two minutes, we say, "You need to do this or this." They don't look at pictures of the poses. We don't want to prime them with a concept of power. We want them to be feeling power. So two minutes they do this. We then ask them, "How powerful do you feel?" on a series of items, and then we give them an opportunity to gamble, and then we take another saliva sample. That's it. That's the whole experiment.

11:28

So this is what we find. Risk tolerance, which is the gambling, we find that when you are in the high-power pose condition, 86 percent of you will gamble. When you're in the low-power pose condition, only 60 percent, and that's a whopping significant difference. Here's what we find on testosterone. From their baseline when they come in, high-power people experience about a 20-percent increase, and low-power people experience about a 10-percent decrease. So again, two minutes, and you get these changes. Here's what you get on cortisol. High-power people experience about a 25-percent decrease, and the low-power people experience about a 15-percent increase. So two minutes lead to these hormonal changes that configure your brain to basically be either assertive, confident and comfortable, or really stress-reactive, and feeling sort of shut down. And we've all had the feeling, right? So it seems that our nonverbals do govern how we think and feel about ourselves, so it's not just others, but it's also ourselves. Also, our bodies change our minds.

12:36

But the next question, of course, is, can power posing for a few minutes really change your life in meaningful ways? This is in the lab, it's this little task, it's just a couple of minutes. Where can you actually apply this? Which we cared about, of course. And so we think where you want to use this is evaluative situations, like social threat situations. Where are you being evaluated, either by your friends? For teenagers, it's at the lunchroom table. For some people it's speaking at a school board meeting. It might be giving a pitch or giving a talk like this or doing a job interview. We decided that the one that most people could relate to because most people had been through, was the job interview.

13:21

So we published these findings, and the media are all over it, and they say, Okay, so this is what you do when you go in for the job interview, right? (Laughter) You know, so we were of course horrified, and said, Oh my God, no, that's not what we meant at all. For numerous reasons, no, don't do that. Again, this is not about you talking to other people. It's you talking to yourself. What do you do before you go into a job interview? You do this. You're sitting down. You're looking at your iPhone -- or your Android, not trying to leave anyone out. You're looking at your notes, you're hunching up, making yourself small, when really what you should be doing maybe is this, like, in the bathroom, right? Do that. Find two minutes. So that's what we want to test. Okay? So we bring people

into a lab, and they do either high- or low-power poses again, they go through a very stressful job interview. It's five minutes long. They are being recorded. They're being judged also, and the judges are trained to give no nonverbal feedback, so they look like this. Imagine this is the person interviewing you. So for five minutes, nothing, and this is worse than being heckled. People hate this. It's what Marianne LaFrance calls "standing in social quicksand." So this really spikes your cortisol. So this is the job interview we put them through, because we really wanted to see what happened. We then have these coders look at these tapes, four of them. They're blind to the hypothesis. They're blind to the conditions. They have no idea who's been posing in what pose, and they end up looking at these sets of tapes, and they say, "We want to hire these people," all the high-power posers. "We don't want to hire these people. We also evaluate these people much more positively overall." But what's driving it? It's not about the content of the speech. It's about the presence that they're bringing to the speech. Because we rate them on all these variables related to competence, like, how well-structured is the speech? How good is it? What are their qualifications? No effect on those things. This is what's affected. These kinds of things. People are bringing their true selves, basically. They're bringing themselves. They bring their ideas, but as themselves, with no, you know, residue over them. So this is what's driving the effect, or mediating the effect.

15:35

So when I tell people about this, that our bodies change our minds and our minds can change our behavior, and our behavior can change our outcomes, they say to me, "It feels fake." Right? So I said, fake it till you make it. It's not me. I don't want to get there and then still feel like a fraud. I don't want to feel like an impostor. I don't want to get there only to feel like I'm not supposed to be here. And that really resonated with me, because I want to tell you a little story about being an impostor and feeling like I'm not supposed to be here.

16:06

When I was 19, I was in a really bad car accident. I was thrown out of a car, rolled several times. I was thrown from the car. And I woke up in a head injury rehab ward, and I had been withdrawn from college, and I learned that my I.Q. had dropped by two standard deviations, which was very traumatic. I knew my I.Q. because I had identified with being smart, and I had been called gifted as a child. So I'm taken out of college, I keep trying to go back. They say, "You're not going to finish college. Just, you know, there are other things for you to do, but that's not going to work out for you." So I really struggled with this, and I have to say, having your identity taken from you, your core identity, and for me it was being smart, having that taken from you, there's nothing that leaves you feeling more powerless than that. So I felt entirely powerless. I worked and worked, and I got lucky, and worked, and got lucky, and worked.

17:02

Eventually I graduated from college. It took me four years longer than my peers, and I convinced someone, my angel advisor, Susan Fiske, to take me on, and so I ended up at Princeton, and I was like, I am not supposed to be here. I am an impostor. And the night before my first-year talk, and the first-year talk at Princeton is a 20-minute talk to 20 people. That's it. I was so afraid of being found out the next day that I called her and said, "I'm quitting." She was like, "You are not quitting, because I took a gamble on you, and you're staying. You're going to stay, and this is what you're going to do. You are going to fake it. You're going to do every talk that you ever get asked to do. You're just going to do it and do it and do it, even if you're terrified and just paralyzed and

having an out-of-body experience, until you have this moment where you say, 'Oh my gosh, I'm doing it. Like, I have become this. I am actually doing this.'" So that's what I did. Five years in grad school, a few years, you know, I'm at Northwestern, I moved to Harvard, I'm at Harvard, I'm not really thinking about it anymore, but for a long time I had been thinking, "Not supposed to be here."

18:07

So at the end of my first year at Harvard, a student who had not talked in class the entire semester, who I had said, "Look, you've gotta participate or else you're going to fail," came into my office. I really didn't know her at all. She came in totally defeated, and she said, "I'm not supposed to be here." And that was the moment for me. Because two things happened. One was that I realized, oh my gosh, I don't feel like that anymore. I don't feel that anymore, but she does, and I get that feeling. And the second was, she is supposed to be here! Like, she can fake it, she can become it. So I was like, "Yes, you are! You are supposed to be here! And tomorrow you're going to fake it, you're going to make yourself powerful, and, you know -- (Applause) "And you're going to go into the classroom, and you are going to give the best comment ever." You know? And she gave the best comment ever, And people turned around and were like, oh my God, I didn't even notice her sitting there. (Laughter)

19:14

She comes back to me months later, and I realized that she had not just faked it till she made it, she had actually faked it till she became it. So she had changed. **And so I want to say to you, don't fake it till you make it. Fake it till you become it. Do it enough until you actually become it and internalize.**

19:33

The last thing I'm going to leave you with is this. Tiny tweaks can lead to big changes. So, this is two minutes. Two minutes, two minutes, two minutes. Before you go into the next stressful evaluative situation, for two minutes, try doing this, in the elevator, in a bathroom stall, at your desk behind closed doors. That's what you want to do. Configure your brain to cope the best in that situation. Get your testosterone up. Get your cortisol down. Don't leave that situation feeling like, oh, I didn't show them who I am. Leave that situation feeling like, I really feel like I got to say who I am and show who I am.

20:10

So I want to ask you first, you know, both to try power posing, and also I want to ask you to share the science, because this is simple. I don't have ego involved in this. (Laughter) Give it away. Share it with people, because the people who can use it the most are the ones with no resources and no technology and no status and no power. Give it to them because they can do it in private. They need their bodies, privacy and two minutes, and it can significantly change the outcomes of their life. Thank you. (Applause)

Talk 3, Simon Sinek – How great leaders inspire action

2758 van 3046 woorden = 91% gecodeerde passages

0:11

How do you explain when things don't go as we assume? Or better, how do you explain when others are able to achieve things that seem to defy all of the assumptions? For example: Why is Apple so innovative? Year after year, after year, they're more

innovative than all their competition. And yet, they're just a computer company. They're just like everyone else. They have the same access to the same talent, the same agencies, the same consultants, the same media. Then why is it that they seem to have something different? Why is it that Martin Luther King led the Civil Rights Movement? He wasn't the only man who suffered in pre-civil rights America, and he certainly wasn't the only great orator of the day. Why him? And why is it that the Wright brothers were able to figure out controlled, powered man flight when there were certainly other teams who were better qualified, better funded -- and they didn't achieve powered man flight, and the Wright brothers beat them to it. There's something else at play here.

1:17

About three and a half years ago, I made a discovery. And this discovery profoundly changed my view on how I thought the world worked, and it even profoundly changed the way in which I operate in it. As it turns out, there's a pattern. As it turns out, all the great inspiring leaders and organizations in the world, whether it's Apple or Martin Luther King or the Wright brothers, they all think, act and communicate the exact same way. And it's the complete opposite to everyone else. All I did was codify it, and it's probably the world's simplest idea. **I call it the golden circle.**

2:07

Why? How? What? This little idea explains why some organizations and some leaders are able to inspire where others aren't. Let me define the terms really quickly. Every single person, every single organization on the planet knows what they do, 100 percent. Some know how they do it, whether you call it your differentiated value proposition or your proprietary process or your USP. But very, very few people or organizations know why they do what they do. And by "why" I don't mean "to make a profit." That's a result. It's always a result. By "why," I mean: What's your purpose? What's your cause? What's your belief? Why does your organization exist? Why do you get out of bed in the morning? And why should anyone care? As a result, the way we think, we act, the way we communicate is from the outside in, it's obvious. We go from the clearest thing to the fuzziest thing. But the inspired leaders and the inspired organizations -- regardless of their size, regardless of their industry -- all think, act and communicate from the inside out.

3:13

Let me give you an example. I use Apple because they're easy to understand and everybody gets it. If Apple were like everyone else, a marketing message from them might sound like this: "We make great computers. They're beautifully designed, simple to use and user friendly. Want to buy one?" "Meh." That's how most of us communicate. That's how most marketing and sales are done, that's how we communicate interpersonally. We say what we do, we say how we're different or better and we expect some sort of a behavior, a purchase, a vote, something like that. Here's our new law firm: We have the best lawyers with the biggest clients, we always perform for our clients. Here's our new car: It gets great gas mileage, it has leather seats. Buy our car. But it's uninspiring.

4:00

Here's how Apple actually communicates. "Everything we do, we believe in challenging the status quo. We believe in thinking differently. The way we challenge the status quo is by making our products beautifully designed, simple to use and user friendly. We just happen to make great computers. Want to buy one?" Totally different, right? You're

ready to buy a computer from me. I just reversed the order of the information. What it proves to us is that people don't buy what you do; people buy why you do it.

4:35

This explains why every single person in this room is perfectly comfortable buying a computer from Apple. But we're also perfectly comfortable buying an MP3 player from Apple, or a phone from Apple, or a DVR from Apple. As I said before, Apple's just a computer company. Nothing distinguishes them structurally from any of their competitors. Their competitors are equally qualified to make all of these products. In fact, they tried. A few years ago, Gateway came out with flat-screen TVs. They're eminently qualified to make flat-screen TVs. They've been making flat-screen monitors for years. Nobody bought one. Dell came out with MP3 players and PDAs, and they make great quality products, and they can make perfectly well-designed products -- and nobody bought one. In fact, talking about it now, we can't even imagine buying an MP3 player from Dell. Why would you buy one from a computer company? But we do it every day. People don't buy what you do; they buy why you do it. The goal is not to do business with everybody who needs what you have. The goal is to do business with people who believe what you believe. Here's the best part:

5:48

None of what I'm telling you is my opinion. It's all grounded in the tenets of biology. Not psychology, biology. If you look at a cross-section of the human brain, from the top down, the human brain is actually broken into three major components that correlate perfectly with the golden circle. Our newest brain, our Homo sapien brain, our neocortex, corresponds with the "what" level. The neocortex is responsible for all of our rational and analytical thought and language. The middle two sections make up our limbic brains, and our limbic brains are responsible for all of our feelings, like trust and loyalty. It's also responsible for all human behavior, all decision-making, and it has no capacity for language.

6:35

In other words, when we communicate from the outside in, yes, people can understand vast amounts of complicated information like features and benefits and facts and figures. It just doesn't drive behavior. When we can communicate from the inside out, we're talking directly to the part of the brain that controls behavior, and then we allow people to rationalize it with the tangible things we say and do. This is where gut decisions come from. Sometimes you can give somebody all the facts and figures, and they say, "I know what all the facts and details say, but it just doesn't feel right." Why would we use that verb, it doesn't "feel" right? Because the part of the brain that controls decision-making doesn't control language. The best we can muster up is, "I don't know. It just doesn't feel right" Or sometimes you say you're leading with your heart or soul. I hate to break it to you, those aren't other body parts controlling your behavior. It's all happening here in your limbic brain, the part of the brain that controls decision-making and not language.

7:29

But if you don't know why you do what you do, and people respond to why you do what you do, then how will you ever get people to vote for you, or buy something from you, or, more importantly, be loyal and want to be a part of what it is that you do. The goal is not just to sell to people who need what you have; the goal is to sell to people who believe what you believe. The goal is not just to hire people who need a job; it's to hire

people who believe what you believe. I always say that, you know, if you hire people just because they can do a job, they'll work for your money, but if they believe what you believe, they'll work for you with blood and sweat and tears. Nowhere else is there a better example than with the Wright brothers.

8:14

Most people don't know about Samuel Pierpont Langley. And back in the early 20th century, the pursuit of powered man flight was like the dot com of the day. Everybody was trying it. And Samuel Pierpont Langley had, what we assume, to be the recipe for success. Even now, you ask people, "Why did your product or why did your company fail?" and people always give you the same permutation of the same three things: under-capitalized, the wrong people, bad market conditions. It's always the same three things, so let's explore that. Samuel Pierpont Langley was given 50,000 dollars by the War Department to figure out this flying machine. Money was no problem. He held a seat at Harvard and worked at the Smithsonian and was extremely well-connected; he knew all the big minds of the day. He hired the best minds money could find and the market conditions were fantastic. The New York Times followed him around everywhere, and everyone was rooting for Langley. Then how come we've never heard of Samuel Pierpont Langley?

9:15

A few hundred miles away in Dayton Ohio, Orville and Wilbur Wright, they had none of what we consider to be the recipe for success. They had no money; they paid for their dream with the proceeds from their bicycle shop; not a single person on the Wright brothers' team had a college education, not even Orville or Wilbur; and The New York Times followed them around nowhere. The difference was, Orville and Wilbur were driven by a cause, by a purpose, by a belief. They believed that if they could figure out this flying machine, it'll change the course of the world. Samuel Pierpont Langley was different. He wanted to be rich, and he wanted to be famous. He was in pursuit of the result. He was in pursuit of the riches. And lo and behold, look what happened. The people who believed in the Wright brothers' dream worked with them with blood and sweat and tears. The others just worked for the paycheck. They tell stories of how every time the Wright brothers went out, they would have to take five sets of parts, because that's how many times they would crash before supper.

10:19

And, eventually, on December 17th, 1903, the Wright brothers took flight, and no one was there to even experience it. We found out about it a few days later. And further proof that Langley was motivated by the wrong thing: The day the Wright brothers took flight, he quit. He could have said, "That's an amazing discovery, guys, and I will improve upon your technology," but he didn't. He wasn't first, he didn't get rich, he didn't get famous, so he quit.

10:50

People don't buy what you do; they buy why you do it. If you talk about what you believe, you will attract those who believe what you believe. But why is it important to attract those who believe what you believe? Something called the law of diffusion of innovation, if you don't know the law, you know the terminology. The first 2.5% of our population are our innovators. The next 13.5% of our population are our early adopters. The next 34% are your early majority, your late majority and your laggards. The only

reason these people buy touch-tone phones is because you can't buy rotary phones anymore.

11:28

(Laughter)

11:30

We all sit at various places at various times on this scale, but what the law of diffusion of innovation tells us is that if you want mass-market success or mass-market acceptance of an idea, you cannot have it until you achieve this tipping point between 15 and 18 percent market penetration, and then the system tips. I love asking businesses, "What's your conversion on new business?" They love to tell you, "It's about 10 percent," proudly. Well, you can trip over 10% of the customers. We all have about 10% who just "get it." That's how we describe them, right? That's like that gut feeling, "Oh, they just get it." The problem is: How do you find the ones that get it before doing business versus the ones who don't get it? So it's this here, this little gap that you have to close, as Jeffrey Moore calls it, "Crossing the Chasm" -- because, you see, the early majority will not try something until someone else has tried it first. And these guys, the innovators and the early adopters, they're comfortable making those gut decisions. They're more comfortable making those intuitive decisions that are driven by what they believe about the world and not just what product is available.

12:38

These are the people who stood in line for six hours to buy an iPhone when they first came out, when you could have bought one off the shelf the next week. These are the people who spent 40,000 dollars on flat-screen TVs when they first came out, even though the technology was substandard. And, by the way, they didn't do it because the technology was so great; they did it for themselves. It's because they wanted to be first. People don't buy what you do; they buy why you do it and what you do simply proves what you believe. In fact, people will do the things that prove what they believe. The reason that person bought the iPhone in the first six hours, stood in line for six hours, was because of what they believed about the world, and how they wanted everybody to see them: They were first. People don't buy what you do; they buy why you do it.

13:27

So let me give you a famous example, a famous failure and a famous success of the law of diffusion of innovation. First, the famous failure. It's a commercial example. As we said before, the recipe for success is money and the right people and the right market conditions. You should have success then. Look at TiVo. From the time TiVo came out about eight or nine years ago to this current day, they are the single highest-quality product on the market, hands down, there is no dispute. They were extremely well-funded. Market conditions were fantastic. I mean, we use TiVo as verb. I TiVo stuff on my piece-of-junk Time Warner DVR all the time.

14:05

(Laughter)

14:07

But TiVo's a commercial failure. They've never made money. And when they went IPO, their stock was at about 30 or 40 dollars and then plummeted, and it's never traded above 10. In fact, I don't think it's even traded above six, except for a couple of little spikes. Because you see, when TiVo launched their product, they told us all what they

had. They said, "We have a product that pauses live TV, skips commercials, rewinds live TV and memorizes your viewing habits without you even asking." And the cynical majority said, "We don't believe you. We don't need it. We don't like it. You're scaring us." What if they had said, "If you're the kind of person who likes to have total control over every aspect of your life, boy, do we have a product for you. It pauses live TV, skips commercials, memorizes your viewing habits, etc., etc." People don't buy what you do; they buy why you do it, and what you do simply serves as the proof of what you believe.

15:11

Now let me give you a successful example of the law of diffusion of innovation. In the summer of 1963, 250,000 people showed up on the mall in Washington to hear Dr. King speak. They sent out no invitations, and there was no website to check the date. How do you do that? Well, Dr. King wasn't the only man in America who was a great orator. He wasn't the only man in America who suffered in a pre-civil rights America. In fact, some of his ideas were bad. But he had a gift. He didn't go around telling people what needed to change in America. He went around and told people what he believed. "I believe, I believe, I believe," he told people. And people who believed what he believed took his cause, and they made it their own, and they told people. And some of those people created structures to get the word out to even more people. And lo and behold, 250,000 people showed up on the right day at the right time to hear him speak.

16:16

How many of them showed up for him? Zero. They showed up for themselves. It's what they believed about America that got them to travel in a bus for eight hours to stand in the sun in Washington in the middle of August. It's what they believed, and it wasn't about black versus white: 25% of the audience was white. Dr. King believed that there are two types of laws in this world: those that are made by a higher authority and those that are made by men. And not until all the laws that are made by men are consistent with the laws made by the higher authority will we live in a just world. It just so happened that the Civil Rights Movement was the perfect thing to help him bring his cause to life. We followed, not for him, but for ourselves. By the way, he gave the "I have a dream" speech, not the "I have a plan" speech.

17:07

(Laughter)

17:11

Listen to politicians now, with their comprehensive 12-point plans. They're not inspiring anybody. Because there are leaders and there are those who lead. Leaders hold a position of power or authority, but those who lead inspire us. Whether they're individuals or organizations, we follow those who lead, not because we have to, but because we want to. We follow those who lead, not for them, but for ourselves. And it's those who start with "why" that have the ability to inspire those around them or find others who inspire them.

17:52

Thank you very much.

17:53

(Applause)

Talk 4, Bréne Brown – The power of vulnerability

2829 van 3130 woorden = 90% gecodeerde passages

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So, I'll start with this: a couple years ago, an event planner called me because I was going to do a speaking event. And she called, and she said, "I'm really struggling with how to write about you on the little flyer." And I thought, "Well, what's the struggle?" And she said, "Well, I saw you speak, and I'm going to call you a researcher, I think, but I'm afraid if I call you a researcher, no one will come, because they'll think you're boring and irrelevant." (Laughter) And I was like, "Okay." And she said, "But the thing I liked about your talk is you're a storyteller. So I think what I'll do is just call you a storyteller." And of course, the academic, insecure part of me was like, "You're going to call me a what?" And she said, "I'm going to call you a storyteller." And I was like, "Why not magic pixie?" (Laughter) I was like, "Let me think about this for a second." I tried to call deep on my courage. And I thought, you know, I am a storyteller. I'm a qualitative researcher. I collect stories; that's what I do. And maybe stories are just data with a soul. And maybe I'm just a storyteller. And so I said, "You know what? Why don't you just say I'm a researcher-storyteller." And she went, "Ha ha. There's no such thing." (Laughter) So I'm a researcher-storyteller, and I'm going to talk to you today -- we're talking about expanding perception -- and so I want to talk to you and tell some stories about a piece of my research that fundamentally expanded my perception and really actually changed the way that I live and love and work and parent.

1:46

And this is where my story starts. When I was a young researcher, doctoral student, my first year I had a research professor who said to us, "Here's the thing, if you cannot measure it, it does not exist." And I thought he was just sweet-talking me. I was like, "Really?" and he was like, "Absolutely." And so you have to understand that I have a bachelor's in social work, a master's in social work, and I was getting my Ph.D. in social work, so my entire academic career was surrounded by people who kind of believed in the "life's messy, love it." And I'm more of the, "life's messy, clean it up, organize it and put it into a bento box." (Laughter) And so to think that I had found my way, to found a career that takes me -- really, one of the big sayings in social work is, "Lean into the discomfort of the work." And I'm like, knock discomfort upside the head and move it over and get all A's. That was my mantra. So I was very excited about this. And so I thought, you know what, this is the career for me, because I am interested in some messy topics. But I want to be able to make them not messy. I want to understand them. I want to hack into these things I know are important and lay the code out for everyone to see.

3:08

So where I started was with connection. Because, by the time you're a social worker for 10 years, what you realize is that connection is why we're here. It's what gives purpose and meaning to our lives. This is what it's all about. It doesn't matter whether you talk to people who work in social justice, mental health and abuse and neglect, what we know is that connection, the ability to feel connected, is -- neurobiologically that's how we're wired -- it's why we're here. So I thought, you know what, I'm going to start with connection. Well, you know that situation where you get an evaluation from your boss, and she tells you 37 things you do really awesome, and one "opportunity for growth?" (Laughter) And all you can think about is that opportunity for growth, right? Well, apparently this is the way my work went as well, because, when you ask people about

love, they tell you about heartbreak. When you ask people about belonging, they'll tell you their most excruciating experiences of being excluded. And when you ask people about connection, the stories they told me were about disconnection.

4:18

So very quickly -- really about six weeks into this research -- I ran into this unnamed thing that absolutely unraveled connection in a way that I didn't understand or had never seen. And so I pulled back out of the research and thought, I need to figure out what this is. And it turned out to be shame. And shame is really easily understood as the fear of disconnection: Is there something about me that, if other people know it or see it, that I won't be worthy of connection? The things I can tell you about it: it's universal; we all have it. The only people who don't experience shame have no capacity for human empathy or connection. No one wants to talk about it, and the less you talk about it the more you have it. What underpinned this shame, this "I'm not good enough," -- which we all know that feeling: "I'm not blank enough. I'm not thin enough, rich enough, beautiful enough, smart enough, promoted enough." The thing that underpinned this was excruciating vulnerability, this idea of, in order for connection to happen, we have to allow ourselves to be seen, really seen.

5:31

And you know how I feel about vulnerability. I hate vulnerability. And so I thought, this is my chance to beat it back with my measuring stick. I'm going in, I'm going to figure this stuff out, I'm going to spend a year, I'm going to totally deconstruct shame, I'm going to understand how vulnerability works, and I'm going to outsmart it. So I was ready, and I was really excited. As you know, it's not going to turn out well. (Laughter) You know this. So, I could tell you a lot about shame, but I'd have to borrow everyone else's time. But here's what I can tell you that it boils down to -- and this may be one of the most important things that I've ever learned in the decade of doing this research. My one year turned into six years: thousands of stories, hundreds of long interviews, focus groups. At one point, people were sending me journal pages and sending me their stories -- thousands of pieces of data in six years. And I kind of got a handle on it.

6:34

I kind of understood, this is what shame is, this is how it works. I wrote a book, I published a theory, but something was not okay -- and what it was is that, if I roughly took the people I interviewed and divided them into people who really have a sense of worthiness -- that's what this comes down to, a sense of worthiness -- they have a strong sense of love and belonging -- and folks who struggle for it, and folks who are always wondering if they're good enough. There was only one variable that separated the people who have a strong sense of love and belonging and the people who really struggle for it. And that was, the people who have a strong sense of love and belonging believe they're worthy of love and belonging. That's it. They believe they're worthy. And to me, the hard part of the one thing that keeps us out of connection is our fear that we're not worthy of connection, was something that, personally and professionally, I felt like I needed to understand better. So what I did is I took all of the interviews where I saw worthiness, where I saw people living that way, and just looked at those.

7:51

What do these people have in common? I have a slight office supply addiction, but that's another talk. So I had a manila folder, and I had a Sharpie, and I was like, what am I going to call this research? And the first words that came to my mind were whole-

hearted. These are whole-hearted people, living from this deep sense of worthiness. So I wrote at the top of the manila folder, and I started looking at the data. In fact, I did it first in a four-day very intensive data analysis, where I went back, pulled the interviews, the stories, pulled the incidents. What's the theme? What's the pattern? My husband left town with the kids because I always go into this Jackson Pollock crazy thing, where I'm just writing and in my researcher mode. And so here's what I found. What they had in common was a sense of courage. And I want to separate courage and bravery for you for a minute. Courage, the original definition of courage, when it first came into the English language -- it's from the Latin word *cor*, meaning heart -- and the original definition was to tell the story of who you are with your whole heart. And so these folks had, very simply, the courage to be imperfect. They had the compassion to be kind to themselves first and then to others, because, as it turns out, we can't practice compassion with other people if we can't treat ourselves kindly. And the last was they had connection, and -- this was the hard part -- as a result of authenticity, they were willing to let go of who they thought they should be in order to be who they were, which you have to absolutely do that for connection.

9:39

The other thing that they had in common was this: They fully embraced vulnerability. They believed that what made them vulnerable made them beautiful. They didn't talk about vulnerability being comfortable, nor did they really talk about it being excruciating -- as I had heard it earlier in the shame interviewing. They just talked about it being necessary. They talked about the willingness to say, "I love you" first, the willingness to do something where there are no guarantees, the willingness to breathe through waiting for the doctor to call after your mammogram. They're willing to invest in a relationship that may or may not work out. They thought this was fundamental.

10:43

I personally thought it was betrayal. I could not believe I had pledged allegiance to research, where our job -- you know, the definition of research is to control and predict, to study phenomena, for the explicit reason to control and predict. And now my mission to control and predict had turned up the answer that the way to live is with vulnerability and to stop controlling and predicting. This led to a little breakdown -- (Laughter) -- which actually looked more like this. (Laughter) And it did.

11:24

I call it a breakdown; my therapist calls it a spiritual awakening. (Laughter) A spiritual awakening sounds better than breakdown, but I assure you it was a breakdown. And I had to put my data away and go find a therapist. Let me tell you something: you know who you are when you call your friends and say, "I think I need to see somebody. Do you have any recommendations?" Because about five of my friends were like, "Wooo, I wouldn't want to be your therapist." (Laughter) I was like, "What does that mean?" And they're like, "I'm just saying, you know. Don't bring your measuring stick." (Laughter) I was like, "Okay." So I found a therapist. My first meeting with her, Diana -- I brought in my list of the way the whole-hearted live, and I sat down. And she said, "How are you?" And I said, "I'm great. I'm okay." She said, "What's going on?" And this is a therapist who sees therapists, because we have to go to those, because their B.S. meters are good. (Laughter) And so I said, "Here's the thing, I'm struggling." And she said, "What's the struggle?" And I said, "Well, I have a vulnerability issue. And I know that vulnerability is the core of shame and fear and our struggle for worthiness, but it appears that it's also the birthplace of joy, of creativity, of belonging, of love. And I

think I have a problem, and I need some help." And I said, "But here's the thing: no family stuff, no childhood shit." (Laughter) "I just need some strategies." (Laughter) (Applause) Thank you. So she goes like this. (Laughter) And then I said, "It's bad, right?" And she said, "It's neither good nor bad." (Laughter) "It just is what it is." And I said, "Oh my God, this is going to suck."

13:38

(Laughter)

13:41

And it did, and it didn't. And it took about a year. And you know how there are people that, when they realize that vulnerability and tenderness are important, that they surrender and walk into it. A: that's not me, and B: I don't even hang out with people like that. (Laughter) For me, it was a yearlong street fight. It was a slugfest. Vulnerability pushed, I pushed back. I lost the fight, but probably won my life back.

14:14

And so then I went back into the research and spent the next couple of years really trying to understand what they, the whole-hearted, what choices they were making, and what are we doing with vulnerability. Why do we struggle with it so much? Am I alone in struggling with vulnerability? No. So this is what I learned. We numb vulnerability -- when we're waiting for the call. It was funny, I sent something out on Twitter and on Facebook that says, "How would you define vulnerability? What makes you feel vulnerable?" And within an hour and a half, I had 150 responses. Because I wanted to know what's out there. Having to ask my husband for help because I'm sick, and we're newly married; initiating sex with my husband; initiating sex with my wife; being turned down; asking someone out; waiting for the doctor to call back; getting laid off; laying off people. This is the world we live in. We live in a vulnerable world. And one of the ways we deal with it is we numb vulnerability.

15:23

And I think there's evidence -- and it's not the only reason this evidence exists, but I think it's a huge cause -- We are the most in-debt, obese, addicted and medicated adult cohort in U.S. history. The problem is -- and I learned this from the research -- that you cannot selectively numb emotion. You can't say, here's the bad stuff. Here's vulnerability, here's grief, here's shame, here's fear, here's disappointment. I don't want to feel these. I'm going to have a couple of beers and a banana nut muffin. (Laughter) I don't want to feel these. And I know that's knowing laughter. I hack into your lives for a living. God. (Laughter) You can't numb those hard feelings without numbing the other affects, our emotions. You cannot selectively numb. So when we numb those, we numb joy, we numb gratitude, we numb happiness. And then we are miserable, and we are looking for purpose and meaning, and then we feel vulnerable, so then we have a couple of beers and a banana nut muffin. And it becomes this dangerous cycle.

16:46

One of the things that I think we need to think about is why and how we numb. And it doesn't just have to be addiction. The other thing we do is we make everything that's uncertain certain. Religion has gone from a belief in faith and mystery to certainty. I'm right, you're wrong. Shut up. That's it. Just certain. The more afraid we are, the more vulnerable we are, the more afraid we are. This is what politics looks like today. There's no discourse anymore. There's no conversation. There's just blame. You know how blame is described in the research? A way to discharge pain and discomfort. We perfect.

If there's anyone who wants their life to look like this, it would be me, but it doesn't work. Because what we do is we take fat from our butts and put it in our cheeks. (Laughter) Which just, I hope in 100 years, people will look back and go, "Wow."

17:50

(Laughter)

17:52

And we perfect, most dangerously, our children. Let me tell you what we think about children. They're hardwired for struggle when they get here. And when you hold those perfect little babies in your hand, our job is not to say, "Look at her, she's perfect. My job is just to keep her perfect -- make sure she makes the tennis team by fifth grade and Yale by seventh." That's not our job. Our job is to look and say, "You know what? You're imperfect, and you're wired for struggle, but you are worthy of love and belonging." That's our job. Show me a generation of kids raised like that, and we'll end the problems I think that we see today. We pretend that what we do doesn't have an effect on people. We do that in our personal lives. We do that corporate -- whether it's a bailout, an oil spill, a recall -- we pretend like what we're doing doesn't have a huge impact on other people. I would say to companies, this is not our first rodeo, people. We just need you to be authentic and real and say, "We're sorry. We'll fix it."

19:01

But there's another way, and I'll leave you with this. This is what I have found: to let ourselves be seen, deeply seen, vulnerably seen; to love with our whole hearts, even though there's no guarantee -- and that's really hard, and I can tell you as a parent, that's excruciatingly difficult -- to practice gratitude and joy in those moments of terror, when we're wondering, "Can I love you this much? Can I believe in this this passionately? Can I be this fierce about this?" just to be able to stop and, instead of catastrophizing what might happen, to say, "I'm just so grateful, because to feel this vulnerable means I'm alive." And the last, which I think is probably the most important, is to believe that we're enough. Because when we work from a place, I believe, that says, "I'm enough," then we stop screaming and start listening, we're kinder and gentler to the people around us, and we're kinder and gentler to ourselves.

20:05

That's all I have. Thank you.

20:07

(Applause)

Talk 5, Jill Bolte Taylor – My stroke of insight

2677 van 2743 woorden = 98% gecodeerde passages

0:11

I grew up to study the brain because I have a brother who has been diagnosed with a brain disorder, schizophrenia. And as a sister and later, as a scientist, I wanted to understand, why is it that I can take my dreams, I can connect them to my reality, and I can make my dreams come true? **What is it about my brother's brain and his schizophrenia that he cannot connect his dreams to a common and shared reality, so they instead become delusion?**

0:43

So I dedicated my career to research into the severe mental illnesses. And I moved from my home state of Indiana to Boston, where I was working in the lab of Dr. Francine Benes, in the Harvard Department of Psychiatry. And in the lab, we were asking the question, "What are the biological differences between the brains of individuals who would be diagnosed as normal control, as compared with the brains of individuals diagnosed with schizophrenia, schizoaffective or bipolar disorder?"

1:15

So we were essentially mapping the microcircuitry of the brain: which cells are communicating with which cells, with which chemicals, and then in what quantities of those chemicals? So there was a lot of meaning in my life because I was performing this type of research during the day, but then in the evenings and on the weekends, I traveled as an advocate for NAMI, the National Alliance on Mental Illness. But on the morning of December 10, 1996, I woke up to discover that I had a brain disorder of my own. A blood vessel exploded in the left half of my brain. And in the course of four hours, I watched my brain completely deteriorate in its ability to process all information. On the morning of the hemorrhage, I could not walk, talk, read, write or recall any of my life. I essentially became an infant in a woman's body.

2:16

If you've ever seen a human brain, it's obvious that the two hemispheres are completely separate from one another. And I have brought for you a real human brain. (Groaning, laughter) So this is a real human brain.

2:39

This is the front of the brain, the back of brain with the spinal cord hanging down, and this is how it would be positioned inside of my head. And when you look at the brain, it's obvious that the two cerebral cortices are completely separate from one another. For those of you who understand computers, our right hemisphere functions like a parallel processor, while our left hemisphere functions like a serial processor. The two hemispheres do communicate with one another through the corpus callosum, which is made up of some 300 million axonal fibers. But other than that, the two hemispheres are completely separate. Because they process information differently, each of our hemispheres think about different things, they care about different things, and, dare I say, they have very different personalities.

3:36

Excuse me. Thank you. It's been a joy. Assistant: It has been.

3:41

(Laughter)

3:44

Our right human hemisphere is all about this present moment. It's all about "right here, right now." Our right hemisphere, it thinks in pictures and it learns kinesthetically through the movement of our bodies. Information, in the form of energy, streams in simultaneously through all of our sensory systems and then it explodes into this enormous collage of what this present moment looks like, what this present moment smells like and tastes like, what it feels like and what it sounds like. I am an energy-being connected to the energy all around me through the consciousness of my right hemisphere. We are energy-beings connected to one another through the consciousness

of our right hemispheres as one human family. And right here, right now, we are brothers and sisters on this planet, here to make the world a better place. And in this moment we are perfect, we are whole and we are beautiful.

4:55

My left hemisphere, our left hemisphere, is a very different place. Our left hemisphere thinks linearly and methodically. Our left hemisphere is all about the past and it's all about the future. Our left hemisphere is designed to take that enormous collage of the present moment and start picking out details, and more details about those details. It then categorizes and organizes all that information, associates it with everything in the past we've ever learned, and projects into the future all of our possibilities. And our left hemisphere thinks in language. It's that ongoing brain chatter that connects me and my internal world to my external world. It's that little voice that says to me, "Hey, you've got to remember to pick up bananas on your way home. I need them in the morning."

5:52

It's that calculating intelligence that reminds me when I have to do my laundry. But perhaps most important, it's that little voice that says to me, "I am. I am." And as soon as my left hemisphere says to me "I am," I become separate. I become a single solid individual, separate from the energy flow around me and separate from you. And this was the portion of my brain that I lost on the morning of my stroke.

6:23

On the morning of the stroke, I woke up to a pounding pain behind my left eye. And it was the kind of caustic pain that you get when you bite into ice cream. And it just gripped me -- and then it released me. And then it just gripped me -- and then it released me. And it was very unusual for me to ever experience any kind of pain, so I thought, "OK, I'll just start my normal routine."

6:50

So I got up and I jumped onto my cardio glider, which is a full-body, full-exercise machine. And I'm jamming away on this thing, and I'm realizing that my hands look like primitive claws grasping onto the bar. And I thought, "That's very peculiar." And I looked down at my body and I thought, "Whoa, I'm a weird-looking thing." And it was as though my consciousness had shifted away from my normal perception of reality, where I'm the person on the machine having the experience, to some esoteric space where I'm witnessing myself having this experience.

7:27

And it was all very peculiar, and my headache was just getting worse. So I get off the machine, and I'm walking across my living room floor, and I realize that everything inside of my body has slowed way down. And every step is very rigid and very deliberate. There's no fluidity to my pace, and there's this constriction in my area of perception, so I'm just focused on internal systems. And I'm standing in my bathroom getting ready to step into the shower, and I could actually hear the dialogue inside of my body. I heard a little voice saying, "OK. You muscles, you've got to contract. You muscles, you relax."

8:03

And then I lost my balance, and I'm propped up against the wall. And I look down at my arm and I realize that I can no longer define the boundaries of my body. I can't define where I begin and where I end, because the atoms and the molecules of my arm blended

with the atoms and molecules of the wall. And all I could detect was this energy -- energy.

8:29

And I'm asking myself, "What is wrong with me? What is going on?" And in that moment, my left hemisphere brain chatter went totally silent. Just like someone took a remote control and pushed the mute button. Total silence. And at first I was shocked to find myself inside of a silent mind. But then I was immediately captivated by the magnificence of the energy around me. And because I could no longer identify the boundaries of my body, I felt enormous and expansive. I felt at one with all the energy that was, and it was beautiful there.

9:09

Then all of a sudden my left hemisphere comes back online and it says to me, "Hey! We've got a problem! We've got to get some help." And I'm going, "Ahh! I've got a problem!" (Laughter) So it's like, "OK, I've got a problem."

9:21

But then I immediately drifted right back out into the consciousness -- and I affectionately refer to this space as La La Land. But it was beautiful there. Imagine what it would be like to be totally disconnected from your brain chatter that connects you to the external world.

9:39

So here I am in this space, and my job, and any stress related to my job -- it was gone. And I felt lighter in my body. And imagine all of the relationships in the external world and any stressors related to any of those -- they were gone. And I felt this sense of peacefulness. And imagine what it would feel like to lose 37 years of emotional baggage! (Laughter) Oh! I felt euphoria -- euphoria. It was beautiful.

10:14

And again, my left hemisphere comes online and it says, "Hey! You've got to pay attention. We've got to get help." And I'm thinking, "I've got to get help. I've got to focus." So I get out of the shower and I mechanically dress and I'm walking around my apartment, and I'm thinking, "I've got to get to work. Can I drive?"

10:31

And in that moment, my right arm went totally paralyzed by my side. Then I realized, "Oh my gosh! I'm having a stroke!"

10:39

And the next thing my brain says to me is, Wow! This is so cool! (Laughter) This is so cool! How many brain scientists have the opportunity to study their own brain from the inside out?" (Laughter)

10:55

And then it crosses my mind, "But I'm a very busy woman!" (Laughter) "I don't have time for a stroke!"

11:02

So I'm like, "OK, I can't stop the stroke from happening, so I'll do this for a week or two, and then I'll get back to my routine. OK. So I've got to call help. I've got to call work." I couldn't remember the number at work, so I remembered, in my office I had a

business card with my number. So I go into my business room, I pull out a three-inch stack of business cards. And I'm looking at the card on top and even though I could see clearly in my mind's eye what my business card looked like, I couldn't tell if this was my card or not, because all I could see were pixels. And the pixels of the words blended with the pixels of the background and the pixels of the symbols, and I just couldn't tell. And then I would wait for what I call a wave of clarity. And in that moment, I would be able to reattach to normal reality and I could tell that's not the card... that's not the card. It took me 45 minutes to get one inch down inside of that stack of cards. In the meantime, for 45 minutes, the hemorrhage is getting bigger in my left hemisphere. I do not understand numbers, I do not understand the telephone, but it's the only plan I have. So I take the phone pad and I put it right here. I take the business card, I put it right here, and I'm matching the shape of the squiggles on the card to the shape of the squiggles on the phone pad. But then I would drift back out into La La Land, and not remember when I came back if I'd already dialed those numbers. So I had to wield my paralyzed arm like a stump and cover the numbers as I went along and pushed them, so that as I would come back to normal reality, I'd be able to tell, "Yes, I've already dialed that number."

12:40

Eventually, the whole number gets dialed and I'm listening to the phone, and my colleague picks up the phone and he says to me, "Woo woo woo woo." (Laughter) (Laughter) And I think to myself, "Oh my gosh, he sounds like a Golden Retriever!" (Laughter)

13:00

And so I say to him -- clear in my mind, I say to him: "This is Jill! I need help!" And what comes out of my voice is, "Woo woo woo woo woo." I'm thinking, "Oh my gosh, I sound like a Golden Retriever." So I couldn't know -- I didn't know that I couldn't speak or understand language until I tried. So he recognizes that I need help and he gets me help.

13:21

And a little while later, I am riding in an ambulance from one hospital across Boston to [Massachusetts] General Hospital. And I curl up into a little fetal ball. And just like a balloon with the last bit of air, just right out of the balloon, I just felt my energy lift and just I felt my spirit surrender.

13:46

And in that moment, I knew that I was no longer the choreographer of my life. And either the doctors rescue my body and give me a second chance at life, or this was perhaps my moment of transition. When I woke later that afternoon,

14:07

I was shocked to discover that I was still alive. When I felt my spirit surrender, I said goodbye to my life. And my mind was now suspended between two very opposite planes of reality. Stimulation coming in through my sensory systems felt like pure pain. Light burned my brain like wildfire, and sounds were so loud and chaotic that I could not pick a voice out from the background noise, and I just wanted to escape. Because I could not identify the position of my body in space, I felt enormous and expansive, like a genie just liberated from her bottle. And my spirit soared free, like a great whale gliding through the sea of silent euphoria. Nirvana. I found Nirvana. And I remember

thinking, there's no way I would ever be able to squeeze the enormoussness of myself back inside this tiny little body.

15:24

But then I realized, "But I'm still alive! I'm still alive, and I have found Nirvana. And if I have found Nirvana and I'm still alive, then everyone who is alive can find Nirvana." And I pictured a world filled with beautiful, peaceful, compassionate, loving people who knew that they could come to this space at any time. And that they could purposely choose to step to the right of their left hemispheres -- and find this peace. And then I realized what a tremendous gift this experience could be, what a stroke of insight this could be to how we live our lives. And it motivated me to recover.

16:20

Two and a half weeks after the hemorrhage, the surgeons went in, and they removed a blood clot the size of a golf ball that was pushing on my language centers. Here I am with my mama, who is a true angel in my life. It took me eight years to completely recover.

16:39

So who are we? We are the life-force power of the universe, with manual dexterity and two cognitive minds. And we have the power to choose, moment by moment, who and how we want to be in the world. Right here, right now, I can step into the consciousness of my right hemisphere, where we are. I am the life-force power of the universe. I am the life-force power of the 50 trillion beautiful molecular geniuses that make up my form, at one with all that is. Or, I can choose to step into the consciousness of my left hemisphere, where I become a single individual, a solid. Separate from the flow, separate from you. I am Dr. Jill Bolte Taylor: intellectual, neuroanatomist. These are the "we" inside of me. Which would you choose? Which do you choose? And when? I believe that the more time we spend choosing to run the deep inner-peace circuitry of our right hemispheres, the more peace we will project into the world, and the more peaceful our planet will be.

18:08

And I thought that was an idea worth spreading. Thank you.

18:13

(Applause)

Talk 6, Pranav Mistry – The thrilling potential of SixthSense technology

1448 van 1988 woorden = 73% gecodeerde passages

0:11

We grew up interacting with the physical objects around us. There are an enormous number of them that we use every day. Unlike most of our computing devices, these objects are much more fun to use. When you talk about **objects, one other thing automatically comes attached to that thing, and that is gestures: how we manipulate these objects, how we use these objects in everyday life.** We use gestures not only to interact with these objects, but we also use them to interact with each other. A gesture of "Namaste!", maybe, to respect someone, or maybe, in India I don't need to teach a kid that this means "four runs" in cricket. It comes as a part of our everyday learning.

0:55

So, I am very interested, from the beginning, how our knowledge about everyday objects and gestures, and how we use these objects, can be leveraged to our interactions with the digital world. Rather than using a keyboard and mouse, why can I not use my computer in the same way that I interact in the physical world?

1:17

So, I started this exploration around eight years back, and it literally started with a mouse on my desk. Rather than using it for my computer, I actually opened it. Most of you might be aware that, in those days, the mouse used to come with a ball inside, and there were two rollers that actually guide the computer where the ball is moving, and, accordingly, where the mouse is moving. So, I was interested in these two rollers, and I actually wanted more, so I borrowed another mouse from a friend -- never returned to him -- and I now had four rollers. Interestingly, what I did with these rollers is, basically, I took them off of these mice and then put them in one line. It had some strings and pulleys and some springs. What I got is basically a gesture-interface device that actually acts as a motion-sensing device made for two dollars. So, here, whatever movement I do in my physical world is actually replicated inside the digital world just using this small device that I made, around eight years back, in 2000.

2:21

Because I was interested in integrating these two worlds, I thought of sticky notes. I thought, "Why can I not connect the normal interface of a physical sticky note to the digital world?" A message written on a sticky note to my mom, on paper, can come to an SMS, or maybe a meeting reminder automatically syncs with my digital calendar -- a to-do list that automatically syncs with you. But you can also search in the digital world, or maybe you can write a query, saying, "What is Dr. Smith's address?" and this small system actually prints it out -- so it actually acts like a paper input-output system, just made out of paper.

3:01

In another exploration, I thought of making a pen that can draw in three dimensions. So, I implemented this pen that can help designers and architects not only think in three dimensions, but they can actually draw, so that it's more intuitive to use that way.

3:16

Then I thought, "Why not make a Google Map, but in the physical world?" Rather than typing a keyword to find something, I put my objects on top of it. If I put a boarding pass, it will show me where the flight gate is. A coffee cup will show where you can find more coffee, or where you can trash the cup.

3:33

So, these were some of the earlier explorations I did because the goal was to connect these two worlds seamlessly. Among all these experiments, there was one thing in common: I was trying to bring a part of the physical world to the digital world. I was taking some part of the objects, or any of the intuitiveness of real life, and bringing them to the digital world, because the goal was to make our computing interfaces more intuitive.

4:00

But then I realized that we humans are not actually interested in computing. What we are interested in is information. We want to know about things. We want to know about dynamic things going around.

4:12

So I thought, around last year -- in the beginning of the last year -- I started thinking, "Why can I not take this approach in the reverse way?" Maybe, "How about I take my digital world and paint the physical world with that digital information?" Because pixels are actually, right now, confined in these rectangular devices that fit in our pockets. Why can I not remove this confine and take that to my everyday objects, everyday life so that I don't need to learn the new language for interacting with those pixels?

4:45

So, in order to realize this dream, I actually thought of putting a big-size projector on my head. I think that's why this is called a head-mounted projector, isn't it? I took it very literally, and took my bike helmet, put a little cut over there so that the projector actually fits nicely. So now, what I can do -- I can augment the world around me with this digital information.

5:07

But later, I realized that I actually wanted to interact with those digital pixels, also. So I put a small camera over there that acts as a digital eye. Later, we moved to a much better, consumer-oriented pendant version of that, that many of you now know as the SixthSense device.

5:23

But the most interesting thing about this particular technology is that you can carry your digital world with you wherever you go. You can start using any surface, any wall around you, as an interface. The camera is actually tracking all your gestures. Whatever you're doing with your hands, it's understanding that gesture. And, actually, if you see, there are some color markers that in the beginning version we are using with it. You can start painting on any wall. You stop by a wall, and start painting on that wall. But we are not only tracking one finger, here. We are giving you the freedom of using all of both of your hands, so you can actually use both of your hands to zoom into or zoom out of a map just by pinching all present. The camera is actually doing -- just, getting all the images -- is doing the edge recognition and also the color recognition and so many other small algorithms are going on inside. So, technically, it's a little bit complex, but it gives you an output which is more intuitive to use, in some sense.

6:20

But I'm more excited that you can actually take it outside. Rather than getting your camera out of your pocket, you can just do the gesture of taking a photo, and it takes a photo for you.

6:31

(Applause)

6:35

Thank you.

6:36

And later I can find a wall, anywhere, and start browsing those photos or maybe, "OK, I want to modify this photo a little bit and send it as an email to a friend." So, we are looking for an era where computing will actually merge with the physical world. And, of course, if you don't have any surface, you can start using your palm for simple operations. Here, I'm dialing a phone number just using my hand. The camera is actually not only understanding your hand movements, but, interestingly, is also able to understand what objects you are holding in your hand.

7:11

For example, in this case, the book cover is matched with so many thousands, or maybe millions of books online, and checking out which book it is. Once it has that information, it finds out more reviews about that, or maybe New York Times has a sound overview on that, so you can actually hear, on a physical book, a review as sound. (Video) Famous talk at Harvard University --

7:34

This was Obama's visit last week to MIT. (Video) And particularly I want to thank two outstanding MIT -- Pranav Mistry: So, I was seeing the live [video] of his talk, outside, on just a newspaper. Your newspaper will show you live weather information rather than having it updated. You have to check your computer in order to do that, right?

7:55

(Applause)

8:00

When I'm going back, I can just use my boarding pass to check how much my flight has been delayed, because at that particular time, I'm not feeling like opening my iPhone, and checking out a particular icon. And I think this technology will not only change the way -- (Laughter) Yes. It will change the way we interact with people, also, not only the physical world. The fun part is, I'm going to the Boston metro, and playing a pong game inside the train on the ground, right? (Laughter) And I think the imagination is the only limit of what you can think of when this kind of technology merges with real life.

8:35

But many of you argue, actually, that all of our work is not only about physical objects. We actually do lots of accounting and paper editing and all those kinds of things; what about that? And many of you are excited about the next-generation tablet computers to come out in the market. So, rather than waiting for that, I actually made my own, just using a piece of paper. So, what I did here is remove the camera -- All the webcam cameras have a microphone inside the camera. I removed the microphone from that, and then just pinched that -- like I just made a clip out of the microphone -- and clipped that to a piece of paper, any paper that you found around. So now the sound of the touch is getting me when exactly I'm touching the paper. But the camera is actually tracking where my fingers are moving.

9:24

You can of course watch movies. (Video) Good afternoon. My name is Russell, and I am a Wilderness Explorer in Tribe 54."

9:33

PM: And you can of course play games. (Car engine) Here, the camera is actually understanding how you're holding the paper and playing a car-racing game. (Applause)

9:48

Many of you already must have thought, OK, you can browse. Yeah. Of course you can browse to any websites or you can do all sorts of computing on a piece of paper wherever you need it. So, more interestingly, I'm interested in how we can take that in a more dynamic way. When I come back to my desk, I can just pinch that information back to my desktop so I can use my full-size computer.

10:11

(Applause)

10:13

And why only computers? We can just play with papers. Paper world is interesting to play with. Here, I'm taking a part of a document, and putting over here a second part from a second place, and I'm actually modifying the information that I have over there. Yeah. And I say, "OK, this looks nice, let me print it out, that thing." So I now have a print-out of that thing. So the workflow is more intuitive, the way we used to do it maybe 20 years back, rather than now switching between these two worlds.

10:46

So, as a last thought, I think that integrating information to everyday objects will not only help us to get rid of the digital divide, the gap between these two worlds, but will also help us, in some way, to stay human, to be more connected to our physical world. And it will actually help us not end up being machines sitting in front of other machines.

11:14

That's all. Thank you.

11:17

(Applause)

11:31

Thank you.

11:32

(Applause)

Talk 7, Mary Roach – 10 things you didn't know about orgasm

404 van 2371 woorden = 17% gecodeerde passages

0:15

Alright. I'm going to show you a couple of images from a very diverting paper in The Journal of Ultrasound in Medicine. I'm going to go way out on a limb and say that it is the most diverting paper ever published in The Journal of Ultrasound in Medicine. The title is "Observations of In-Utero Masturbation." (Laughter) **Okay. Now on the left you can see the hand -- that's the big arrow -- and the penis on the right. The hand hovering. And over here we have, in the words of radiologist Israel Meisner, "The hand grasping the penis in a fashion resembling masturbation movements."** Bear in mind this was an ultrasound, so it would have been moving images.

1:01

Orgasm is a reflex of the autonomic nervous system. Now, this is the part of the nervous system that deals with the things that we don't consciously control, like digestion, heart rate and sexual arousal. **And the orgasm reflex can be triggered by a surprisingly broad range of input.** Genital stimulation. Duh. But also, Kinsey interviewed a woman who could be brought to orgasm by having someone stroke her eyebrow. People with spinal cord injuries, like paraplegias, quadriplegias, will often develop a very, very sensitive area right above the level of their injury, wherever that is. There is such a thing as a knee orgasm in the literature.

1:44

I think the most curious one that I came across was a case report of a woman who had an orgasm every time she brushed her teeth. (Laughter) Something in the complex sensory-motor action of brushing her teeth was triggering orgasm. And she went to a neurologist, who was fascinated. He checked to see if it was something in the toothpaste, but no -- it happened with any brand. They stimulated her gums with a toothpick, to see if that was doing it. No. It was the whole, you know, motion. And the amazing thing to me is that you would think this woman would have excellent oral hygiene. (Laughter) Sadly -- this is what it said in the journal paper -- "She believed that she was possessed by demons and switched to mouthwash for her oral care." It's so sad.

2:44

(Laughter)

2:45

When I was working on the book, I interviewed a woman who can think herself to orgasm. She was part of a study at Rutgers University. You've got to love that. Rutgers. So I interviewed her in Oakland, in a sushi restaurant. And I said, "So, could you do it right here?" And she said, "Yeah, but you know I'd rather finish my meal if you don't mind." (Laughter) But afterwards, she was kind enough to demonstrate on a bench outside. It was remarkable. It took about one minute. And I said to her, "Are you just doing this all the time?" (Laughter) She said, "No. Honestly, when I get home, I'm usually too tired." (Laughter) She said that the last time she had done it was on the Disneyland tram.

3:36

(Laughter)

3:38

The headquarters for orgasm, along the spinal nerve, is something called the sacral nerve root, which is back here. **And if you trigger, if you stimulate with an electrode, the precise spot, you will trigger an orgasm. And it is a fact that you can trigger spinal reflexes in dead people** -- a certain kind of dead person, a beating-heart cadaver. Now this is somebody who is brain-dead, legally dead, definitely checked out, but is being kept alive on a respirator, so that their organs will be oxygenated for transplantation. Now in one of these brain-dead people, if you trigger the right spot, you will see something every now and then. There is a reflex called the Lazarus reflex. And this is -- I'll demonstrate as best I can, not being dead. It's like this. You trigger the spot. The dead guy, or gal, goes... like that. Very unsettling for people working in pathology labs.

4:39

(Laughter)

4:40

Now, if you can trigger the Lazarus reflex in a dead person, why not the orgasm reflex? I asked this question to a brain death expert, Stephanie Mann, who was foolish enough to return my emails. (Laughter) I said, "So, could you conceivably trigger an orgasm in a dead person?" She said, "Yes, if the sacral nerve is being oxygenated, you conceivably could." Obviously it wouldn't be as much fun for the person. But it would be an orgasm -- (Laughter) nonetheless. There is a researcher at the University of Alabama who does orgasm research. I said to her, "You should do an experiment. You know? You can get cadavers if you work at a university." I said, "You should actually do this." She said, "You get the human subjects review board approval for this one."

5:31

(Laughter)

5:33

According to 1930s marriage manual author, Theodoor van De Velde, a slight seminal odor can be detected on the breath of a woman within about an hour after sexual intercourse. Theodoor van De Velde was something of a semen connoisseur. (Laughter) This is a guy writing a book, "Ideal Marriage," you know. Very heavy hetero guy. But he wrote in this book, "Ideal Marriage" -- he said that he could differentiate between the semen of a young man, which he said had a fresh, exhilarating smell, and the semen of mature men, whose semen smelled, quote, "Remarkably like that of the flowers of the Spanish chestnut. Sometimes quite freshly floral, and then again sometimes extremely pungent."

6:18

(Laughter)

6:23

Okay. In 1999, in the state of Israel, a man began hiccupping. And this was one of those cases that went on and on. He tried everything his friends suggested. Nothing seemed to help. Days went by. At a certain point, the man, still hiccupping, had sex with his wife. And lo and behold, the hiccups went away. He told his doctor, who published a case report in a Canadian medical journal under the title, "Sexual Intercourse as a Potential Treatment for Intractable Hiccups." I love this article because at a certain point they suggested that unattached hiccuppers could try masturbation. (Laughter) I love that because there is like a whole demographic: unattached hiccuppers. (Laughter) Married, single, unattached hiccupper.

7:15

In the 1900s, early 1900s, a lot of gynecologists believed that when a woman has an orgasm, the contractions serve to suck the semen up through the cervix and sort of deliver it really quickly to the egg, thereby upping the odds of conception. It was called the "upsuck" theory. (Laughter) If you go all the way back to Hippocrates, physicians believed that orgasm in women was not just helpful for conception, but necessary. Doctors back then were routinely telling men the importance of pleasuring their wives. Marriage-manual author and semen-sniffer Theodoor van De Velde -- (Laughter) has a line in his book. I loved this guy. I got a lot of mileage out of Theodoor van De Velde. He had this line in his book that supposedly comes from the Habsburg Monarchy, where there was an empress Maria Theresa, who was having trouble conceiving. And apparently the royal court physician said to her, "I am of the opinion that the vulva of your most sacred majesty be titillated for some time prior to intercourse." (Laughter) It's apparently, I don't know, on the record somewhere.

8:33

Masters and Johnson: now we're moving forward to the 1950s. Masters and Johnson were upsuck skeptics, which is also really fun to say. They didn't buy it. And they decided, being Masters and Johnson, that they would get to the bottom of it. They brought women into the lab -- I think it was five women -- and outfitted them with cervical caps containing artificial semen. And in the artificial semen was a radio-opaque substance, such that it would show up on an X-ray. This is the 1950s. Anyway, these women sat in front of an X-ray device. And they masturbated. And Masters and Johnson looked to see if the semen was being sucked up. Did not find any evidence of upsuck. You may be wondering, "How do you make artificial semen?" (Laughter) I have an answer for you. I have two answers. You can use flour and water, or cornstarch and water. I actually found three separate recipes in the literature. (Laughter) My favorite being the one that says -- you know, they have the ingredients listed, and then in a recipe it will say, for example, "Yield: two dozen cupcakes." This one said, "Yield: one ejaculate."

9:49

(Laughter)

9:52

There's another way that orgasm might boost fertility. This one involves men. Sperm that sit around in the body for a week or more start to develop abnormalities that make them less effective at head-banging their way into the egg. British sexologist Roy Levin has speculated that this is perhaps why men evolved to be such enthusiastic and frequent masturbators. He said, "If I keep tossing myself off I get fresh sperm being made." Which I thought was an interesting idea, theory. So now you have an evolutionary excuse.

10:23

(Laughter)

10:27

Okay.

10:30

(Laughter)

10:32

All righty. There is considerable evidence for upsuck in the animal kingdom -- pigs, for instance. In Denmark, the Danish National Committee for Pig Production found out that if you sexually stimulate a sow while you artificially inseminate her, you will see a six-percent increase in the farrowing rate, which is the number of piglets produced. So they came up with this five-point stimulation plan for the sows. There is posters they put in the barn, and they have a DVD. And I got a copy of this DVD. (Laughter) This is my unveiling, because I am going to show you a clip.

11:12

(Laughter)

11:14

So, okay. Now, here we go, la la la, off to work. It all looks very innocent. He's going to be doing things with his hands that the boar would use his snout, lacking hands. Okay.

(Laughter) This is it. The boar has a very odd courtship repertoire. (Laughter) This is to mimic the weight of the boar. (Laughter) You should know, the clitoris of the pig is inside the vagina. So this may be sort of titillating for her. Here we go. (Laughter) And the happy result. (Applause) I love this video. There is a point in this video, towards the beginning, where they zoom in for a close up of his hand with his wedding ring, as if to say, "It's okay, it's just his job. He really does like women."

12:28

(Laughter)

12:32

Okay. When I was in Denmark, my host was named Anne Marie. And I said, "So why don't you just stimulate the clitoris of the pig? Why don't you have the farmers do that? That's not one of your five steps." I have to read you what she said, because I love it. She said, "It was a big hurdle just to get farmers to touch underneath the vulva. So we thought, let's not mention the clitoris right now." (Laughter) Shy but ambitious pig farmers, however, can purchase a -- this is true -- a sow vibrator, that hangs on the sperm feeder tube to vibrate. Because, as I mentioned, the clitoris is inside the vagina. So possibly, you know, a little more arousing than it looks. And I also said to her, "Now, these sows. I mean, you may have noticed there, The sow doesn't look to be in the throes of ecstasy." And she said, you can't make that conclusion, because animals don't register pain or pleasure on their faces in the same way that we do. Pigs, for example, are more like dogs. They use the upper half of the face; the ears are very expressive. So you're not really sure what's going on with the pig.

13:39

Primates, on the other hand, we use our mouths more. This is the ejaculation face of the stump-tailed macaque. (Laughter) And, interestingly, this has been observed in female macaques, but only when mounting another female.

13:57

(Laughter)

14:00

Masters and Johnson. In the 1950s, they decided, okay, we're going to figure out the entire human sexual response cycle, from arousal, all the way through orgasm, in men and women -- everything that happens in the human body. Okay, with women, a lot of this is happening inside. This did not stop Masters and Johnson. They developed an artificial coition machine. This is basically a penis camera on a motor. There is a phallus, clear acrylic phallus, with a camera and a light source, attached to a motor that is kind of going like this. And the woman would have sex with it. That is what they would do. Pretty amazing. Sadly, this device has been dismantled. This just kills me, not because I wanted to use it -- I wanted to see it.

14:45

(Laughter)

14:48

One fine day, Alfred Kinsey decided to calculate the average distance traveled by ejaculated semen. This was not idle curiosity. Doctor Kinsey had heard -- and there was a theory going around at the time, this being the 1940s -- that the force with which semen is thrown against the cervix was a factor in fertility. Kinsey thought it was bunk,

so he got to work. He got together in his lab 300 men, a measuring tape, and a movie camera. (Laughter) And in fact, he found that in three quarters of the men the stuff just kind of slopped out. It wasn't spurting or thrown or ejected under great force. However, the record holder landed just shy of the eight-foot mark, which is impressive. (Laughter) (Applause) Yes. Exactly. (Laughter) Sadly, he's anonymous. His name is not mentioned. (Laughter)

15:56

In his write-up of this experiment in his book, Kinsey wrote, "Two sheets were laid down to protect the oriental carpets." (Laughter) Which is my second favorite line in the entire oeuvre of Alfred Kinsey. My favorite being, "Cheese crumbs spread before a pair of copulating rats will distract the female, but not the male."

16:20

(Laughter)

16:22

Thank you very much.

16:24

(Applause)

16:28

Thanks!

Talk 8, Tony Robbins – Why we do what we do

494 van 4372 woorden = 11% gecodeerde passages

0:13

Thank you. I have to tell you I'm both challenged and excited. My excitement is: I get a chance to give something back. My challenge is: the shortest seminar I usually do is 50 hours. (Laughter) I'm not exaggerating. I do weekends -- I do more, obviously, I also coach people -- but I'm into immersion, because how did you learn language? Not just by learning principles, you got in it and you did it so often that it became real.

0:36

The bottom line of why I'm here, besides being a crazy mofo, is that -- I'm not here to motivate you, you don't need that, obviously. Often that's what people think I do, and it's the furthest thing from it. What happens, though, is people say to me, "I don't need any motivation." But that's not what I do. I'm the "why" guy. I want to know why you do what you do.

0:56

What is your motive for action? What is it that drives you in your life today? Not 10 years ago. Are you running the same pattern? Because I believe that the invisible force of internal drive, activated, is the most important thing. I'm here because I believe emotion is the force of life. All of us here have great minds. Most of us here have great minds, right? We all know how to think. With our minds we can rationalize anything. We can make anything happen. I agree with what was described a few days ago, that people work in their self-interest.

1:28

But we know that that's bullshit at times. You don't work in your self-interest all the time, because when emotion comes into it, the wiring changes in the way it functions. So it's wonderful to think intellectually about how the life of the world is, especially those who are very smart can play this game in our head. But I really want to know what's driving you.

1:47

What I would like to invite you to do by the end of this talk is explore where you are today, for two reasons. One: so that you can contribute more. And two: that hopefully we can not just understand other people more, but appreciate them more, and create the kinds of connections that can stop some of the challenges that we face today. **They're only going to get magnified by the very technology that connects us, because it's making us intersect. That intersection doesn't always create a view** of "everybody now understands everybody, and everybody appreciates everybody."

2:15

I've had an obsession basically for 30 years, "What makes the difference in the quality of people's lives? What in their performance?" I got hired to produce the result now. I've done it for 30 years. I get the phone call when the athlete is burning down on national television, and they were ahead by five strokes and now they can't get back on the course. I've got to do something right now or nothing matters. I get the phone call when the child is going to commit suicide, I've got to do something. In 29 years, I'm very grateful to tell you I've never lost one. It doesn't mean I won't some day, but I haven't yet. The reason is an understanding of these human needs.

2:52

When I get those calls about performance, that's one thing. How do you make a change? I'm also looking to see what is shaping the person's ability to contribute, to do something beyond themselves. Maybe the real question is, I look at life and say there's two master lessons. One is: there's the science of achievement, which almost everything that's run is mastered amazingly. "How do you take the invisible and make it visible," How do you make your dreams happen? Your business, your contribution to society, money -- whatever, your body, your family.

3:23

The other lesson that is rarely mastered is the art of fulfillment. Because science is easy, right? We know the rules, you write the code and you get the results. Once you know the game, you just up the ante, don't you? But when it comes to fulfillment -- that's an art. The reason is, it's about appreciation and contribution. You can only feel so much by yourself. I've had an interesting laboratory to try to answer the real question how somebody's life changes if you look at them like those people that you've given everything to? Like all the resources they say they need. You gave not a 100-dollar computer, but the best computer. You gave them love, joy, were there to comfort them. Those people very often -- you know some of them -- end up the rest of their life with all this love, education, money and background going in and out of rehab. Some people have been through ultimate pain, psychologically, sexually, spiritually, emotionally abused -- and not always, but often, they become some of the people that contribute the most to society.

4:19

The question we've got to ask ourselves really is, what is it? What is it that shapes us? We live in a therapy culture. Most of us don't do that, but the culture's a therapy culture,

the mindset that we are our past. And you wouldn't be in this room if you bought that, but most of society thinks biography is destiny. The past equals the future. Of course it does if you live there. But what we know and what we have to remind ourselves -- because you can know something intellectually and then not use it, not apply it.

4:47

We've got to remind ourselves that decision is the ultimate power. When you ask people, have you failed to achieve something significant in your life?

4:58

Say, "Aye." Audience: Aye.

5:00

TR: Thanks for the interaction on a high level there.

5:03

But if you ask people, why didn't you achieve something? Somebody who's working for you, or a partner, or even yourself. When you fail to achieve, what's the reason people say? **What do they tell you? Didn't have the -- Didn't have the knowledge, didn't have the money, didn't have the time, didn't have the technology. I didn't have the right manager.**

5:24

Al Gore: Supreme Court. TR: The Supreme Court.

5:26

(Laughter)

5:28

(Applause) (Cheering) (Applause continues)

5:43

TR: And --

5:44

(Applause)

5:47

What do all those, including the Supreme Court, have in common? (Laughter) They are a claim to you missing resources, and they may be accurate. You may not have the money, or the Supreme Court, but that is not the defining factor. (Applause) (Laughter) And you correct me if I'm wrong. The defining factor is never resources; it's resourcefulness. And what I mean specifically, rather than just some phrase, is if you have emotion, human emotion, something that I experienced from you the day before yesterday at a level that is as profound as I've ever experienced and I believe with that emotion you would have beat his ass and won. Audience: Yeah! (Applause) (Cheering)

6:34

How easy for me to tell him what he should do. (Laughter) Idiot, Robbins. But I know when we watched the debate at that time, there were emotions that blocked people's ability to get this man's intellect and capacity. And the way that it came across to some people on that day -- because I know people that wanted to vote in your direction and

didn't, and I was upset. But there was emotion there. Do you know what I'm talking about?

7:02

Say, "Aye." Audience: Aye. TR: So, emotion is it. And if we get the right emotion, we can get ourselves to do anything. If you're creative, playful, fun enough, can you get through to anybody, yes or no?

7:12

If you don't have the money, but you're creative and determined, you find the way. This is the ultimate resource. But this is not the story that people tell us. They tell us a bunch of different stories. They tell us we don't have the resources, but ultimately, if you take a look here, they say, what are all the reasons they haven't accomplished that? He's broken my pattern, that son-of-a-bitch. (Laughter) But I appreciated the energy, I'll tell you that. (Laughter)

7:39

What determines your resources? We've said decisions shape destiny, which is my focus here. **If decisions shape destiny, what determines it is three decisions. What will you focus on? You have to decide what you're going to focus on.** Consciously or unconsciously. the minute you decide to focus, you must give it a meaning, and that meaning produces emotion. Is this the end or the beginning? Is God punishing me or rewarding me, or is this the roll of the dice? An emotion creates what we're going to do, or the action.

8:06

So, think about your own life, the decisions that have shaped your destiny. And that sounds really heavy, but in the last five or 10 years, have there been some decisions that if you'd made a different decision, your life would be completely different? How many can think about it? Better or worse. Say, "Aye."

8:21

Audience: Aye.

8:22

So the bottom line is, maybe it was where to go to work, and you met the love of your life there, a career decision. I know the Google geniuses I saw here -- I mean, I understand that their decision was to sell their technology. What if they made that decision versus to build their own culture? How would the world or their lives be different, their impact? The history of our world is these decisions. **When a woman stands up and says, "No, I won't go to the back of the bus." She didn't just affect her life. That decision shaped our culture. Or someone standing in front of a tank. Or being in a position like Lance Armstrong, "You've got testicular cancer." That's pretty tough for any male, especially if you ride a bike.** (Laughter) You've got it in your brain; you've got it in your lungs. But what was his decision of what to focus on? Different than most people. What did it mean? It wasn't the end; it was the beginning. He goes off and wins seven championships he never once won before the cancer, because he got emotional fitness, psychological strength. That's the difference in human beings that I've seen of the three million I've been around.

9:20

In my lab, I've had three million people from 80 countries over the last 29 years. And after a while, patterns become obvious. You see that South America and Africa may be connected in a certain way, right? Others say, "Oh, that sounds ridiculous." It's simple. So, what shaped Lance? What shapes you? Two invisible forces. Very quickly. One: state. We all have had times, you did something, and after, you thought to yourself, "I can't believe I said or did that, that was so stupid." Who's been there? Say, "Aye."

Audience: Aye.

9:51

Or after you did something, you go, "That was me!"

9:53

(Laughter)

9:55

It wasn't your ability; it was your state. Your model of the world is what shapes you long term. Your model of the world is the filter. That's what's shaping us. It makes people make decisions. To influence somebody, we need to know what already influences them. It's made up of three parts. First, what's your target? What are you after? It's not your desires. You can get your desires or goals. Who has ever got a goal or desire and thought, is this all there is?

10:19

Say, "Aye." Audience: Aye.

10:21

It's needs we have. I believe there are six human needs. Second, once you know what the target that's driving you is and you uncover it for the truth -- you don't form it -- then you find out what's your map, what's the belief systems that tell you how to get those needs. Some people think the way to get them is to destroy the world, some people, to build, create something, love someone. There's the fuel you pick. So very quickly, six needs.

10:43

Let me tell you what they are. First one: certainty. These are not goals or desires, these are universal. Everyone needs certainty they can avoid pain and at least be comfortable. Now, how do you get it? Control everybody? Develop a skill? Give up? Smoke a cigarette? And if you got totally certain, ironically, even though we need that -- you're not certain about your health, or your children, or money. If you're not sure the ceiling will hold up, you won't listen to any speaker. While we go for certainty differently, if we get total certainty, we get what? What do you feel if you're certain? You know what will happen, when and how it will happen, what would you feel? Bored out of your minds. So, God, in Her infinite wisdom, gave us a second human need, which is uncertainty. We need variety. We need surprise. How many of you here love surprises? Say, "Aye."

11:26

Audience: Aye.

11:27

TR: Bullshit. You like the surprises you want. The ones you don't want, you call problems, but you need them. So, variety is important. Have you ever rented a video or

a film that you've already seen? Who's done this? Get a fucking life. (Laughter) Why are you doing it? You're certain it's good because you read or saw it before, but you're hoping it's been long enough you've forgotten, and there's variety.

11:50

Third human need, critical: significance. We all need to feel important, special, unique. You can get it by making more money or being more spiritual. You can do it by getting yourself in a situation where you put more tattoos and earrings in places humans don't want to know. Whatever it takes. The fastest way to do this, if you have no background, no culture, no belief and resources or resourcefulness, is violence. If I put a gun to your head and I live in the 'hood, instantly I'm significant. Zero to 10. How high? 10. How certain am I that you're going to respond to me? 10. How much uncertainty? Who knows what's going to happen next? Kind of exciting. Like climbing up into a cave and doing that stuff all the way down there. Total variety and uncertainty. And it's significant, isn't it? So you want to risk your life for it. So that's why violence has always been around and will be around unless we have a consciousness change as a species. You can get significance a million ways, but to be significant, you've got to be unique and different.

12:41

Here's what we really need: connection and love, fourth need. We all want it; most settle for connection, love's too scary. Who here has been hurt in an intimate relationship? If you don't raise your hand, you've had other shit, too. And you're going to get hurt again. Aren't you glad you came to this positive visit? Here's what's true: we need it. We can do it through intimacy, friendship, prayer, through walking in nature. If nothing else works for you, don't get a cat, get a dog, because if you leave for two minutes, it's like you've been gone six months, when you come back 5 minutes later.

13:12

These first four needs, every human finds a way to meet. Even if you lie to yourself, you need to have split personalities. I call the first four needs the needs of the personality. The last two are the needs of the spirit. And this is where fulfillment comes. You won't get it from the first four. You'll figure a way, smoke, drink, do whatever, meet the first four. But number five, you must grow. We all know the answer. If you don't grow, you're what? If a relationship or business is not growing, if you're not growing, doesn't matter how much money or friends you have, how many love you, you feel like hell. And I believe the reason we grow is so we have something to give of value.

13:48

Because the sixth need is to contribute beyond ourselves. Because we all know, corny as that sounds, the secret to living is giving. We all know life is not about me, it's about we. This culture knows that, this room knows that. It's exciting. When you see Nicholas talking about his \$100 computer, the most exciting thing is: here's a genius, but he's got a calling now. You can feel the difference in him, and it's beautiful. And that calling can touch other people. My life was touched because when I was 11 years old, Thanksgiving, no money, no food, we were not going to starve, but my father was totally messed up, my mom was letting him know how bad he messed up, and somebody came to the door and delivered food. My father made three decisions, I know what they were, briefly. His focus was "This is charity. What does it mean? I'm worthless. What do I have to do? Leave my family," which he did. It was one of the

most painful experiences of life. My three decisions gave me a different path. I set focus on "There's food." What a concept! (Laughter)

14:43

But this is what changed my life, shaped me as a human being. Somebody's gift, I don't even know who it is. My father always said, "No one gives a shit." And now somebody I don't know, they're not asking for anything, just giving us food, looking out for us. It made me believe this: that strangers care. And that made me decide, if strangers care about me and my family, I care about them. I'm going to do something to make a difference. So when I was 17, I went out on Thanksgiving, it was my target for years to have enough money to feed two families. The most fun and moving thing I ever did in my life. Next year, I did four, then eight. I didn't tell anybody what I was doing, I wasn't doing it for brownie points. But after eight, I thought I could use some help.

15:22

So I went out, got my friends involved, then I grew companies, got 11, and I built the foundation. 18 years later, I'm proud to tell you last year we fed 2 million people in 35 countries through our foundation. All during the holidays, Thanksgiving, Christmas, in different countries around the world. (Applause) Thank you. I don't tell you that to brag, but because I'm proud of human beings because they get excited to contribute once they've had the chance to experience it, not talk about it.

15:49

So, finally -- I'm about out of time. The target that shapes you -- Here's what's different about people. We have the same needs. But are you a certainty freak, is that what you value most, or uncertainty? This man couldn't be a certainty freak if he climbed through those caves. Are you driven by significance or love? We all need all six, but what your lead system is tilts you in a different direction. And as you move in a direction, you have a destination or destiny. The second piece is the map. The operating system tells you how to get there, and some people's map is, "I'm going to save lives even if I die for other people," and they're a fireman, and somebody else says, "I'm going to kill people to do it." They're trying to meet the same needs of significance. They want to honor God or honor their family. But they have a different map.

16:33

And there are seven different beliefs; I can't go through them, because I'm done. The last piece is emotion. One of the parts of the map is like time. Some people's idea of a long time is 100 years. Somebody else's is three seconds, which is what I have. And the last one I've already mentioned that fell to you. If you've got a target and a map -- I can't use Google because I love Macs, and they haven't made it good for Macs yet. So if you use MapQuest -- how many have made this fatal mistake of using it? You use this thing and you don't get there. Imagine if your beliefs guarantee you can never get to where you want to go. (Laughter)

17:04

The last thing is emotion. Here's what I'll tell you about emotion. There are 6,000 emotions that we have words for in the English language, which is just a linguistic representation that changes by language. But if your dominant emotions -- If I have 20,000 people or 1,000 and I have them write down all the emotions that they experience in an average week, and I give them as long as they need, and on one side they write empowering emotions, the other's disempowering, guess how many emotions they experience? Less than 12. And half of those make them feel like shit. They have

six good feelings. Happy, happy, excited, oh shit, frustrated, frustrated, overwhelmed, depressed. How many of you know somebody who, no matter what happens, finds a way to get pissed off? (Laughter) Or no matter what happens, they find a way to be happy or excited. How many of you know somebody like this?

17:51

When 9/11 happened, I'll finish with this, I was in Hawaii. I was with 2,000 people from 45 countries, we were translating four languages simultaneously for a program I was conducting, for a week. The night before was called Emotional Mastery. I got up, had no plan for this, and I said -- we had fireworks, I do crazy shit, fun stuff, and at the end, I stopped. I had this plan, but I never know what I'm going to say. And all of a sudden, I said, "When do people really start to live? When they face death." And I went through this whole thing about, if you weren't going to get off this island, if nine days from now, you were going to die, who would you call, what would you say, what would you do? That night is when 9/11 happened. One woman had come to the seminar, and when she came there, her previous boyfriend had been kidnapped and murdered. Her new boyfriend wanted to marry her, and she said no.

18:37

He said, "If you go to that Hawaii thing, it's over with us." She said, "It's over." When I finished that night, she called him and left a message at the top of the World Trade Center where he worked, saying, "I love you, I want you to know I want to marry you. It was stupid of me." She was asleep, because it was 3 a.m. for us, when he called her back, and said, "Honey, I can't tell you what this means. I don't know how to tell you this, but you gave me the greatest gift, because I'm going to die." And she played the recording for us in the room. She was on Larry King later. And he said, "You're probably wondering how on Earth this could happen to you twice. All I can say is this must be God's message to you. From now on, every day, give your all, love your all. Don't let anything ever stop you." She finishes, and a man stands up, and he says, "I'm from Pakistan, I'm a Muslim. I'd love to hold your hand and say I'm sorry, but frankly, this is retribution." I can't tell you the rest, because I'm out of time. (Laughter) Are you sure? (Laughter) 10 seconds! (Laughter and applause)

19:48

10 seconds, I want to be respectful. All I can tell you is, I brought this man on stage with a man from New York who worked in the World Trade Center, because I had about 200 New Yorkers there. More than 50 lost their entire companies, friends, marking off their Palm Pilots. One financial trader, woman made of steel, bawling -- 30 friends crossing off that all died. And I said, "What are we going to focus on? What does this mean and what are we going to do?"

20:12

And I got the group to focus on: if you didn't lose somebody today, your focus is going to be how to serve somebody else. Then one woman stood up and was so angry, screaming and yelling. I found out she wasn't from New York, she's not an American, doesn't know anybody here. I asked, "Do you always get angry?" She said, "Yes." Guilty people got guilty, sad people got sad. I took these two men and I did an indirect negotiation. Jewish man with family in the occupied territory, someone in New York who would have died if he was at work that day, and this man who wanted to be a terrorist, and I made it very clear. This integration is on a film, which I'd be happy to send you, instead of my verbalization, but the two of them not only came together and

changed their beliefs and models of the world, but worked together to bring, for almost four years now, through various mosques and synagogues, the idea of how to create peace. And he wrote a book, called "My Jihad, My Way of Peace." So, transformation can happen.

21:03

My invitation to you is: explore your web, the web in here -- the needs, the beliefs, the emotions that are controlling you, for two reasons: so there's more of you to give, and achieve, too, but I mean give, because that's what's going to fill you up. And secondly, so you can appreciate -- not just understand, that's intellectual, that's the mind, but appreciate what's driving other people. It's the only way our world's going to change. God bless you, thank you. I hope this was of service. (Applause)

Talk 9, Dan Pink – The puzzle of motivation

2000 van 2765 woorden = 72% gecodeerde passages

0:12

I need to make a confession at the outset here. A little over 20 years ago, I did something that I regret, something that I'm not particularly proud of. Something that, in many ways, I wish no one would ever know, but here I feel kind of obliged to reveal. (Laughter) In the late 1980s, in a moment of youthful indiscretion, I went to law school. (Laughter)

0:44

In America, law is a professional degree: after your university degree, you go on to law school. When I got to law school, I didn't do very well. To put it mildly, I didn't do very well. I, in fact, graduated in the part of my law school class that made the top 90% possible. (Laughter) Thank you. I never practiced law a day in my life; I pretty much wasn't allowed to. (Laughter)

1:18

But today, against my better judgment, against the advice of my own wife, I want to try to dust off some of those legal skills -- what's left of those legal skills. I don't want to tell you a story. I want to make a case. I want to make a hard-headed, evidence-based, dare I say lawyerly case, for rethinking how we run our businesses.

1:46

So, ladies and gentlemen of the jury, **take a look at this. This is called the candle problem. Some of you might know it. It's created in 1945 by a psychologist named Karl Duncker. He created this experiment that is used in many other experiments in behavioral science. And here's how it works. Suppose I'm the experimenter. I bring you into a room. I give you a candle, some thumbtacks and some matches. And I say to you, "Your job is to attach the candle to the wall so the wax doesn't drip onto the table." Now what would you do?**

2:20

Many people begin trying to thumbtack the candle to the wall. Doesn't work. I saw somebody kind of make the motion over here -- some people have a great idea where they light the match, melt the side of the candle, try to adhere it to the wall. It's an awesome idea. Doesn't work. And eventually, after five or ten minutes, most people figure out the solution, which you can see here. The key is to overcome what's called

functional fixedness. You look at that box and you see it only as a receptacle for the tacks. But it can also have this other function, as a platform for the candle. The candle problem.

2:59

I want to tell you about an experiment using the candle problem, done by a scientist named Sam Glucksberg, who is now at Princeton University, US. This shows the power of incentives. He gathered his participants and said: "I'm going to time you, how quickly you can solve this problem." To one group he said, "I'm going to time you to establish norms, averages for how long it typically takes someone to solve this sort of problem."

3:25

To the second group he offered rewards. He said, "If you're in the top 25% of the fastest times, you get five dollars. If you're the fastest of everyone we're testing here today, you get 20 dollars." Now this is several years ago, adjusted for inflation, it's a decent sum of money for a few minutes of work. It's a nice motivator. Question:

3:48

How much faster did this group solve the problem? Answer: It took them, on average, three and a half minutes longer. 3.5 min longer. This makes no sense, right? I mean, I'm an American. I believe in free markets. That's not how it's supposed to work, right? (Laughter) If you want people to perform better, you reward them. Right? Bonuses, commissions, their own reality show. Incentivize them. That's how business works. But that's not happening here. You've got an incentive designed to sharpen thinking and accelerate creativity, and it does just the opposite. It dulls thinking and blocks creativity. What's interesting about this experiment

4:34

is that it's not an aberration. This has been replicated over and over again for nearly 40 years. These contingent motivators -- if you do this, then you get that -- work in some circumstances. But for a lot of tasks, they actually either don't work or, often, they do harm. This is one of the most robust findings in social science, and also one of the most ignored.

5:04

I spent the last couple of years looking at the science of human motivation, particularly the dynamics of extrinsic motivators and intrinsic motivators. And I'm telling you, it's not even close. **If you look at the science, there is a mismatch between what science knows and what business does. What's alarming here is that our business operating system -- think of the set of assumptions and protocols beneath our businesses, how we motivate people, how we apply our human resources-- it's built entirely around these extrinsic motivators, around carrots and sticks. That's actually fine for many kinds of 20th century tasks. But for 21st century tasks, that mechanistic, reward-and-punishment approach doesn't work, often doesn't work, and often does harm. Let me show you.**

5:51

Glucksberg did another similar experiment, he presented the problem in a slightly different way, like this up here. Attach the candle to the wall so the wax doesn't drip onto the table. Same deal. You: we're timing for norms. You: we're incentivizing. What happened this time? This time, the incentivized group kicked the other group's butt. Why? Because when the tacks are out of the box, it's pretty easy isn't it? (Laughter)

6:26

If-then rewards work really well for those sorts of tasks, where there is a simple set of rules and a clear destination to go to. Rewards, by their very nature, narrow our focus, concentrate the mind; that's why they work in so many cases. So, for tasks like this, a narrow focus, where you just see the goal right there, zoom straight ahead to it, they work really well. But for the real candle problem, you don't want to be looking like this. The solution is on the periphery. You want to be looking around. That reward actually narrows our focus and restricts our possibility.

7:03

Let me tell you why this is so important. In western Europe, in many parts of Asia, in North America, in Australia, white-collar workers are doing less of this kind of work, and more of this kind of work. That routine, rule-based, left-brain work -- certain kinds of accounting, financial analysis, computer programming-- has become fairly easy to outsource, fairly easy to automate. Software can do it faster. Low-cost providers can do it cheaper. So what really matters are the more right-brained creative, conceptual kinds of abilities.

7:44

Think about your own work. Think about your own work. Are the problems that you face, or even the problems we've been talking about here, do they have a clear set of rules, and a single solution? No. The rules are mystifying. The solution, if it exists at all, is surprising and not obvious. Everybody in this room is dealing with their own version of the candle problem. And for candle problems of any kind, in any field, those if-then rewards, the things around which we've built so many of our businesses, don't work!

8:26

It makes me crazy. And here's the thing. This is not a feeling. Okay? I'm a lawyer; I don't believe in feelings. This is not a philosophy. I'm an American; I don't believe in philosophy. (Laughter) This is a fact -- or, as we say in my hometown of Washington, D.C., a true fact. (Laughter) (Applause) Let me give you an example. Let me marshal the evidence here. I'm not telling a story, I'm making a case.

9:05

Ladies and gentlemen of the jury, some evidence: Dan Ariely, one of the great economists of our time, he and three colleagues did a study of some MIT students. They gave these MIT students a bunch of games, games that involved creativity, and motor skills, and concentration. And they offered them, for performance, three levels of rewards: small reward, medium reward, large reward. If you do really well you get the large reward, on down. What happened? As long as the task involved only mechanical skill bonuses worked as they would be expected: the higher the pay, the better the performance. Okay? But once the task called for even rudimentary cognitive skill, a larger reward led to poorer performance.

9:56

Then they said, "Let's see if there's any cultural bias here. Let's go to Madurai, India and test it." Standard of living is lower. In Madurai, a reward that is modest in North American standards, is more meaningful there. Same deal. A bunch of games, three levels of rewards. What happens? People offered the medium level of rewards did no better than people offered the small rewards. But this time, people offered the highest rewards, they did the worst of all. In eight of the nine tasks we examined across three experiments, higher incentives led to worse performance.

10:36

Is this some kind of touchy-feely socialist conspiracy going on here? No, these are economists from MIT, from Carnegie Mellon, from the University of Chicago. Do you know who sponsored this research? The Federal Reserve Bank of the United States. That's the American experience.

10:56

Let's go across the pond to the London School of Economics, LSE, London School of Economics, alma mater of eleven Nobel Laureates in economics. Training ground for great economic thinkers like George Soros, and Friedrich Hayek, and Mick Jagger. (Laughter) Last month, just last month, economists at LSE looked at 51 studies of pay-for-performance plans, inside of companies. Here's what they said: "We find that financial incentives can result in a negative impact on overall performance."

11:31

There is a mismatch between what science knows and what business does. And what worries me, as we stand here in the rubble of the economic collapse, is that too many organizations are making their decisions, their policies about talent and people, based on assumptions that are outdated, unexamined, and rooted more in folklore than in science. And if we really want to get out of this economic mess, if we really want high performance on those definitional tasks of the 21st century, the solution is not to do more of the wrong things, to entice people with a sweeter carrot, or threaten them with a sharper stick. We need a whole new approach.

12:17

The good news is that the scientists who've been studying motivation have given us this new approach. It's built much more around intrinsic motivation. Around the desire to do things because they matter, because we like it, they're interesting, or part of something important. And to my mind, that new operating system for our businesses revolves around three elements: autonomy, mastery and purpose. Autonomy: the urge to direct our own lives. Mastery: the desire to get better and better at something that matters. Purpose: the yearning to do what we do in the service of something larger than ourselves. These are the building blocks of an entirely new operating system for our businesses.

12:58

I want to talk today only about autonomy. In the 20th century, we came up with this idea of management. Management did not emanate from nature. Management is not a tree, it's a television set. Somebody invented it. It doesn't mean it's going to work forever. Management is great. Traditional notions of management are great if you want compliance. But if you want engagement, self-direction works better.

13:24

Some examples of some kind of radical notions of self-direction. You don't see a lot of it, but you see the first stirrings of something really interesting going on, what it means is paying people adequately and fairly, absolutely -- getting the issue of money off the table, and then giving people lots of autonomy. Some examples.

13:44

How many of you have heard of the company Atlassian? It looks like less than half. (Laughter) Atlassian is an Australian software company. And they do something incredibly cool. A few times a year they tell their engineers, "Go for the next 24 hours

and work on anything you want, as long as it's not part of your regular job. Work on anything you want." Engineers use this time to come up with a cool patch for code, come up with an elegant hack. Then they present all of the stuff that they've developed to their teammates, to the rest of the company, in this wild and woolly all-hands meeting at the end of the day. Being Australians, everybody has a beer.

14:25

They call them FedEx Days. Why? Because you have to deliver something overnight. It's pretty; not bad. It's a huge trademark violation, but it's pretty clever. (Laughter) That one day of intense autonomy has produced a whole array of software fixes that might never have existed.

14:45

It's worked so well that Atlassian has taken it to the next level with 20% time -- done, famously, at Google -- where engineers can spend 20% of their time working on anything they want. They have autonomy over their time, their task, their team, their technique. Radical amounts of autonomy. And at Google, as many of you know, about half of the new products in a typical year are birthed during that 20% time: things like Gmail, Orkut, Google News.

15:13

Let me give you an even more radical example of it: **something called the Results Only Work Environment (the ROWE), created by two American consultants, in place at a dozen companies around North America. In a ROWE people don't have schedules. They show up when they want. They don't have to be in the office at a certain time, or any time. They just have to get their work done. How they do it, when they do it, where they do it, is totally up to them. Meetings in these kinds of environments are optional.**

15:45

What happens? Almost across the board, productivity goes up, worker engagement goes up, worker satisfaction goes up, turnover goes down. Autonomy, mastery and purpose, the building blocks of a new way of doing things. Some of you might look at this and say, "Hmm, that sounds nice, but it's Utopian." And I say, "Nope. I have proof."

16:11

The mid-1990s, Microsoft started an encyclopedia called Encarta. They had deployed all the right incentives, They paid professionals to write and edit thousands of articles. Well-compensated managers oversaw the whole thing to make sure it came in on budget and on time. A few years later, another encyclopedia got started. Different model, right? Do it for fun. No one gets paid a cent, or a euro or a yen. Do it because you like to do it.

16:42

Just 10 years ago, if you had gone to an economist, anywhere, "Hey, I've got these two different models for creating an encyclopedia. If they went head to head, who would win?" 10 years ago you could not have found a single sober economist anywhere on planet Earth who would have predicted the Wikipedia model.

17:01

This is the titanic battle between these two approaches. This is the Ali-Frazier of motivation, right? This is the Thrilla in Manila. Intrinsic motivators versus extrinsic motivators. Autonomy, mastery and purpose, versus carrot and sticks, and who wins? Intrinsic motivation, autonomy, mastery and purpose, in a knockout. Let me wrap up.

17:23

There is a mismatch between what science knows and what business does. Here is what science knows. One: Those 20th century rewards, those motivators we think are a natural part of business, do work, but only in a surprisingly narrow band of circumstances. Two: Those if-then rewards often destroy creativity. Three: The secret to high performance isn't rewards and punishments, but that unseen intrinsic drive-- the drive to do things for their own sake. The drive to do things cause they matter.

17:52

And here's the best part. We already know this. The science confirms what we know in our hearts. So, if we repair this mismatch between science and business, if we bring our motivation, notions of motivation into the 21st century, if we get past this lazy, dangerous, ideology of carrots and sticks, we can strengthen our businesses, we can solve a lot of those candle problems, and maybe, maybe -- we can change the world. I rest my case. (Applause)

Talk 10, David Gallo - Underwater astonishments

760 van 935 woorden = 81% gecodeerde passages

0:11

We're going to go on a dive to the deep sea, and anyone that's had that lovely opportunity knows that for about two and half hours on the way down, it's a perfectly positively pitch-black world. And we used to see the most mysterious animals out the window that you couldn't describe: these blinking lights -- a world of bioluminescence, like fireflies. Dr. Edith Widder -- she's now at the Ocean Research and Conservation Association -- was able to come up with a camera that could capture some of these incredible animals, and that's what you're seeing here on the screen.

0:42

That's all bioluminescence. Like I said: just like fireflies. There's a flying turkey under a tree. (Laughter) I'm a geologist by training. But I love that. And you see, some of the bioluminescence they use to avoid being eaten, some they use to attract prey, but all of it, from an artistic point of view, is just positively amazing. And a lot of what goes on inside -- There's a fish with glowing eyes, pulsating eyes. Some of the colors are designed to hypnotize, these lovely patterns. And then this last one, one of my favorites, this pinwheel design. Just absolutely amazing, every single dive.

1:20

That's the unknown world, and today we've only explored about 3 percent of what's out there in the ocean. Already we've found the world's highest mountains, the world's deepest valleys, underwater lakes, underwater waterfalls -- a lot of that we shared with you from the stage. And in a place where we thought no life at all, we find more life, we think, and diversity and density than the tropical rainforest, which tells us that we don't know much about this planet at all. There's still 97 percent, and either that 97 percent is empty or just full of surprises.

1:48

But I want to jump up to shallow water now and look at some creatures that are positively amazing. Cephalopods -- head-foots. As a kid I knew them as calamari, mostly. (Laughter) This is an octopus. This is the work of Dr. Roger Hanlon at the

Marine Biological Lab, and it's just fascinating how cephalopods can, with their incredible eyes, sense their surroundings, look at light, look at patterns. Here's an octopus moving across the reef, finds a spot to settle down, curls up and then disappears into the background. Tough thing to do.

2:19

In the next bit, we're going to see a couple squid. Now males, when they fight, if they're really aggressive, they turn white. And these two males are fighting. They do it by bouncing their butts together, which is an interesting concept. Now, here's a male on the left and a female on the right, and the male has managed to split his coloration so the female only always sees the kinder, gentler squid in him. (Laughter) Let's take a look at it again. Watch the coloration: white on the right, brown on the left. He takes a step back, he's keeping off the other males by splitting his body, and comes up on the other side -- Bingo! Now, I'm told that's not just a squid phenomenon with males, but I don't know. (Laughter)

3:04

Cuttlefish. I love cuttlefish. This is a Giant Australian Cuttlefish. And there he is, his droopy little eyes up here. But they can do pretty amazing things, too. Here we're going to see one backing into a crevice, and watch his tentacles -- he just pulls them in, makes them look just like algae. Disappears right into the background. Positively amazing. Here's two males fighting. Once again, they're smart enough, these cephalopods; they know not to hurt each other. But look at the patterns that they can do with their skin. That's an amazing thing.

3:38

Here's an octopus. Sometimes they don't want to be seen when they move, because predators can see them. This guy can make himself look like a rock, and, looking at his environment, can actually slide across the bottom, using the waves and the shadows so he can't be seen. His motion blends right into the background -- the moving rock trick. So, we're learning lots new from the shallow water. Still exploring the deep, but learning lots from the shallow water. There's a good reason why: the shallow water's full of predators -- here's a barracuda -- and if you're an octopus or a cephalopod, you need to really understand how to use your surroundings to hide.

4:15

In the next scene, you're going to see a nice coral bottom. And you see that an octopus would stand out very easily there if you couldn't use your camouflage, use your skin to change color and texture. Here's some algae in the foreground -- and an octopus. Ain't that amazing? Now, Roger spooked him, so he took off in a cloud of ink, and when he lands, the octopus says, "Oh, I've been seen. The best thing to do is to get as big as I can get." That big brown makes his eyespot very big. So, he's bluffing. Let's do it backwards. I thought he was joking when he first showed it to me. I thought it was all graphics. So here it is in reverse. Watch the skin color; watch the skin texture. Just an amazing animal, it can change color and texture to match the surroundings. Watch him blend right into this algae. One, two, three. (Applause) And now he's gone, and so am I. Thank you very much. (Applause)

Talk 11, Dan Gilbert – The surprising science of happiness

3206 van 3838 woorden = 84% gecodeerde passages

0:11

When you have 21 minutes to speak, two million years seems like a really long time. But evolutionarily, two million years is nothing. And yet in two million years, the human brain has nearly tripled in mass, going from the one-and-a-quarter pound brain of our ancestor here, H Habilis, to the almost three-pound meatloaf that everybody here has between their ears. What is it about a big brain that nature was so eager for every one of us to have one?

0:41

Well, it turns out when brains triple in size, they don't just get three times bigger; they gain new structures. And one of the main reasons our brain got so big is because it got a new part, called the "frontal lobe." Particularly, a part called the "pre-frontal cortex." What does a pre-frontal cortex do for you that should justify the entire architectural overhaul of the human skull in the blink of evolutionary time?

1:06

It turns out the pre-frontal cortex does lots of things, but one of the most important things it does is an experience simulator. Pilots practice in flight simulators so that they don't make real mistakes in planes. Human beings have this marvelous adaptation that they can actually have experiences in their heads before they try them out in real life. This is a trick that none of our ancestors could do, and that no other animal can do quite like we can. It's a marvelous adaptation. It's up there with opposable thumbs and standing upright and language as one of the things that got our species out of the trees and into the shopping mall.

1:46

(Laughter)

1:48

All of you have done this. Ben and Jerry's doesn't have liver-and-onion ice cream, and it's not because they whipped some up, tried it and went, "Yuck." It's because, without leaving your armchair, you can simulate that flavor and say "yuck" before you make it.

2:06

Let's see how your experience simulators are working. Let's just run a quick diagnostic before I proceed with the rest of the talk. Here's two different futures that I invite you to contemplate. You can try to simulate them and tell me which one you think you might prefer. One of them is winning the lottery. This is about 314 million dollars. And the other is becoming paraplegic.

2:29

(Laughter)

2:30

Just give it a moment of thought. You probably don't feel like you need a moment of thought.

2:35

Interestingly, there are data on these two groups of people, data on how happy they are. And this is exactly what you expected, isn't it? But these aren't the data. I made these up!

2:47

These are the data. You failed the pop quiz, and you're hardly five minutes into the lecture. Because the fact is that a year after losing the use of their legs, and a year after winning the lotto, lottery winners and paraplegics are equally happy with their lives.

3:04

Don't feel too bad about failing the first pop quiz, because everybody fails all of the pop quizzes all of the time. The research that my laboratory has been doing, that economists and psychologists around the country have been doing, has revealed something really quite startling to us, something we call the "impact bias," which is the tendency for the simulator to work badly. For the simulator to make you believe that different outcomes are more different than in fact they really are.

3:31

From field studies to laboratory studies, we see that winning or losing an election, gaining or losing a romantic partner, getting or not getting a promotion, passing or not passing a college test, on and on, have far less impact, less intensity and much less duration than people expect them to have. This almost floors me -- a recent study showing how major life traumas affect people suggests that if it happened over three months ago, with only a few exceptions, it has no impact whatsoever on your happiness.

4:07

Why? Because happiness can be synthesized. Sir Thomas Brown wrote in 1642, "I am the happiest man alive. I have that in me that can convert poverty to riches, adversity to prosperity. I am more invulnerable than Achilles; fortune hath not one place to hit me." What kind of remarkable machinery does this guy have in his head?

4:30

Well, it turns out it's precisely the same remarkable machinery that all of us have. Human beings have something that we might think of as a "psychological immune system." A system of cognitive processes, largely non-conscious cognitive processes, that help them change their views of the world, so that they can feel better about the worlds in which they find themselves. Like Sir Thomas, you have this machine. Unlike Sir Thomas, you seem not to know it.

5:00

We synthesize happiness, but we think happiness is a thing to be found. Now, you don't need me to give you too many examples of people synthesizing happiness, I suspect. Though I'm going to show you some experimental evidence, you don't have to look very far for evidence.

5:16

As a challenge to myself, since I say this once in a while in lectures, I took a copy of the New York Times and tried to find some instances of people synthesizing happiness. Here are three guys synthesizing happiness. "I am so much better off physically, financially, emotionally, mentally and almost every other way." "I don't have one minute's regret. It was a glorious experience." "I believe it turned out for the best."

5:37

Who are these characters who are so damn happy? The first one is Jim Wright. Some of you are old enough to remember: he was the chairman of the House of Representatives and he resigned in disgrace when this young Republican named Newt Gingrich found out about a shady book deal he had done. He lost everything. The most powerful

Democrat in the country lost everything. He lost his money, he lost his power. What does he have to say all these years later? "I am so much better off physically, financially, mentally and in almost every other way." What other way would there be to be better off? Vegetably? Minerally? Animally? He's pretty much covered them there.

6:10

Moreese Bickham is somebody you've never heard of. Moreese Bickham uttered these words upon being released. He was 78 years old. He'd spent 37 years in a Louisiana State Penitentiary for a crime he didn't commit. [He was ultimately released for good behavior halfway through his sentence.] What did he say about his experience? "I don't have one minute's regret. It was a glorious experience." Glorious! He is not saying, "Well, there were some nice guys. They had a gym." "Glorious," a word we usually reserve for something like a religious experience.

6:39

Harry S. Langerman uttered these words, and he's somebody you might have known but didn't, because in 1949 he read a little article in the paper about a hamburger stand owned by two brothers named McDonalds. And he thought, "That's a really neat idea!" So he went to find them. They said, "We can give you a franchise on this for 3,000 bucks." Harry went back to New York, asked his brother, an investment banker, to loan him the \$3,000, and his brother's immortal words were, "You idiot, nobody eats hamburgers." He wouldn't lend him the money, and of course, six months later Ray Kroc had exactly the same idea. It turns out people do eat hamburgers, and Ray Kroc, for a while, became the richest man in America.

7:15

And then finally -- you know, the best of all possible worlds -- some of you recognize this young photo of Pete Best, who was the original drummer for the Beatles, until they, you know, sent him out on an errand and snuck away and picked up Ringo on a tour. Well, in 1994, when Pete Best was interviewed -- yes, he's still a drummer; yes, he's a studio musician -- he had this to say: "I'm happier than I would have been with the Beatles."

7:39

Okay. There's something important to be learned from these people, and it is the secret of happiness. Here it is, finally to be revealed. First: accrue wealth, power, and prestige, then lose it.

7:49

(Laughter)

7:52

Second: spend as much of your life in prison as you possibly can.

7:55

(Laughter)

7:56

Third: make somebody else really, really rich. And finally: never ever join the Beatles.

8:02

(Laughter)

8:04

OK. Now I, like Ze Frank, can predict your next thought, which is, "Yeah, right." Because when people synthesize happiness, as these gentlemen seem to have done, we all smile at them, but we kind of roll our eyes and say, "Yeah right, you never really wanted the job." "Oh yeah, right. You really didn't have that much in common with her, and you figured that out just about the time she threw the engagement ring in your face."

8:30

We smirk because we believe that synthetic happiness is not of the same quality as what we might call "natural happiness." What are these terms? Natural happiness is what we get when we get what we wanted, and synthetic happiness is what we make when we don't get what we wanted. And in our society, we have a strong belief that synthetic happiness is of an inferior kind. Why do we have that belief? Well, it's very simple. What kind of economic engine would keep churning if we believed that not getting what we want could make us just as happy as getting it?

9:07

With all apologies to my friend Matthieu Ricard, a shopping mall full of Zen monks is not going to be particularly profitable, because they don't want stuff enough.

9:17

(Laughter)

9:18

I want to suggest to you that synthetic happiness is every bit as real and enduring as the kind of happiness you stumble upon when you get exactly what you were aiming for. I'm a scientist, so I'm going to do this not with rhetoric, but by marinating you in a little bit of data.

9:34

Let me first show you an experimental paradigm that is used to demonstrate the synthesis of happiness among regular old folks. And this isn't mine. It's a 50-year-old paradigm called the "free choice paradigm." It's very simple. You bring in, say, six objects, and you ask a subject to rank them from the most to the least liked. In this case, because this experiment uses them, these are Monet prints. So, everybody can rank these Monet prints from the one they like the most, to the one they like the least. Now we give you a choice: "We happen to have some extra prints in the closet. We're going to give you one as your prize to take home. We happen to have number three and number four," we tell the subject. This is a bit of a difficult choice, because neither one is preferred strongly to the other, but naturally, people tend to pick number three because they liked it a little better than number four.

10:23

Sometime later -- it could be 15 minutes; it could be 15 days -- the same stimuli are put before the subject, and the subject is asked to re-rank the stimuli. "Tell us how much you like them now." What happens? Watch as happiness is synthesized. This is the result that has been replicated over and over again. You're watching happiness be synthesized. Would you like to see it again? Happiness! "The one I got is really better than I thought! That other one I didn't get sucks!" That's the synthesis of happiness.

10:52

(Laughter)

10:53

Now, what's the right response to that? "Yeah, right!" Now, here's the experiment we did, and I hope this is going to convince you that "Yeah, right!" was not the right response.

11:05

We did this experiment with a group of patients who had anterograde amnesia. These are hospitalized patients. Most of them have Korsakoff's syndrome, a polyneuritic psychosis. They drank way too much, and they can't make new memories. OK? They remember their childhood, but if you walk in and introduce yourself, and then leave the room, when you come back, they don't know who you are.

11:27

We took our Monet prints to the hospital. And we asked these patients to rank them from the one they liked the most to the one they liked the least. We then gave them the choice between number three and number four. Like everybody else, they said, "Gee, thanks Doc! That's great! I could use a new print. I'll take number three." We explained we would have number three mailed to them. We gathered up our materials and we went out of the room, and counted to a half hour.

11:55

(Laughter)

11:56

Back into the room, we say, "Hi, we're back." The patients, bless them, say, "Ah, Doc, I'm sorry, I've got a memory problem; that's why I'm here. If I've met you before, I don't remember." "Really, you don't remember? I was just here with the Monet prints?" "Sorry, Doc, I just don't have a clue." "No problem, Jim. All I want you to do is rank these for me from the one you like the most to the one you like the least."

12:21

What do they do? Well, let's first check and make sure they're really amnesiac. We ask these amnesiac patients to tell us which one they own, which one they chose last time, which one is theirs. And what we find is amnesiac patients just guess. These are normal controls, where if I did this with you, all of you would know which print you chose. But if I do this with amnesiac patients, they don't have a clue. They can't pick their print out of a lineup.

12:48

Here's what normal controls do: they synthesize happiness. Right? This is the change in liking score, the change from the first time they ranked to the second time they ranked. Normal controls show -- that was the magic I showed you; now I'm showing it to you in graphical form -- "The one I own is better than I thought. The one I didn't own, the one I left behind, is not as good as I thought." Amnesiacs do exactly the same thing. Think about this result.

13:14

These people like better the one they own, but they don't know they own it. "Yeah, right" is not the right response! What these people did when they synthesized happiness

is they really, truly changed their affective, hedonic, aesthetic reactions to that poster. They're not just saying it because they own it, because they don't know they own it.

13:43

Now, when psychologists show you bars, you know that they are showing you averages of lots of people. And yet, all of us have this psychological immune system, this capacity to synthesize happiness, but some of us do this trick better than others. And some situations allow anybody to do it more effectively than other situations do. It turns out that freedom -- the ability to make up your mind and change your mind -- is the friend of natural happiness, because it allows you to choose among all those delicious futures and find the one that you would most enjoy. But freedom to choose, to change and make up your mind, is the enemy of synthetic happiness.

14:27

And I'm going to show you why. Dilbert already knows, of course. You're reading as I'm talking. "Dogbert's tech support. How may I abuse you?" "My printer prints a blank page after every document." "Why complain about getting free paper?" "Free? Aren't you just giving me my own paper?" "Look at the quality of the free paper compared to your lousy regular paper! Only a fool or a liar would say that they look the same!" "Now that you mention it, it does seem a little silkier!" "What are you doing?" "I'm helping people accept the things they cannot change." Indeed.

14:56

The psychological immune system works best when we are totally stuck, when we are trapped. This is the difference between dating and marriage. You go out on a date with a guy, and he picks his nose; you don't go out on another date. You're married to a guy and he picks his nose? He has a heart of gold. Don't touch the fruitcake! You find a way to be happy with what's happened.

15:17

(Laughter)

15:18

Now, what I want to show you is that people don't know this about themselves, and not knowing this can work to our supreme disadvantage.

15:26

Here's an experiment we did at Harvard. We created a black-and-white photography course, and we allowed students to come in and learn how to use a darkroom. So we gave them cameras; they went around campus; they took 12 pictures of their favorite professors and their dorm room and their dog, and all the other things they wanted to have Harvard memories of. They bring us the camera; we make up a contact sheet; they figure out which are the two best pictures; and we now spend six hours teaching them about darkrooms. And they blow two of them up, and they have two gorgeous eight-by-10 glossies of meaningful things to them, and we say, "Which one would you like to give up?" They say, "I have to give one up?" "Yes, we need one as evidence of the class project. So you have to give me one. You have to make a choice. You get to keep one, and I get to keep one."

16:10

Now, there are two conditions in this experiment. In one case, the students are told, "But you know, if you want to change your mind, I'll always have the other one here, and in

the next four days, before I actually mail it to headquarters," -- yeah, "headquarters" -- "I'll be glad to swap it out with you. In fact, I'll come to your dorm room, just give me an email. Better yet, I'll check with you. You ever want to change your mind, it's totally returnable." The other half of the students are told exactly the opposite: "Make your choice, and by the way, the mail is going out, gosh, in two minutes, to England. Your picture will be winging its way over the Atlantic. You will never see it again." Half of the students in each of these conditions are asked to make predictions about how much they're going to come to like the picture that they keep and the picture they leave behind. Other students are just sent back to their little dorm rooms and they are measured over the next three to six days on their liking, satisfaction with the pictures. And look at what we find.

17:09

First of all, here's what students think is going to happen. They think they're going to maybe come to like the picture they chose a little more than the one they left behind, but these are not statistically significant differences. It's a very small increase, and it doesn't much matter whether they were in the reversible or irreversible condition.

17:28

Wrong-o. Bad simulators. Because here's what's really happening. Both right before the swap and five days later, people who are stuck with that picture, who have no choice, who can never change their mind, like it a lot! And people who are deliberating -- "Should I return it? Have I gotten the right one? Maybe this isn't the good one? Maybe I left the good one?" -- have killed themselves. They don't like their picture, and in fact even after the opportunity to swap has expired, they still don't like their picture. Why? Because the [reversible] condition is not conducive to the synthesis of happiness.

18:06

So here's the final piece of this experiment. We bring in a whole new group of naive Harvard students and we say, "You know, we're doing a photography course, and we can do it one of two ways. We could do it so that when you take the two pictures, you'd have four days to change your mind, or we're doing another course where you take the two pictures and you make up your mind right away and you can never change it. Which course would you like to be in?" Duh! 66 percent of the students, two-thirds, prefer to be in the course where they have the opportunity to change their mind. Hello? 66 percent of the students choose to be in the course in which they will ultimately be deeply dissatisfied with the picture. Because they do not know the conditions under which synthetic happiness grows.

18:53

The Bard said everything best, of course, and he's making my point here but he's making it hyperbolically: "'Tis nothing good or bad / But thinking makes it so." It's nice poetry, but that can't exactly be right. Is there really nothing good or bad? Is it really the case that gall bladder surgery and a trip to Paris are just the same thing? That seems like a one-question IQ test. They can't be exactly the same.

19:21

In more turgid prose, but closer to the truth, was the father of modern capitalism, Adam Smith, and he said this. This is worth contemplating: "The great source of both the misery and disorders of human life seems to arise from overrating the difference between one permanent situation and another -- Some of these situations may, no doubt, deserve to be preferred to others, but none of them can deserve to be pursued with that

passionate ardor which drives us to violate the rules either of prudence or of justice, or to corrupt the future tranquility of our minds, either by shame from the remembrance of our own folly, or by remorse for the horror of our own injustice." In other words: yes, some things are better than others.

20:12

We should have preferences that lead us into one future over another. But when those preferences drive us too hard and too fast because we have overrated the difference between these futures, we are at risk. When our ambition is bounded, it leads us to work joyfully. When our ambition is unbounded, it leads us to lie, to cheat, to steal, to hurt others, to sacrifice things of real value. When our fears are bounded, we're prudent, we're cautious, we're thoughtful. When our fears are unbounded and overblown, we're reckless, and we're cowardly.

20:51

The lesson I want to leave you with, from these data, is that our longings and our worries are both to some degree overblown, because we have within us the capacity to manufacture the very commodity we are constantly chasing when we choose experience. Thank you.

Talk 12, Susan Cain – The power of introverts

100 % van de tekst is gecodeerd

0:11

When I was nine years old, I went off to summer camp for the first time. And my mother packed me a suitcase full of books, which to me seemed like a perfectly natural thing to do. Because in my family, reading was the primary group activity. And this might sound antisocial to you, but for us it was really just a different way of being social. You have the animal warmth of your family sitting right next to you, but you are also free to go roaming around the adventureland inside your own mind. And I had this idea that camp was going to be just like this, but better. (Laughter) I had a vision of 10 girls sitting in a cabin cozily reading books in their matching nightgowns.

0:51

(Laughter)

0:53

Camp was more like a keg party without any alcohol. And on the very first day, our counselor gathered us all together and she taught us a cheer that she said we would be doing every day for the rest of the summer to instill camp spirit. And it went like this: "R-O-W-D-I-E, that's the way we spell rowdie. Rowdie, rowdie, let's get rowdie." (Laughter) Yeah. So I couldn't figure out for the life of me why we were supposed to be so rowdy, or why we had to spell this word incorrectly. (Laughter) But I recited a cheer. I recited a cheer along with everybody else. I did my best. And I just waited for the time that I could go off and read my books.

1:43

But the first time that I took my book out of my suitcase, the coolest girl in the bunk came up to me and she asked me, "Why are you being so mellow?" -- mellow, of course, being the exact opposite of R-O-W-D-I-E. And then the second time I tried it,

the counselor came up to me with a concerned expression on her face and she repeated the point about camp spirit and said we should all work very hard to be outgoing.

2:05

And so I put my books away, back in their suitcase, and I put them under my bed, and there they stayed for the rest of the summer. And I felt kind of guilty about this. I felt as if the books needed me somehow, and they were calling out to me and I was forsaking them. But I did forsake them and I didn't open that suitcase again until I was back home with my family at the end of the summer.

2:30

Now, I tell you this story about summer camp. I could have told you 50 others just like it -- all the times that I got the message that somehow my quiet and introverted style of being was not necessarily the right way to go, that I should be trying to pass as more of an extrovert. And I always sensed deep down that this was wrong and that introverts were pretty excellent just as they were. But for years I denied this intuition, and so I became a Wall Street lawyer, of all things, instead of the writer that I had always longed to be -- partly because I needed to prove to myself that I could be bold and assertive too. And I was always going off to crowded bars when I really would have preferred to just have a nice dinner with friends. And I made these self-negating choices so reflexively, that I wasn't even aware that I was making them.

3:18

Now this is what many introverts do, and it's our loss for sure, but it is also our colleagues' loss and our communities' loss. And at the risk of sounding grandiose, it is the world's loss. Because when it comes to creativity and to leadership, we need introverts doing what they do best. A third to a half of the population are introverts -- a third to a half. So that's one out of every two or three people you know. So even if you're an extrovert yourself, I'm talking about your coworkers and your spouses and your children and the person sitting next to you right now -- all of them subject to this bias that is pretty deep and real in our society. We all internalize it from a very early age without even having a language for what we're doing.

4:02

Now, to see the bias clearly, you need to understand what introversion is. It's different from being shy. Shyness is about fear of social judgment. Introversion is more about, how do you respond to stimulation, including social stimulation. So extroverts really crave large amounts of stimulation, whereas introverts feel at their most alive and their most switched-on and their most capable when they're in quieter, more low-key environments. Not all the time -- these things aren't absolute -- but a lot of the time. So the key then to maximizing our talents is for us all to put ourselves in the zone of stimulation that is right for us.

4:40

But now here's where the bias comes in. Our most important institutions, our schools and our workplaces, they are designed mostly for extroverts and for extroverts' need for lots of stimulation. And also we have this belief system right now that I call the new groupthink, which holds that all creativity and all productivity comes from a very oddly gregarious place.

5:05

So if you picture the typical classroom nowadays: When I was going to school, we sat in rows. We sat in rows of desks like this, and we did most of our work pretty autonomously. But nowadays, your typical classroom has pods of desks -- four or five or six or seven kids all facing each other. And kids are working in countless group assignments. Even in subjects like math and creative writing, which you think would depend on solo flights of thought, kids are now expected to act as committee members. And for the kids who prefer to go off by themselves or just to work alone, those kids are seen as outliers often or, worse, as problem cases. And the vast majority of teachers reports believing that the ideal student is an extrovert as opposed to an introvert, even though introverts actually get better grades and are more knowledgeable, according to research. (Laughter)

5:59

Okay, same thing is true in our workplaces. Now, most of us work in open plan offices, without walls, where we are subject to the constant noise and gaze of our coworkers. And when it comes to leadership, introverts are routinely passed over for leadership positions, even though introverts tend to be very careful, much less likely to take outside risks -- which is something we might all favor nowadays. And interesting research by Adam Grant at the Wharton School has found that introverted leaders often deliver better outcomes than extroverts do, because when they are managing proactive employees, they're much more likely to let those employees run with their ideas, whereas an extrovert can, quite unwittingly, get so excited about things that they're putting their own stamp on things, and other people's ideas might not as easily then bubble up to the surface.

6:47

Now in fact, some of our transformative leaders in history have been introverts. I'll give you some examples. Eleanor Roosevelt, Rosa Parks, Gandhi -- all these people described themselves as quiet and soft-spoken and even shy. And they all took the spotlight, even though every bone in their bodies was telling them not to. And this turns out to have a special power all its own, because people could feel that these leaders were at the helm not because they enjoyed directing others and not out of the pleasure of being looked at; they were there because they had no choice, because they were driven to do what they thought was right.

7:22

Now I think at this point it's important for me to say that I actually love extroverts. I always like to say some of my best friends are extroverts, including my beloved husband. And we all fall at different points, of course, along the introvert/extrovert spectrum. Even Carl Jung, the psychologist who first popularized these terms, said that there's no such thing as a pure introvert or a pure extrovert. He said that such a man would be in a lunatic asylum, if he existed at all. And some people fall smack in the middle of the introvert/extrovert spectrum, and we call these people ambiverts. And I often think that they have the best of all worlds. But many of us do recognize ourselves as one type or the other.

8:05

And what I'm saying is that culturally, we need a much better balance. We need more of a yin and yang between these two types. This is especially important when it comes to creativity and to productivity, because when psychologists look at the lives of the most

creative people, what they find are people who are very good at exchanging ideas and advancing ideas, but who also have a serious streak of introversion in them.

8:29

And this is because solitude is a crucial ingredient often to creativity. So Darwin, he took long walks alone in the woods and emphatically turned down dinner-party invitations. Theodor Geisel, better known as Dr. Seuss, he dreamed up many of his amazing creations in a lonely bell tower office that he had in the back of his house in La Jolla, California. And he was actually afraid to meet the young children who read his books for fear that they were expecting him this kind of jolly Santa Claus-like figure and would be disappointed with his more reserved persona. Steve Wozniak invented the first Apple computer sitting alone in his cubicle in Hewlett-Packard where he was working at the time. And he says that he never would have become such an expert in the first place had he not been too introverted to leave the house when he was growing up.

9:16

Now, of course, this does not mean that we should all stop collaborating -- and case in point, is Steve Wozniak famously coming together with Steve Jobs to start Apple Computer -- but it does mean that solitude matters and that for some people it is the air that they breathe. And in fact, we have known for centuries about the transcendent power of solitude. It's only recently that we've strangely begun to forget it. If you look at most of the world's major religions, you will find seekers -- Moses, Jesus, Buddha, Muhammad -- seekers who are going off by themselves alone to the wilderness, where they then have profound epiphanies and revelations that they then bring back to the rest of the community. So, no wilderness, no revelations.

10:05

This is no surprise, though, if you look at the insights of contemporary psychology. It turns out that we can't even be in a group of people without instinctively mirroring, mimicking their opinions. Even about seemingly personal and visceral things like who you're attracted to, you will start aping the beliefs of the people around you without even realizing that that's what you're doing.

10:25

And groups famously follow the opinions of the most dominant or charismatic person in the room, even though there's zero correlation between being the best talker and having the best ideas -- I mean zero. So -- (Laughter) You might be following the person with the best ideas, but you might not. And do you really want to leave it up to chance? Much better for everybody to go off by themselves, generate their own ideas freed from the distortions of group dynamics, and then come together as a team to talk them through in a well-managed environment and take it from there.

11:02

Now if all this is true, then why are we getting it so wrong? Why are we setting up our schools this way, and our workplaces? And why are we making these introverts feel so guilty about wanting to just go off by themselves some of the time? One answer lies deep in our cultural history. Western societies, and in particular the U.S., have always favored the man of action over the "man" of contemplation. But in America's early days, we lived in what historians call a culture of character, where we still, at that point, valued people for their inner selves and their moral rectitude. And if you look at the self-help books from this era, they all had titles with things like "Character, the Grandest Thing in the World." And they featured role models like Abraham Lincoln,

who was praised for being modest and unassuming. Ralph Waldo Emerson called him "A man who does not offend by superiority."

11:58

But then we hit the 20th century, and we entered a new culture that historians call the culture of personality. What happened is we had evolved an agricultural economy to a world of big business. And so suddenly people are moving from small towns to the cities. And instead of working alongside people they've known all their lives, now they are having to prove themselves in a crowd of strangers. So, quite understandably, qualities like magnetism and charisma suddenly come to seem really important. And sure enough, the self-help books change to meet these new needs and they start to have names like "How to Win Friends and Influence People." And they feature as their role models really great salesmen. So that's the world we're living in today. That's our cultural inheritance.

12:44

Now none of this is to say that social skills are unimportant, and I'm also not calling for the abolishing of teamwork at all. The same religions who send their sages off to lonely mountain tops also teach us love and trust. And the problems that we are facing today in fields like science and in economics are so vast and so complex that we are going to need armies of people coming together to solve them working together. But I am saying that the more freedom that we give introverts to be themselves, the more likely that they are to come up with their own unique solutions to these problems.

13:20

So now I'd like to share with you what's in my suitcase today. Guess what? Books. I have a suitcase full of books. Here's Margaret Atwood, "Cat's Eye." Here's a novel by Milan Kundera. And here's "The Guide for the Perplexed" by Maimonides. But these are not exactly my books. I brought these books with me because they were written by my grandfather's favorite authors.

13:54

My grandfather was a rabbi and he was a widower who lived alone in a small apartment in Brooklyn that was my favorite place in the world when I was growing up, partly because it was filled with his very gentle, very courtly presence and partly because it was filled with books. I mean literally every table, every chair in this apartment had yielded its original function to now serve as a surface for swaying stacks of books. Just like the rest of my family, my grandfather's favorite thing to do in the whole world was to read.

14:23

But he also loved his congregation, and you could feel this love in the sermons that he gave every week for the 62 years that he was a rabbi. He would take the fruits of each week's reading and he would weave these intricate tapestries of ancient and humanist thought. And people would come from all over to hear him speak.

14:43

But here's the thing about my grandfather. Underneath this ceremonial role, he was really modest and really introverted -- so much so that when he delivered these sermons, he had trouble making eye contact with the very same congregation that he had been speaking to for 62 years. And even away from the podium, when you called him to say hello, he would often end the conversation prematurely for fear that he was taking up

too much of your time. But when he died at the age of 94, the police had to close down the streets of his neighborhood to accommodate the crowd of people who came out to mourn him. And so these days I try to learn from my grandfather's example in my own way.

15:27

So I just published a book about introversion, and it took me about seven years to write. And for me, that seven years was like total bliss, because I was reading, I was writing, I was thinking, I was researching. It was my version of my grandfather's hours of the day alone in his library. But now all of a sudden my job is very different, and my job is to be out here talking about it, talking about introversion. (Laughter) And that's a lot harder for me, because as honored as I am to be here with all of you right now, this is not my natural milieu.

16:07

So I prepared for moments like these as best I could. I spent the last year practicing public speaking every chance I could get. And I call this my "year of speaking dangerously." (Laughter) And that actually helped a lot. But I'll tell you, what helps even more is my sense, my belief, my hope that when it comes to our attitudes to introversion and to quiet and to solitude, we truly are poised on the brink on dramatic change. I mean, we are. And so I am going to leave you now with three calls for action for those who share this vision.

16:41

Number one: Stop the madness for constant group work. Just stop it. (Laughter) Thank you. (Applause) And I want to be clear about what I'm saying, because I deeply believe our offices should be encouraging casual, chatty cafe-style types of interactions -- you know, the kind where people come together and serendipitously have an exchange of ideas. That is great. It's great for introverts and it's great for extroverts. But we need much more privacy and much more freedom and much more autonomy at work. School, same thing. We need to be teaching kids to work together, for sure, but we also need to be teaching them how to work on their own. This is especially important for extroverted children too. They need to work on their own because that is where deep thought comes from in part.

17:28

Okay, number two: Go to the wilderness. Be like Buddha, have your own revelations. I'm not saying that we all have to now go off and build our own cabins in the woods and never talk to each other again, but I am saying that we could all stand to unplug and get inside our own heads a little more often.

17:50

Number three: Take a good look at what's inside your own suitcase and why you put it there. So extroverts, maybe your suitcases are also full of books. Or maybe they're full of champagne glasses or skydiving equipment. Whatever it is, I hope you take these things out every chance you get and grace us with your energy and your joy. But introverts, you being you, you probably have the impulse to guard very carefully what's inside your own suitcase. And that's okay. But occasionally, just occasionally, I hope you will open up your suitcases for other people to see, because the world needs you and it needs the things you carry.

18:32

So I wish you the best of all possible journeys and the courage to speak softly.

18:37

Thank you very much.

18:39

(Applause)

18:43

Thank you. Thank you.

18:46

(Applause)

Talk 13, Pattie Maes + Pranav Mistry – Meet the SixthSense interaction

761 van 1193 woorden = 64% gecodeerde passages

0:11

I've been intrigued by this question of whether we could evolve or develop a sixth sense -- a sense that would give us seamless access and easy access to meta-information or information that may exist somewhere that may be relevant to help us make the right decision about whatever it is that we're coming across. And some of you may argue, "Well, don't today's cell phones do that already?" But I would say no. When you meet someone here at TED -- and this is the top networking place, of course, of the year -- you don't shake somebody's hand and then say, "Can you hold on for a moment while I take out my phone and Google you?" Or when you go to the supermarket and you're standing there in that huge aisle of different types of toilet papers, you don't take out your cell phone, and open a browser, and go to a website to try to decide which of these different toilet papers is the most ecologically responsible purchase to make.

1:16

So we don't really have easy access to all this relevant information that can just help us make optimal decisions about what to do next and what actions to take. And so my research group at the Media Lab has been developing a series of inventions to give us access to this information in a sort of easy way, without requiring that the user changes any of their behavior. **And I'm here to unveil our latest effort, and most successful effort so far, which is still very much a work in process. I'm actually wearing the device right now and we've sort of cobbled it together with components that are off the shelf -- and that, by the way, only cost 350 dollars at this point in time.**

2:07

I'm wearing a camera, just a simple web cam, a portable, battery-powered projection system with a little mirror. These components communicate to my cell phone in my pocket which acts as the communication and computation device. And in the video here we see my student Pranav Mistry, who's really the genius who's been implementing and designing this whole system. And we see how this system lets him walk up to any surface and start using his hands to interact with the information that is projected in front of him. The system tracks the four significant fingers. In this case, he's wearing simple marker caps that you may recognize. But if you want a more stylish version, you could also paint your nails in different colors.

3:02

And the camera basically tracks these four fingers and recognizes any gestures that he's making so he can just go to, for example, a map of Long Beach, zoom in and out, etc. The system also recognizes iconic gestures such as the "take a picture" gesture, and then takes a picture of whatever is in front of you. And when he then walks back to the Media Lab, he can just go up to any wall and project all the pictures that he's taken, sort through them and organize them, and re-size them, etc., again using all natural gestures. So, some of you most likely were here two years ago and saw the demo by Jeff Han, or some of you may think, "Well, doesn't this look like the Microsoft Surface Table?" And yes, you also interact using natural gestures, both hands, etc. But the difference here is that you can use any surface, you can walk to up to any surface, including your hand, if nothing else is available, and interact with this projected data. The device is completely portable, and can be -- (Applause) (Applause ends)

4:24

So, one important difference is that it's totally mobile. Another even more important difference is that in mass production, this would not cost more tomorrow than today's cell phones and would actually not sort of be a bigger packaging -- could look a lot more stylish than this version that I'm wearing around my neck. But other than letting some of you live out your fantasy of looking as cool as Tom Cruise in "Minority Report," the reason why we're really excited about this device is that it really can act as one of these sixth-sense devices that gives you relevant information about whatever is in front of you. So we see Pranav here going into the supermarket and he's shopping for some paper towels. And, as he picks up a product, the system can recognize the product that he's picking up, using either image recognition or marker technology, and give him the green light or an orange light. He can ask for additional information. So this particular choice here is a particularly good choice, given his personal criteria. Some of you may want the toilet paper with the most bleach in it rather than the most ecologically responsible choice.

5:48

(Laughter)

5:51

If he picks up a book in the bookstore, he can get an Amazon rating -- it gets projected right on the cover of the book. This is Juan's book, our previous speaker, which gets a great rating, by the way, at Amazon. And so, Pranav turns the page of the book and can then see additional information about the book -- reader comments, maybe sort of information by his favorite critic, etc. If he turns to a particular page, he finds an annotation by maybe an expert or a friend of ours that gives him a little bit of additional information about whatever is on that particular page. Reading the newspaper -- it never has to be outdated.

6:34

(Laughter)

6:36

You can get video annotations of the events that you're reading about. You can get the latest sports scores, etc. This is a more controversial one.

6:47

(Laughter)

6:48

As you interact with someone at TED, maybe you can see a word cloud of the tags, the words that are associated with that person in their blog and personal web pages. In this case, the student is interested in cameras, etc. On your way to the airport, if you pick up your boarding pass, it can tell you that your flight is delayed, that the gate has changed, etc. And, if you need to know what the current time is, it's as simple as drawing a watch -- (Laughter) (Applause) on your arm.

7:26

So that's where we're at so far in developing this sixth sense that would give us seamless access to all this relevant information about the things that we may come across. My student Pranav, who's really, like I said, the genius behind this.

7:45

(Applause and cheering) (Applause ends)

8:07

He does deserve a lot of applause, because I don't think he's slept much in the last three months, actually. And his girlfriend is probably not very happy about him either. But it's not perfect yet, it's very much a work in progress. And who knows, maybe in another 10 years we'll be here with the ultimate sixth sense brain implant. Thank you.

8:31

(Applause)

Talk 14, Elizabeth Gilbert – Your elusive creative genius

0:11

I am a writer. Writing books is my profession but it's more than that, of course. It is also my great lifelong love and fascination. And I don't expect that that's ever going to change. But, that said, something kind of peculiar has happened recently in my life and in my career, which has caused me to have to recalibrate my whole relationship with this work. And the peculiar thing is that I recently wrote this book, this memoir called "Eat, Pray, Love" which, decidedly unlike any of my previous books, went out in the world for some reason, and became this big, mega-sensation, international bestseller thing. The result of which is that everywhere I go now, people treat me like I'm doomed. Seriously -- doomed, doomed! Like, they come up to me now, all worried, and they say, "Aren't you afraid you're never going to be able to top that? Aren't you afraid you're going to keep writing for your whole life and you're never again going to create a book that anybody in the world cares about at all, ever again?"

1:18

So that's reassuring, you know. But it would be worse, except for that I happen to remember that over 20 years ago, when I was a teenager, when I first started telling people that I wanted to be a writer, I was met with this same sort of fear-based reaction. And people would say, "Aren't you afraid you're never going to have any success? Aren't you afraid the humiliation of rejection will kill you? Aren't you afraid that you're going to work your whole life at this craft and nothing's ever going to come of it and you're going to die on a scrap heap of broken dreams with your mouth filled with bitter ash of failure?" (Laughter) Like that, you know.

1:53

The answer -- the short answer to all those questions is, "Yes." Yes, I'm afraid of all those things. And I always have been. And I'm afraid of many, many more things besides that people can't even guess at, like seaweed and other things that are scary. But, when it comes to writing, the thing that I've been sort of thinking about lately, and wondering about lately, is why? You know, is it rational? Is it logical that anybody should be expected to be afraid of the work that they feel they were put on this Earth to do. And what is it specifically about creative ventures that seems to make us really nervous about each other's mental health in a way that other careers kind of don't do, you know? Like my dad, for example, was a chemical engineer and I don't recall once in his 40 years of chemical engineering anybody asking him if he was afraid to be a chemical engineer, you know? "That chemical-engineering block, John, how's it going?" It just didn't come up like that, you know? But to be fair, chemical engineers as a group haven't really earned a reputation over the centuries for being alcoholic manic-depressives. (Laughter)

3:06

We writers, we kind of do have that reputation, and not just writers, but creative people across all genres, it seems, have this reputation for being enormously mentally unstable. And all you have to do is look at the very grim death count in the 20th century alone, of really magnificent creative minds who died young and often at their own hands, you know? And even the ones who didn't literally commit suicide seem to be really undone by their gifts, you know. Norman Mailer, just before he died, last interview, he said, "Every one of my books has killed me a little more." An extraordinary statement to make about your life's work. But we don't even blink when we hear somebody say this, because we've heard that kind of stuff for so long and somehow we've completely internalized and accepted collectively this notion that creativity and suffering are somehow inherently linked and that artistry, in the end, will always ultimately lead to anguish.

4:04

And the question that I want to ask everybody here today is are you guys all cool with that idea? Are you comfortable with that? Because you look at it even from an inch away and, you know -- I'm not at all comfortable with that assumption. I think it's odious. And I also think it's dangerous, and I don't want to see it perpetuated into the next century. I think it's better if we encourage our great creative minds to live.

4:28

And I definitely know that, in my case -- in my situation -- it would be very dangerous for me to start sort of leaking down that dark path of assumption, particularly given the circumstance that I'm in right now in my career. Which is -- you know, like check it out, I'm pretty young, I'm only about 40 years old. I still have maybe another four decades of work left in me. And it's exceedingly likely that anything I write from this point forward is going to be judged by the world as the work that came after the freakish success of my last book, right? I should just put it bluntly, because we're all sort of friends here now -- it's exceedingly likely that my greatest success is behind me. So Jesus, what a thought! That's the kind of thought that could lead a person to start drinking gin at nine o'clock in the morning, and I don't want to go there. (Laughter) I would prefer to keep doing this work that I love.

5:25

And so, the question becomes, how? And so, it seems to me, upon a lot of reflection, that the way that I have to work now, in order to continue writing, is that I have to create some sort of protective psychological construct, right? I have to sort of find some way to have a safe distance between me, as I am writing, and my very natural anxiety about what the reaction to that writing is going to be, from now on. And, as I've been looking, over the last year, for models for how to do that, I've been sort of looking across time, and I've been trying to find other societies to see if they might have had better and saner ideas than we have about how to help creative people sort of manage the inherent emotional risks of creativity.

6:09

And that search has led me to ancient Greece and ancient Rome. So stay with me, because it does circle around and back. But, ancient Greece and ancient Rome -- people did not happen to believe that creativity came from human beings back then, O.K.? People believed that creativity was this divine attendant spirit that came to human beings from some distant and unknowable source, for distant and unknowable reasons. The Greeks famously called these divine attendant spirits of creativity "daemons." Socrates, famously, believed that he had a daemon who spoke wisdom to him from afar. The Romans had the same idea, but they called that sort of disembodied creative spirit a genius. Which is great, because the Romans did not actually think that a genius was a particularly clever individual. They believed that a genius was this, sort of magical divine entity, who was believed to literally live in the walls of an artist's studio, kind of like Dobby the house elf, and who would come out and sort of invisibly assist the artist with their work and would shape the outcome of that work.

7:16

So brilliant -- there it is, right there, that distance that I'm talking about -- that psychological construct to protect you from the results of your work. And everyone knew that this is how it functioned, right? So the ancient artist was protected from certain things, like, for example, too much narcissism, right? If your work was brilliant, you couldn't take all the credit for it, everybody knew that you had this disembodied genius who had helped you. If your work bombed, not entirely your fault, you know? Everyone knew your genius was kind of lame. (Laughter) And this is how people thought about creativity in the West for a really long time.

7:51

And then the Renaissance came and everything changed, and we had this big idea, and the big idea was, let's put the individual human being at the center of the universe above all gods and mysteries, and there's no more room for mystical creatures who take dictation from the divine. And it's the beginning of rational humanism, and people started to believe that creativity came completely from the self of the individual. And for the first time in history, you start to hear people referring to this or that artist as being a genius, rather than having a genius.

8:21

And I got to tell you, I think that was a huge error. You know, I think that allowing somebody, one mere person to believe that he or she is like, the vessel, you know, like the font and the essence and the source of all divine, creative, unknowable, eternal mystery is just a smidge too much responsibility to put on one fragile, human psyche. It's like asking somebody to swallow the sun. It just completely warps and distorts egos,

and it creates all these unmanageable expectations about performance. And I think the pressure of that has been killing off our artists for the last 500 years.

8:58

And, if this is true, and I think it is true, the question becomes, what now? Can we do this differently? Maybe go back to some more ancient understanding about the relationship between humans and the creative mystery. Maybe not. Maybe we can't just erase 500 years of rational humanistic thought in one 18 minute speech. And there's probably people in this audience who would raise really legitimate scientific suspicions about the notion of, basically fairies who follow people around rubbing fairy juice on their projects and stuff. I'm not, probably, going to bring you all along with me on this.

9:41

But the question that I kind of want to pose is -- you know, why not? Why not think about it this way? Because it makes as much sense as anything else I have ever heard in terms of explaining the utter maddening capriciousness of the creative process. A process which, as anybody who has ever tried to make something -- which is to say basically everyone here --- knows does not always behave rationally. And, in fact, can sometimes feel downright paranormal.

10:10

I had this encounter recently where I met the extraordinary American poet Ruth Stone, who's now in her 90s, but she's been a poet her entire life and she told me that when she was growing up in rural Virginia, she would be out working in the fields, and she said she would feel and hear a poem coming at her from over the landscape. And she said it was like a thunderous train of air. And it would come barreling down at her over the landscape. And she felt it coming, because it would shake the earth under her feet. She knew that she had only one thing to do at that point, and that was to, in her words, "run like hell." And she would run like hell to the house and she would be getting chased by this poem, and the whole deal was that she had to get to a piece of paper and a pencil fast enough so that when it thundered through her, she could collect it and grab it on the page. And other times she wouldn't be fast enough, so she'd be running and running, and she wouldn't get to the house and the poem would barrel through her and she would miss it and she said it would continue on across the landscape, looking, as she put it "for another poet." And then there were these times -- this is the piece I never forgot -- she said that there were moments where she would almost miss it, right? So, she's running to the house and she's looking for the paper and the poem passes through her, and she grabs a pencil just as it's going through her, and then she said, it was like she would reach out with her other hand and she would catch it. She would catch the poem by its tail, and she would pull it backwards into her body as she was transcribing on the page. And in these instances, the poem would come up on the page perfect and intact but backwards, from the last word to the first. (Laughter)

11:44

So when I heard that I was like -- that's uncanny, that's exactly what my creative process is like. (Laughter)

11:55

That's not at all what my creative process is -- I'm not the pipeline! I'm a mule, and the way that I have to work is I have to get up at the same time every day, and sweat and labor and barrel through it really awkwardly. But even I, in my mulishness, even I have brushed up against that thing, at times. And I would imagine that a lot of you have too.

You know, even I have had work or ideas come through me from a source that I honestly cannot identify. And what is that thing? And how are we to relate to it in a way that will not make us lose our minds, but, in fact, might actually keep us sane?

12:28

And for me, the best contemporary example that I have of how to do that is the musician Tom Waits, who I got to interview several years ago on a magazine assignment. And we were talking about this, and you know, Tom, for most of his life, he was pretty much the embodiment of the tormented contemporary modern artist, trying to control and manage and dominate these sort of uncontrollable creative impulses that were totally internalized.

12:52

But then he got older, he got calmer, and one day he was driving down the freeway in Los Angeles, and this is when it all changed for him. And he's speeding along, and all of a sudden he hears this little fragment of melody, that comes into his head as inspiration often comes, elusive and tantalizing, and he wants it, it's gorgeous, and he longs for it, but he has no way to get it. He doesn't have a piece of paper, or a pencil, or a tape recorder.

13:16

So he starts to feel all of that old anxiety start to rise in him like, "I'm going to lose this thing, and I'll be haunted by this song forever. I'm not good enough, and I can't do it." And instead of panicking, he just stopped. He just stopped that whole mental process and he did something completely novel. He just looked up at the sky, and he said, "Excuse me, can you not see that I'm driving?" (Laughter) "Do I look like I can write down a song right now? If you really want to exist, come back at a more opportune moment when I can take care of you. Otherwise, go bother somebody else today. Go bother Leonard Cohen."

13:55

And his whole work process changed after that. Not the work, the work was still oftentimes as dark as ever. But the process, and the heavy anxiety around it was released when he took the genie, the genius out of him where it was causing nothing but trouble, and released it back where it came from, and realized that this didn't have to be this internalized, tormented thing. It could be this peculiar, wondrous, bizarre collaboration, kind of conversation between Tom and the strange, external thing that was not quite Tom.

14:25

When I heard that story, it started to shift a little bit the way that I worked too, and this idea already saved me once. It saved me when I was in the middle of writing "Eat, Pray, Love," and I fell into one of those sort of pits of despair that we all fall into when we're working on something and it's not coming and you start to think this is going to be a disaster, the worst book ever written. Not just bad, but the worst book ever written. And I started to think I should just dump this project. But then I remembered Tom talking to the open air and I tried it. So I just lifted my face up from the manuscript and I directed my comments to an empty corner of the room. And I said aloud, "Listen you, thing, you and I both know that if this book isn't brilliant that is not entirely my fault, right? Because you can see that I am putting everything I have into this, I don't have any more than this. If you want it to be better, you've got to show up and do your part of the deal. But if you don't do that, you know what, the hell with it. I'm going to keep writing

anyway because that's my job. And I would please like the record to reflect today that I showed up for my part of the job." (Laughter) Because -- (Applause)

15:35

Because in the end it's like this, OK -- centuries ago in the deserts of North Africa, people used to gather for these moonlight dances of sacred dance and music that would go on for hours and hours, until dawn. They were always magnificent, because the dancers were professionals and they were terrific, right? But every once in a while, very rarely, something would happen, and one of these performers would actually become transcendent. And I know you know what I'm talking about, because I know you've all seen, at some point in your life, a performance like this. It was like time would stop, and the dancer would sort of step through some kind of portal and he wasn't doing anything different than he had ever done, 1,000 nights before, but everything would align. And all of a sudden, he would no longer appear to be merely human. He would be lit from within, and lit from below and all lit up on fire with divinity.

16:25

And when this happened, back then, people knew it for what it was, you know, they called it by its name. They would put their hands together and they would start to chant, "Allah, Allah, Allah, God, God, God." That's God, you know. Curious historical footnote: when the Moors invaded southern Spain, they took this custom with them and the pronunciation changed over the centuries from "Allah, Allah, Allah," to "Olé, olé, olé," which you still hear in bullfights and in flamenco dances. In Spain, when a performer has done something impossible and magic, "Allah, olé, olé, Allah, magnificent, bravo," incomprehensible, there it is -- a glimpse of God. Which is great, because we need that.

17:09

But, the tricky bit comes the next morning, for the dancer himself, when he wakes up and discovers that it's Tuesday at 11 a.m., and he's no longer a glimpse of God. He's just an aging mortal with really bad knees, and maybe he's never going to ascend to that height again. And maybe nobody will ever chant God's name again as he spins, and what is he then to do with the rest of his life? This is hard. This is one of the most painful reconciliations to make in a creative life. But maybe it doesn't have to be quite so full of anguish if you never happened to believe, in the first place, that the most extraordinary aspects of your being came from you. But maybe if you just believed that they were on loan to you from some unimaginable source for some exquisite portion of your life to be passed along when you're finished, with somebody else. And, you know, if we think about it this way, it starts to change everything.

18:06

This is how I've started to think, and this is certainly how I've been thinking in the last few months as I've been working on the book that will soon be published, as the dangerously, frighteningly over-anticipated follow up to my freakish success.

18:20

And what I have to sort of keep telling myself when I get really psyched out about that is don't be afraid. Don't be daunted. Just do your job. Continue to show up for your piece of it, whatever that might be. If your job is to dance, do your dance. If the divine, cockeyed genius assigned to your case decides to let some sort of wonderment be glimpsed, for just one moment through your efforts, then "Olé!" And if not, do your dance anyhow. And "Olé!" to you, nonetheless. I believe this and I feel that we must

teach it. "Olé!" to you, nonetheless, just for having the sheer human love and stubbornness to keep showing up.

19:02

Thank you.

19:04

(Applause)

19:06

Thank you.

19:07

(Applause)

19:10

June Cohen: Olé!

19:12

(Applause)

Talk 15, Hans Rosling – The best stats you've ever seen

100% van de tekst is gecodeerd

0:11

About 10 years ago, I took on the task to teach global development to Swedish undergraduate students. That was after having spent about 20 years together with African institutions studying hunger in Africa, so I was sort of expected to know a little about the world. And I started in our medical university, Karolinska Institute, an undergraduate course called Global Health. But when you get that opportunity, you get a little nervous. I thought, these students coming to us actually have the highest grade you can get in Swedish college systems -- so I thought, maybe they know everything I'm going to teach them about. So I did a pre-test when they came. And one of the questions from which I learned a lot was this one: "Which country has the highest child mortality of these five pairs?"

0:57

I put them together, so that in each pair of country, one has twice the child mortality of the other. And this means that it's much bigger a difference than the uncertainty of the data. I won't put you at a test here, but it's Turkey, which is highest there, Poland, Russia, Pakistan and South Africa. And these were the results of the Swedish students. I did it so I got the confidence interval, which is pretty narrow, and I got happy, of course: a 1.8 right answer out of five possible. That means that there was a place for a professor of international health and for my course. (Laughter)

1:32

But one late night, when I was compiling the report, I really realized my discovery. I have shown that Swedish top students know statistically significantly less about the world than the chimpanzees. (Laughter) Because the chimpanzee would score half right if I gave them two bananas with Sri Lanka and Turkey.

1:55

They would be right half of the cases. But the students are not there. The problem for me was not ignorance; it was preconceived ideas.

2:02

I did also an unethical study of the professors of the Karolinska Institute, that hands out the Nobel Prize in Medicine, and they are on par with the chimpanzee there. (Laughter) This is where I realized that there was really a need to communicate, because the data of what's happening in the world and the child health of every country is very well aware.

2:25

We did this software which displays it like this: every bubble here is a country. This country over here is China. This is India. The size of the bubble is the population, and on this axis here, I put fertility rate. Because my students, what they said when they looked upon the world, and I asked them, "What do you really think about the world?" Well, I first discovered that the textbook was Tintin, mainly. (Laughter) And they said, "The world is still 'we' and 'them.' And 'we' is Western world and 'them' is Third World." "And what do you mean with Western world?" I said. "Well, that's long life and small family, and Third World is short life and large family."

3:09

So this is what I could display here. I put fertility rate here: number of children per woman: one, two, three, four, up to about eight children per woman. We have very good data since 1962 -- 1960 about -- on the size of families in all countries. The error margin is narrow. Here, I put life expectancy at birth, from 30 years in some countries up to about 70 years. And 1962, there was really a group of countries here that was industrialized countries, and they had small families and long lives. And these were the developing countries: they had large families and they had relatively short lives. Now, what has happened since 1962? We want to see the change. Are the students right? Is it still two types of countries? Or have these developing countries got smaller families and they live here? Or have they got longer lives and live up there?

3:57

Let's see. We stopped the world then. This is all U.N. statistics that have been available. Here we go. Can you see there? It's China there, moving against better health there, improving there. All the green Latin American countries are moving towards smaller families. Your yellow ones here are the Arabic countries, and they get longer life, but not larger families. The Africans are the green here. They still remain here. This is India; Indonesia is moving on pretty fast. (Laughter) In the '80s here, you have Bangladesh still among the African countries. But now, Bangladesh -- it's a miracle that happens in the '80s: the imams start to promote family planning. They move up into that corner. And in the '90s, we have the terrible HIV epidemic that takes down the life expectancy of the African countries and all the rest of them move up into the corner, where we have long lives and small family, and we have a completely new world. (Applause) (Applause ends)

5:01

Let me make a comparison directly between the United States of America and Vietnam. 1964. America had small families and long life; Vietnam had large families and short lives. And this is what happens: the data during the war indicate that even with all the death, there was an improvement of life expectancy. By the end of the year, the family planning started in Vietnam; they went for smaller families. And the United States up there is getting for longer life, keeping family size. And in the '80s now, they give up

Communist planning and they go for market economy, and it moves faster even than social life. And today, we have in Vietnam the same life expectancy and the same family size here in Vietnam, 2003, as in United States, 1974, by the end of the war. If we don't look in the data, I think we all underestimate the tremendous change in Asia, which was in social change before we saw the economical change.

6:04

Let's move over to another way here in which we could display the distribution in the world of the income. This is the world distribution of income of people. One dollar, 10 dollars or 100 dollars per day. There's no gap between rich and poor any longer. This is a myth. There's a little hump here. But there are people all the way. And if we look where the income ends up, this is 100 percent the world's annual income. And the richest 20 percent, they take out of that about 74 percent. And the poorest 20 percent, they take about two percent. And this shows that the concept of developing countries is extremely doubtful. We think about aid, like these people here giving aid to these people here. But in the middle, we have most of the world population, and they have now 24 percent of the income.

7:05

We heard it in other forms. And who are these? Where are the different countries? I can show you Africa. This is Africa. 10% the world population, most in poverty. This is OECD. The rich country. The country club of the U.N. And they are over here on this side. Quite an overlap between Africa and OECD. And this is Latin America. It has everything on this Earth, from the poorest to the richest in Latin America. And on top of that, we can put East Europe, we can put East Asia, and we put South Asia. And how did it look like if we go back in time, to about 1970? Then there was more of a hump. And we have most who lived in absolute poverty were Asians. The problem in the world was the poverty in Asia. And if I now let the world move forward, you will see that while population increases, there are hundreds of millions in Asia getting out of poverty and some others getting into poverty, and this is the pattern we have today. And the best projection from the World Bank is that this will happen, and we will not have a divided world. We'll have most people in the middle.

8:17

Of course it's a logarithmic scale here, but our concept of economy is growth with percent. We look upon it as a possibility of percentile increase. If I change this, and take GDP per capita instead of family income, and I turn these individual data into regional data of gross domestic product, and I take the regions down here, the size of the bubble is still the population. And you have the OECD there, and you have sub-Saharan Africa there, and we take off the Arab states there, coming both from Africa and from Asia, and we put them separately, and we can expand this axis, and I can give it a new dimension here, by adding the social values there, child survival. Now I have money on that axis, and I have the possibility of children to survive there. In some countries, 99.7% of children survive to five years of age; others, only 70. And here, it seems, there is a gap between OECD, Latin America, East Europe, East Asia, Arab states, South Asia and sub-Saharan Africa. The linearity is very strong between child survival and money.

9:28

But let me split sub-Saharan Africa. Health is there and better health is up there. I can go here and I can split sub-Saharan Africa into its countries. And when it burst, the size

of its country bubble is the size of the population. Sierra Leone down there. Mauritius is up there. Mauritius was the first country to get away with trade barriers, and they could sell their sugar -- they could sell their textiles -- on equal terms as the people in Europe and North America.

9:59

There's a huge difference between Africa. And Ghana is here in the middle. In Sierra Leone, humanitarian aid. Here in Uganda, development aid. Here, time to invest; there, you can go for a holiday. It's a tremendous variation within Africa which we rarely often make -- that it's equal everything. I can split South Asia here. India's the big bubble in the middle. But a huge difference between Afghanistan and Sri Lanka. I can split Arab states. How are they? Same climate, same culture, same religion -- huge difference. Even between neighbors. Yemen, civil war. United Arab Emirates, money, which was quite equally and well used. Not as the myth is. And that includes all the children of the foreign workers who are in the country. Data is often better than you think. Many people say data is bad. There is an uncertainty margin, but we can see the difference here: Cambodia, Singapore. The differences are much bigger than the weakness of the data. East Europe: Soviet economy for a long time, but they come out after 10 years very, very differently. And there is Latin America. Today, we don't have to go to Cuba to find a healthy country in Latin America. Chile will have a lower child mortality than Cuba within some few years from now. Here, we have high-income countries in the OECD.

11:21

And we get the whole pattern here of the world, which is more or less like this. And if we look at it, how the world looks, in 1960, it starts to move. This is Mao Tse-tung. He brought health to China. And then he died. And then Deng Xiaoping came and brought money to China, and brought them into the mainstream again. And we have seen how countries move in different directions like this, so it's sort of difficult to get an example country which shows the pattern of the world. But I would like to bring you back to about here, at 1960. I would like to compare South Korea, which is this one, with Brazil, which is this one. The label went away for me here. And I would like to compare Uganda, which is there. And I can run it forward, like this. And you can see how South Korea is making a very, very fast advancement, whereas Brazil is much slower.

12:35

And if we move back again, here, and we put on trails on them, like this, you can see again that the speed of development is very, very different, and the countries are moving more or less in the same rate as money and health, but it seems you can move much faster if you are healthy first than if you are wealthy first. And to show that, you can put on the way of United Arab Emirates. They came from here, a mineral country. They cached all the oil; they got all the money; but health cannot be bought at the supermarket. You have to invest in health. You have to get kids into schooling. You have to train health staff. You have to educate the population. And Sheikh Zayed did that in a fairly good way. In spite of falling oil prices, he brought this country up here. So we've got a much more mainstream appearance of the world, where all countries tend to use their money better than they used in the past. Now, this is, more or less, if you look at the average data of the countries -- they are like this.

13:43

Now that's dangerous, to use average data, because there is such a lot of difference within countries. So if I go and look here, we can see that Uganda today is where South Korea was in 1960. If I split Uganda, there's quite a difference within Uganda. These are the quintiles of Uganda. The richest 20 percent of Ugandans are there. The poorest are down there. If I split South Africa, it's like this. And if I go down and look at Niger, where there was such a terrible famine, lastly, it's like this. The 20 percent poorest of Niger is out here, and the 20 percent richest of South Africa is there, and yet we tend to discuss on what solutions there should be in Africa. Everything in this world exists in Africa. And you can't discuss universal access to HIV [medicine] for that quintile up here with the same strategy as down here. The improvement of the world must be highly contextualized, and it's not relevant to have it on regional level. We must be much more detailed. We find that students get very excited when they can use this.

14:53

And even more, policy makers and the corporate sectors would like to see how the world is changing. Now, why doesn't this take place? Why are we not using the data we have? We have data in the United Nations, in the national statistical agencies and in universities and other non-governmental organizations. Because the data is hidden down in the databases. And the public is there, and the Internet is there, but we have still not used it effectively.

15:19

All that information we saw changing in the world does not include publicly-funded statistics. There are some web pages like this, you know, but they take some nourishment down from the databases, but people put prices on them, stupid passwords and boring statistics. (Laughter)

15:38

And this won't work. (Applause) So what is needed? We have the databases. It's not the new database you need. We have wonderful design tools, and more and more are added up here. So we started a nonprofit venture which, linking data to design, we called Gapminder, from the London Underground, where they warn you, "mind the gap." So we thought Gapminder was appropriate. And we started to write software which could link the data like this. And it wasn't that difficult. It took some person years, and we have produced animations. You can take a data set and put it there. We are liberating U.N. data, some few U.N. organization.

16:19

Some countries accept that their databases can go out on the world, but what we really need is, of course, a search function. A search function where we can copy the data up to a searchable format and get it out in the world. And what do we hear when we go around? I've done anthropology on the main statistical units. Everyone says, "It's impossible. This can't be done. Our information is so peculiar in detail, so that cannot be searched as others can be searched. We cannot give the data free to the students, free to the entrepreneurs of the world." But this is what we would like to see, isn't it? The publicly-funded data is down here. And we would like flowers to grow out on the Net. And one of the crucial points is to make them searchable, and then people can use the different design tool to animate it there. And I have pretty good news for you. I have good news that the present, new Head of U.N. Statistics, he doesn't say it's impossible. He only says, "We can't do it." (Laughter) And that's a quite clever guy, huh? (Laughter)

17:26

So we can see a lot happening in data in the coming years. We will be able to look at income distributions in completely new ways. This is the income distribution of China, 1970. This is the income distribution of the United States, 1970. Almost no overlap. And what has happened? What has happened is this: that China is growing, it's not so equal any longer, and it's appearing here, overlooking the United States. Almost like a ghost, isn't it? (Laughter)

18:02

It's pretty scary. (Laughter) But I think it's very important to have all this information. We need really to see it. And instead of looking at this, I would like to end up by showing the Internet users per 1,000. In this software, we access about 500 variables from all the countries quite easily. It takes some time to change for this, but on the axes, you can quite easily get any variable you would like to have. And the thing would be to get up the databases free, to get them searchable, and with a second click, to get them into the graphic formats, where you can instantly understand them. Now, statisticians don't like it, because they say that this will not show the reality; we have to have statistical, analytical methods. But this is hypothesis-generating.

19:05

I end now with the world. There, the Internet is coming. The number of Internet users are going up like this. This is the GDP per capita. And it's a new technology coming in, but then amazingly, how well it fits to the economy of the countries. That's why the \$100 computer will be so important. But it's a nice tendency. It's as if the world is flattening off, isn't it? These countries are lifting more than the economy and will be very interesting to follow this over the year, as I would like you to be able to do with all the publicly funded data. Thank you very much. (Applause)

Talk 16, Pamela Meyer – How to spot a liar

1740 van 3283 woorden = 53% gecodeerde passages

0:11

Okay, now I don't want to alarm anybody in this room, but it's just come to my attention that the person to your right is a liar. (Laughter) Also, the person to your left is a liar. Also the person sitting in your very seats is a liar. We're all liars. What I'm going to do today is I'm going to show you what the research says about why we're all liars, how you can become a liespotter and why you might want to go the extra mile and go from liespotting to truth seeking, and ultimately to trust building.

0:45

Now, speaking of trust, ever since I wrote this book, "Liespotting," **no one wants to meet me in person anymore, no, no, no, no, no. They say, "It's okay, we'll email you."** (Laughter) I can't even get a coffee date at Starbucks. My husband's like, "Honey, deception? Maybe you could have focused on cooking. How about French cooking?"

1:08

So before I get started, what I'm going to do is I'm going to clarify my goal for you, which is not to teach a game of Gotcha. Liespotters aren't those nitpicky kids, those kids in the back of the room that are shouting, "Gotcha! Gotcha! Your eyebrow twitched. You flared your nostril. I watch that TV show 'Lie To Me.' I know you're lying." No,

liespotters are armed with scientific knowledge of how to spot deception. They use it to get to the truth, and they do what mature leaders do everyday; they have difficult conversations with difficult people, sometimes during very difficult times. And they start up that path by accepting a core proposition, and that proposition is the following: Lying is a cooperative act. **Think about it, a lie has no power whatsoever by its mere utterance. Its power emerges** when someone else agrees to believe the lie.

1:57

So I know it may sound like tough love, but look, if at some point you got lied to, it's because you agreed to get lied to. Truth number one about lying: Lying's a cooperative act. Now not all lies are harmful. **Sometimes we're willing participants in deception for the sake of social dignity, maybe to keep a secret that should be kept secret, secret. We say, "Nice song." "Honey, you don't look fat in that, no." Or we say, favorite of the digiratti, "You know, I just fished that email out of my Spam folder. So sorry."**

2:32

But there are times when we are unwilling participants in deception. And that can have dramatic costs for us. Last year saw 997 billion dollars in corporate fraud alone in the United States. That's an eyelash under a trillion dollars. That's seven percent of revenues. Deception can cost billions. Think Enron, Madoff, the mortgage crisis. **Or in the case of double agents and traitors, like Robert Hanssen or Aldrich Ames, lies can betray our country, they can compromise our security, they can undermine democracy, they can cause the deaths of those that defend us.**

3:07

Deception is actually serious business. This con man, Henry Oberlander, he was such an effective con man, British authorities say he could have undermined the entire banking system of the Western world. And you can't find this guy on Google; you can't find him anywhere. He was interviewed once, and he said the following. He said, "Look, I've got one rule." And this was Henry's rule, he said, "Look, everyone is willing to give you something. They're ready to give you something for whatever it is they're hungry for." And that's the crux of it. If you don't want to be deceived, you have to know, what is it that you're hungry for? And we all kind of hate to admit it. We wish we were better husbands, better wives, smarter, more powerful, taller, richer -- the list goes on. Lying is an attempt to bridge that gap, to connect our wishes and our fantasies about who we wish we were, how we wish we could be, with what we're really like. And boy are we willing to fill in those gaps in our lives with lies.

4:05

On a given day, studies show that you may be lied to anywhere from 10 to 200 times. Now granted, many of those are white lies. But in another study, it showed that strangers lied three times within the first 10 minutes of meeting each other. (Laughter) Now when we first hear this data, we recoil. We can't believe how prevalent lying is. We're essentially against lying. But if you look more closely, the plot actually thickens. **We lie more to strangers than we lie to coworkers. Extroverts lie more than introverts. Men lie eight times more about themselves than they do other people. Women lie more to protect other people. If you're an average married couple, you're going to lie to your spouse in one out of every 10 interactions. Now, you may think that's bad. If you're unmarried, that number drops to three.**

4:58

Lying's complex. It's woven into the fabric of our daily and our business lives. We're deeply ambivalent about the truth. We parse it out on an as-needed basis, sometimes for very good reasons, other times just because we don't understand the gaps in our lives. That's truth number two about lying. We're against lying, but we're covertly for it in ways that our society has sanctioned for centuries and centuries and centuries. It's as old as breathing. It's part of our culture, it's part of our history. Think Dante, Shakespeare, the Bible, News of the World.

5:32

(Laughter)

5:34

Lying has evolutionary value to us as a species. Researchers have long known that the more intelligent the species, the larger the neocortex, the more likely it is to be deceptive. Now you might remember Koko. Does anybody remember Koko the gorilla who was taught sign language? Koko was taught to communicate via sign language. Here's Koko with her kitten. It's her cute little, fluffy pet kitten. Koko once blamed her pet kitten for ripping a sink out of the wall. (Laughter) We're hardwired to become leaders of the pack. It starts really, really early. How early? Well babies will fake a cry, pause, wait to see who's coming and then go right back to crying. One-year-olds learn concealment. (Laughter) Two-year-olds bluff. Five-year-olds lie outright. They manipulate via flattery. Nine-year-olds, masters of the cover-up. By the time you enter college, you're going to lie to your mom in one out of every five interactions. By the time we enter this work world and we're breadwinners, we enter a world that is just cluttered with Spam, fake digital friends, partisan media, ingenious identity thieves, world-class Ponzi schemers, a deception epidemic -- in short, what one author calls a post-truth society. It's been very confusing for a long time now.

6:59

What do you do? Well, there are steps we can take to navigate our way through the morass. Trained liespotters get to the truth 90 percent of the time. The rest of us, we're only 54 percent accurate. Why is it so easy to learn? There are good liars and bad liars. There are no real original liars. We all make the same mistakes. We all use the same techniques. So what I'm going to do is I'm going to show you two patterns of deception. And then we're going to look at the hot spots and see if we can find them ourselves. We're going to start with speech.

7:29

(Video) Bill Clinton: I want you to listen to me. I'm going to say this again. I did not have sexual relations with that woman, Miss Lewinsky. I never told anybody to lie, not a single time, never. And these allegations are false. And I need to go back to work for the American people. Thank you. (Applause)

7:54

Pamela Meyer: Okay, what were the telltale signs? Well first we heard what's known as a non-contracted denial. Studies show that people who are overdetermined in their denial will resort to formal rather than informal language. We also heard distancing language: "that woman." We know that liars will unconsciously distance themselves from their subject, using language as their tool. Now if Bill Clinton had said, "Well, to tell you the truth ..." or Richard Nixon's favorite, "In all candor ..." he would have been a dead giveaway for any liespotter that knows that qualifying language, as it's called, qualifying language like that, further discredits the subject. Now if he had repeated the

question in its entirety, or if he had peppered his account with a little too much detail -- and we're all really glad he didn't do that -- he would have further discredited himself. Freud had it right. Freud said, look, there's much more to it than speech: "No mortal can keep a secret. If his lips are silent, he chatters with his fingertips." And we all do it no matter how powerful you are. We all chatter with our fingertips. I'm going to show you Dominique Strauss-Kahn with Obama who's chattering with his fingertips.

9:04

(Laughter)

9:07

Now this brings us to our next pattern, which is body language. With body language, here's what you've got to do. You've really got to just throw your assumptions out the door. Let the science temper your knowledge a little bit. Because we think liars fidget all the time. Well guess what, they're known to freeze their upper bodies when they're lying. We think liars won't look you in the eyes. Well guess what, they look you in the eyes a little too much just to compensate for that myth. We think warmth and smiles convey honesty, sincerity. But a trained liaspotter can spot a fake smile a mile away. Can you all spot the fake smile here? You can consciously contract the muscles in your cheeks. But the real smile's in the eyes, the crow's feet of the eyes. They cannot be consciously contracted, especially if you overdid the Botox. Don't overdo the Botox; nobody will think you're honest.

10:01

Now we're going to look at the hot spots. Can you tell what's happening in a conversation? Can you start to find the hot spots to see the discrepancies between someone's words and someone's actions? Now, I know it seems really obvious, but when you're having a conversation with someone you suspect of deception, attitude is by far the most overlooked but telling of indicators.

10:22

An honest person is going to be cooperative. They're going to show they're on your side. They're going to be enthusiastic. They're going to be willing and helpful to getting you to the truth. They're going to be willing to brainstorm, name suspects, provide details. They're going to say, "Hey, maybe it was those guys in payroll that forged those checks." They're going to be infuriated if they sense they're wrongly accused throughout the entire course of the interview, not just in flashes; they'll be infuriated throughout the entire course of the interview. And if you ask someone honest what should happen to whomever did forge those checks, an honest person is much more likely to recommend strict rather than lenient punishment.

10:59

Now let's say you're having that exact same conversation with someone deceptive. That person may be withdrawn, look down, lower their voice, pause, be kind of herky-jerky. Ask a deceptive person to tell their story, they're going to pepper it with way too much detail in all kinds of irrelevant places. And then they're going to tell their story in strict chronological order. And what a trained interrogator does is they come in and in very subtle ways over the course of several hours, they will ask that person to tell that story backwards, and then they'll watch them squirm, and track which questions produce the highest volume of deceptive tells. Why do they do that? Well, we all do the same thing. We rehearse our words, but we rarely rehearse our gestures. We say "yes," we shake our heads "no." We tell very convincing stories, we slightly shrug our shoulders. We

commit terrible crimes, and we smile at the delight in getting away with it. **Now, that smile is known in the trade as "duping delight."**

11:54

And we're going to see that in several videos moving forward, but we're going to start -- for those of you who don't know him, this is presidential candidate John Edwards who shocked America by fathering a child out of wedlock. We're going to see him talk about getting a paternity test. See now if you can spot him saying, "yes" while shaking his head "no," slightly shrugging his shoulders.

12:14

(Video) John Edwards: I'd be happy to participate in one. I know that it's not possible that this child could be mine, because of the timing of events. So I know it's not possible. Happy to take a paternity test, and would love to see it happen. Interviewer: Are you going to do that soon? Is there somebody -- JE: Well, I'm only one side. I'm only one side of the test. But I'm happy to participate in one.

12:36

PM: Okay, those head shakes are much easier to spot once you know to look for them. There're going to be times when someone makes one expression while masking another that just kind of leaks through in a flash. Murderers are known to leak sadness. Your new joint venture partner might shake your hand, celebrate, go out to dinner with you and then leak an expression of anger. And we're not all going to become facial expression experts overnight here, but there's one I can teach you that's very dangerous and it's easy to learn, and that's the expression of contempt. Now with anger, you've got two people on an even playing field. It's still somewhat of a healthy relationship. But when anger turns to contempt, you've been dismissed. It's associated with moral superiority. And for that reason, it's very, very hard to recover from. Here's what it looks like. **It's marked by one lip corner pulled up and in. It's the only asymmetrical expression. And in the presence of contempt, whether or not deception follows -- and it doesn't always follow -- look the other way, go the other direction, reconsider the deal, say, "No thank you. I'm not coming up for just one more nightcap. Thank you."**

13:43

Science has surfaced many, many more indicators. We know, for example, we know liars will shift their blink rate, point their feet towards an exit. **They will take barrier objects and put them between themselves and the person that is interviewing them.** They'll alter their vocal tone, often making their vocal tone much lower. Now here's the deal. These behaviors are just behaviors. They're not proof of deception. They're red flags. We're human beings. We make deceptive flailing gestures all over the place all day long. They don't mean anything in and of themselves. But when you see clusters of them, that's your signal. Look, listen, probe, ask some hard questions, get out of that very comfortable mode of knowing, walk into curiosity mode, ask more questions, have a little dignity, treat the person you're talking to with rapport. Don't try to be like those folks on "Law & Order" and those other TV shows that pummel their subjects into submission. Don't be too aggressive, it doesn't work.

14:43

Now, we've talked a little bit about how to talk to someone who's lying and how to spot a lie. And as I promised, we're now going to look at what the truth looks like. But I'm going to show you two videos, two mothers -- one is lying, one is telling the truth. And

these were surfaced by researcher David Matsumoto in California. And I think they're an excellent example of what the truth looks like.

15:04

This mother, Diane Downs, shot her kids at close range, drove them to the hospital while they bled all over the car, claimed a scraggy-haired stranger did it. And you'll see when you see the video, she can't even pretend to be an agonizing mother. What you want to look for here is an incredible discrepancy between horrific events that she describes and her very, very cool demeanor. And if you look closely, you'll see duping delight throughout this video.

15:29

(Video) Diane Downs: At night when I close my eyes, I can see Christie reaching her hand out to me while I'm driving, and the blood just kept coming out of her mouth. And that -- maybe it'll fade too with time -- but I don't think so. That bothers me the most.

PM: Now I'm going to show you a video

15:53

of an actual grieving mother, Erin Runnion, confronting her daughter's murderer and torturer in court. Here you're going to see no false emotion, just the authentic expression of a mother's agony.

16:04

(Video) Erin Runnion: I wrote this statement on the third anniversary of the night you took my baby, and you hurt her, and you crushed her, you terrified her until her heart stopped. And she fought, and I know she fought you. But I know she looked at you with those amazing brown eyes, and you still wanted to kill her. And I don't understand it, and I never will.

16:31

PM: Okay, there's no doubting the veracity of those emotions.

16:35

Now the technology around what the truth looks like is progressing on, the science of it. We know, for example, that we now have specialized eye trackers and infrared brain scans, MRI's that can decode the signals that our bodies send out when we're trying to be deceptive. And these technologies are going to be marketed to all of us as panaceas for deceit, and they will prove incredibly useful some day. But you've got to ask yourself in the meantime: Who do you want on your side of the meeting, someone who's trained in getting to the truth or some guy who's going to drag a 400-pound electroencephalogram through the door?

17:10

Liespotters rely on human tools. They know, as someone once said, "Character's who you are in the dark." And what's kind of interesting is that today, we have so little darkness. Our world is lit up 24 hours a day. It's transparent with blogs and social networks broadcasting the buzz of a whole new generation of people that have made a choice to live their lives in public. It's a much more noisy world. So one challenge we have is to remember, oversharing, that's not honesty. Our manic tweeting and texting can blind us to the fact that the subtleties of human decency -- character integrity -- that's still what matters, that's always what's going to matter. So in this much noisier

world, it might make sense for us to be just a little bit more explicit about our moral code.

18:04

When you combine the science of recognizing deception with the art of looking, listening, you exempt yourself from collaborating in a lie. You start up that path of being just a little bit more explicit, because you signal to everyone around you, you say, "Hey, my world, our world, it's going to be an honest one. My world is going to be one where truth is strengthened and falsehood is recognized and marginalized." And when you do that, the ground around you starts to shift just a little bit.

18:32

And that's the truth. Thank you.

18:35

(Applause)

Bijlage 2: analysemodellen van de talks

In deze bijlage zijn de analysemodellen te vinden waar de verschillende technieken op een rij zijn gezet. Hier volgt eerst het aantal technieken per talk.

Talk 1: 0 technieken, Talk 2: 46 technieken, Talk 3: 2 technieken, Talk 4: 33 technieken, Talk 5: 13 technieken, Talk 6: 41 technieken, Talk 7: 14 technieken, Talk 8: 10 technieken, Talk 9: 17 technieken, Talk 10: 13 technieken, Talk 11: 48 technieken, Talk 12: 8 technieken, Talk 13: 9 technieken, Talk 14: 0 technieken, Talk 15: 13 technieken, Talk 16: 56 technieken

Spreker: Amy Cuddy

Titel: Your body language shapes who you are

Totale tijd: 20:59 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee foto's van Merkel en Sarkozy en hun lichaamstaal naar elkaar.

Passage: “You know, we're interested in, like, you know — (Laughter) — an awkward interaction, or a smile, or a contemptuous glance.”

2. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een knipoog van Sarah Palin.

Passage: “or maybe a very awkward wink, or maybe even something like”

3. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Een filmpje van een wachter bij het huis van de Prime Minister die wél een hand krijgt van president Obama, maar geen hand van de Prime Minister, hoewel de wachter zijn hand wel uitsteekt.

Passage: “a handshake. Narrator: Here they are arriving at Number 10. This lucky policeman gets to shake hands with the President of the United States. Here comes the Prime Minister -- No.”

4. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee apen.

Passage: “Well, this is what they are. So in the animal kingdom, they are about expanding. So you make yourself big, you stretch out, you take up space, you're basically opening up. It's about opening up.”

5. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een slang en een zwaan.

Passage: “And this is true across the animal kingdom. It's not just limited to primates.”

6. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Oprah Winfrey en Mick Jagger.

Passage: “And humans do the same thing. (Laughter) So they do this both when they have power sort of chronically, and also”

7. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Hardloper die gewonnen heeft.

Passage: “when they're feeling powerful in the moment. And this one is especially interesting because it really shows us how universal and old these expressions of power are. This expression, which is known as pride, Jessica Tracy has studied. She shows that people who are born with sight and people who are congenitally blind do this when they win at a physical competition. So when they cross the finish line and they've won, it doesn't matter if they've never seen anyone do it. They

do this. So the arms up in the V, the chin is slightly lifted. What do we do when we feel powerless?"

8. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee apen die in elkaar gezakt zitten.

Passage: "What do we do when we feel powerless?" "We do exactly the opposite. We close up. We wrap ourselves up. We make ourselves small. We don't want to bump into the person next to us."

9. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee mensen die in elkaar gezakt zitten.

Passage: "So again, both animals and humans do the same thing."

10. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een vrouw die door haar houding een man domineert.

Passage: "And this is what happens when you put together high and low power. So what we tend to do when it comes to power is that we complement the other's nonverbals. So if someone is being really powerful with us, we tend to make ourselves smaller. We don't mirror them. We do the opposite of them."

11. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Our nonverbals govern how other people think and feel about us.'

Passage: "So we know that our nonverbals govern how other people think and feel about us. There's a lot of evidence."

12. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'but...'

Passage: "But our question really was,"

13. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Do our nonverbal govern how we think and feel about ourselves?'

Passage: "do our nonverbals govern how we think and feel about ourselves? There's some evidence that they do. So, for example, we smile when we feel happy,"

14. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Our mind change our bodies.'

Passage: "so we know that our minds change our bodies,"

15. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'but...'

Passage: "but is it also true that our bodies"

16. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Do our bodies change our minds?'

Passage: "change our minds? And when I say minds, in the case of the powerful, what am I talking about? So I'm talking about thoughts and feelings and the sort of physiological things that make up our thoughts"

17. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een vrouw die haar benen over elkaar op een tafel heeft liggen en haar armen achter haar hoofd met daarboven de tekst 'High-Power Poses'.

Passage: "So this is what we did. We decided to bring people into the lab and run a little experiment, and these people adopted, for two minutes, either high-power poses or low-power poses, and I'm just going to show you five of the poses, although they took on only two. So here's one."

18. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – afbeelding: Twee vrouwen in verschillende poses bij een tafel met daarboven de tekst ‘High-Power Poses’.

Passage: “A couple more. This one has been dubbed the ‘Wonder Woman’”

19. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Twee mannen in verschillende poses op een stoel met daarboven de tekst ‘High-Power Poses’.

Passage: “by the media. Here are a couple more. So you can be standing or you can be sitting.”

20. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een man en een vrouw met de armen over elkaar met daarboven de tekst ‘Low-Power Poses’.

Passage: “And here are the low-power poses. So you're folding up, you're making yourself small.”

21. Projectie - afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – afbeelding: Twee mannen in nederige poses met daarboven de tekst ‘Low-Power Poses’.

Passage “So you’re folding up, you’re making yourself small.”

22. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – afbeelding: Een vrouw die aan haar nek zit met daarboven de tekst ‘Low-Power Poses’.

Passage: “This one is very low-power. When you're touching your neck, you're really protecting yourself.”

23. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – afbeelding: Een paar foto’s van het onderzoek met daartussen het woordje ‘or’.

Passage: “So this is what happens. They come in, they spit into a vial, for two minutes, we say, "You need to do this or this." They don't look at pictures of the poses. We don't want to prime them with a concept of power. We want them to be feeling power. So two minutes they do this. We then ask them, "How powerful do you feel?" on a series of items, and then we give them an opportunity to gamble, and then we take another saliva sample. That's it. That's the whole experiment.”

24. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: Grafiek van Risk Tolerance.

Passage: “So this is what we find. Risk tolerance, which is the gambling, we find that when you are in the high-power pose condition, 86 percent of you will gamble. When you're in the low-power pose condition, only 60 percent, and that's a whopping significant difference.”

25. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: Grafiek van Testosterone Change.

Passage: “Here's what we find on testosterone. From their baseline when they come in, high-power people experience about a 20-percent increase, and low-power people experience about a 10-percent decrease. So again, two minutes, and you get these changes.”

26. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: Grafiek van Cortisol Change.

Passage: “Here's what you get on cortisol. High-power people experience about a 25-percent decrease, and the low-power people experience about a 15-percent increase. So two minutes lead to these hormonal changes that configure your brain to basically be either assertive, confident and comfortable, or really stress-reactive, and feeling sort of shut down. And we've all had the feeling, right?”

27. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Our nonverbals govern how we think and feel about ourselves.’

Passage: "So it seems that our nonverbals do govern how we think and feel about ourselves, so it's not just others, but it's also ourselves."

28. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Our bodies change our minds.'

Passage: "Also, our bodies change our minds. But the next question, of course, is,"

29. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Can power posing for a few minutes really change your life in meaningful ways?'

Passage: "can power posing for a few minutes really change your life in meaningful ways? This is in the lab, it's this little task, it's just a couple of minutes."

30. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een vrouw die haar benen over elkaar op tafel heeft liggen en haar armen boven haar hoofd heeft.

Passage: "Okay, so this is what you do when you go in for the job interview, right? (Laughter) You know, so we were of course horrified, and said, Oh my God, no, that's not what we meant at all. For numerous reasons, no, don't do that. Again, this is not about you talking to other people. It's you talking to yourself. What do you do before you go into a job interview?"

31. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Drie mensen die gebogen op een stoel zitten.

Passage: "You do this. You're sitting down. You're looking at your iPhone -- or your Android, not trying to leave anyone out. You're looking at your notes, you're hunching up, making yourself small, when really what you should be doing maybe is this, like, in the bathroom, right? Do that. Find two minutes. So that's what we want to test. Okay?"

32. Projectie – afbeelding, woord na beeld (S)

Projectie – afbeelding: Een man die je recht in de ogen kijkt.

Passage: "So we bring people into a lab, and they do either high- or low-power poses again, they go through a very stressful job interview. It's five minutes long. They are being recorded. They're being judged also, and the judges are trained to give no nonverbal feedback, so they look like this. Imagine this is the person interviewing you. So for five minutes, nothing, and this is worse than being heckled. People hate this. It's what Marianne LaFrance calls "standing in social quicksand." So this really spikes your cortisol. So this is the job interview we put them through, because we really wanted to see what happened. We then have these coders look at these tapes, four of them. They're blind to the hypothesis. They're blind to the conditions. They have no idea who's been posing in what pose, and they end up looking at these sets of tapes, and they say, "We want to hire these people," all the high-power posers. "We don't want to hire these people. We also evaluate these people much more positively overall.""

33. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: 'Presence', 'Enthusiastic', 'Captivating', 'Authentic', 'Confident' en 'Comfortable'.

Passage: "But what's driving it? It's not about the content of the speech. It's about the presence that they're bringing to the speech. Because we rate them on all these variables related to competence, like, how well-structured is the speech? How good is it? What are their qualifications? No effect on those things. This is what's affected. These kinds of things. People are bringing their true selves, basically. They're bringing themselves. They bring their ideas, but as themselves, with no, you know, residue over them. So this is what's driving the effect, or mediating the effect."

34. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Our bodies change our minds’, ‘...and our minds change our behavior’ en ‘...and our behaviour change our outcomes’.

Passage: “So when I tell people about this, that our bodies change our minds and our minds can change our behavior, and our behavior can change our outcomes, they say to me, "It feels fake." Right? So I said, fake it till you make it. It's not me. I don't want to get there and then still feel like a fraud. I don't want to feel like an impostor. I don't want to get there only to feel like I'm not supposed to be here. And that really resonated with me,”

35. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Don’t fake it till you make it.’

Passage: “And so I want to say to you, don't fake it till you make it.”

36. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Fake it till you become it.’

Passage: “Fake it till you become it. Do it enough until you actually become it and internalize.”

37. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Tiny tweaks → Big Changes’

Passage: “The last thing I'm going to leave you with is this. Tiny tweaks can lead to big changes. So, this is two minutes. Two minutes, two minutes, two minutes. Before you go into the next stressful evaluative situation, for two minutes”

38. Projectie – visuele tekst, woord en beeld en Projectie - afbeelding, woord en beeld (D) (combinatie)

Projectie – visuele tekst en afbeelding: ‘Try a Power Pose & Share the Science’ met een foto van een vrouw in een stoer pakje met een stoere houding.

Passage: “So I want to ask you first, you know, both to try power posing, and also I want to ask you to share the science, because this is simple. I don't have ego involved in this. (Laughter) Give it away. Share it with people, because the people who can use it the most are the ones with no resources and no technology and no status and no power. Give it to them because they can do it in private. They need their bodies, privacy and two minutes, and it can significantly change the outcomes of their life. Thank you. (Applause)”

Spreker: Simon Sinek

Titel: How great leaders inspire action

Totale tijd: 18:01 minuten

Bijzonderheden: De spreker heeft een microfoon in zijn hand die na 5:13 minuten wordt omgewisseld voor een nieuwe microfoon.

1. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: De ‘golden circle’ van een succesvolle onderneming.

Passage: “I call it the golden circle. Why? How? What? This little idea explains why some organizations and some leaders are able to inspire where others aren't. Let me define the terms really quickly. Every single person, every single organization on the planet knows what they do, 100 percent. Some know how they do it, whether you call it your differentiated value proposition or your proprietary process or your USP. But very, very few people or organizations know why they do what they do. And by "why" I don't mean "to make a profit." That's a result. It's always a result. By "why," I mean: What's your purpose? What's your cause? What's your belief? Why does your organization exist? Why do you get out of bed in the morning? And why should anyone care? As a result, the way we think, we act, the way we communicate is from the outside in, it's obvious. We go from the clearest thing to the fuzziest thing. But the inspired leaders and the inspired organizations -- regardless of their size, regardless of their industry -- all think, act and communicate from the inside out. Let me give you an example. I use Apple because they're easy to understand and everybody gets it. If Apple were like everyone else, a marketing message from them might sound like this: "We make great computers. They're beautifully designed, simple to use and user friendly. Want to buy one?" "Meh." That's how most of us communicate. That's how most marketing and sales are done, that's how we communicate interpersonally. We say what we do, we say how we're different or better and we expect some sort of a behavior, a purchase, a vote, something like that. Here's our new law firm: We have the best lawyers with the biggest clients, we always perform for our clients. Here's our new car: It gets great gas mileage, it has leather seats. Buy our car. But it's uninspiring. Here's how Apple actually communicates. "Everything we do, we believe in challenging the status quo. We believe in thinking differently. The way we challenge the status quo is by making our products beautifully designed, simple to use and user friendly. We just happen to make great computers. Want to buy one?" Totally different, right? You're ready to buy a computer from me. I just reversed the order of the information. What it proves to us is that people don't buy what you do; people buy why you do it. This explains why every single person in this room is perfectly comfortable buying a computer from Apple. But we're also perfectly comfortable buying an MP3 player from Apple, or a phone from Apple, or a DVR from Apple. As I said before, Apple's just a computer company. Nothing distinguishes them structurally from any of their competitors. Their competitors are equally qualified to make all of these products. In fact, they tried. A few years ago, Gateway came out with flat-screen TVs. They're eminently qualified to make flat-screen TVs. They've been making flat-screen monitors for years. Nobody bought one. Dell came out with MP3 players and PDAs, and they make great quality products, and they can make perfectly well-designed products -- and nobody bought one. In fact, talking about it now, we can't even imagine buying an MP3 player from Dell. Why would you buy one from a computer company? But we do it every day. People don't buy what you do; they buy why you do it. The goal is not to do business with everybody who needs what you have. The goal is to do business with people who believe what you believe. Here's the best part: None of what I'm telling you is my opinion. It's all grounded in the tenets of biology. Not psychology, biology. If you look at a cross-section of the human brain, from the top down, the human brain is actually broken into three major components that correlate perfectly with the golden circle. Our newest brain, our Homo sapien brain, our neocortex, corresponds with the "what" level. The neocortex is responsible for all of our rational and analytical thought and language. The middle two sections make up our limbic brains, and our limbic brains are responsible for all of our feelings, like trust and loyalty. It's also responsible for all human behavior, all decision-making, and it has no capacity for language. In other words, when we communicate from the outside in,

yes, people can understand vast amounts of complicated information like features and benefits and facts and figures. It just doesn't drive behavior. When we can communicate from the inside out, we're talking directly to the part of the brain that controls behavior, and then we allow people to rationalize it with the tangible things we say and do. This is where gut decisions come from. Sometimes you can give somebody all the facts and figures, and they say, "I know what all the facts and details say, but it just doesn't feel right." Why would we use that verb, it doesn't "feel" right? Because the part of the brain that controls decision-making doesn't control language. The best we can muster up is, "I don't know. It just doesn't feel right" Or sometimes you say you're leading with your heart or soul. I hate to break it to you, those aren't other body parts controlling your behavior. It's all happening here in your limbic brain, the part of the brain that controls decision-making and not language. But if you don't know why you do what you do, and people respond to why you do what you do, then how will you ever get people to vote for you, or buy something from you, or, more importantly, be loyal and want to be a part of what it is that you do. The goal is not just to sell to people who need what you have; the goal is to sell to people who believe what you believe. The goal is not just to hire people who need a job; it's to hire people who believe what you believe. I always say that, you know, if you hire people just because they can do a job, they'll work for your money, but if they believe what you believe, they'll work for you with blood and sweat and tears. Nowhere else is there a better example than with the Wright brothers. Most people don't know about Samuel Pierpont Langley. And back in the early 20th century, the pursuit of powered man flight was like the dot com of the day. Everybody was trying it. And Samuel Pierpont Langley had, what we assume, to be the recipe for success. Even now, you ask people, "Why did your product or why did your company fail?" and people always give you the same permutation of the same three things: under-capitalized, the wrong people, bad market conditions. It's always the same three things, so let's explore that. Samuel Pierpont Langley was given 50,000 dollars by the War Department to figure out this flying machine. Money was no problem. He held a seat at Harvard and worked at the Smithsonian and was extremely well-connected; he knew all the big minds of the day. He hired the best minds money could find and the market conditions were fantastic. The New York Times followed him around everywhere, and everyone was rooting for Langley. Then how come we've never heard of Samuel Pierpont Langley? A few hundred miles away in Dayton Ohio, Orville and Wilbur Wright, they had none of what we consider to be the recipe for success. They had no money; they paid for their dream with the proceeds from their bicycle shop; not a single person on the Wright brothers' team had a college education, not even Orville or Wilbur; and The New York Times followed them around nowhere. The difference was, Orville and Wilbur were driven by a cause, by a purpose, by a belief. They believed that if they could figure out this flying machine, it'll change the course of the world. Samuel Pierpont Langley was different. He wanted to be rich, and he wanted to be famous. He was in pursuit of the result. He was in pursuit of the riches. And lo and behold, look what happened. The people who believed in the Wright brothers' dream worked with them with blood and sweat and tears. The others just worked for the paycheck. They tell stories of how every time the Wright brothers went out, they would have to take five sets of parts, because that's how many times they would crash before supper. And, eventually, on December 17th, 1903, the Wright brothers took flight, and no one was there to even experience it. We found out about it a few days later. And further proof that Langley was motivated by the wrong thing: The day the Wright brothers took flight, he quit. He could have said, "That's an amazing discovery, guys, and I will improve upon your technology," but he didn't. He wasn't first, he didn't get rich, he didn't get famous, so he quit.

People don't buy what you do; they buy why you do it. If you talk about what you believe, you will attract those who believe what you believe. But why is it important to attract those who believe what you believe?" Papier wordt omgeslagen

2. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: Weergave van verschillende ontwerpers en kopers van producten.

Passage: "Something called the law of diffusion of innovation, if you don't know the law, you know the terminology. The first 2.5% of our population are our innovators. The next 13.5% of our population are our early adopters. The next 34% are your early majority, your late majority and your laggards. The only reason these people buy touch-tone phones is because you can't buy rotary phones anymore. (Laughter) We all sit at various places at various times on this scale, but what the law of diffusion of innovation tells us is that if you want mass-market success or mass-market acceptance of an idea, you cannot have it until you achieve this tipping point between 15 and 18 percent market penetration, and then the system tips. I love asking businesses, "What's your conversion on new business?" They love to tell you, "It's about 10 percent," proudly. Well, you can trip over 10% of the customers. We all have about 10% who just "get it." That's how we describe them, right? That's like that gut feeling, "Oh, they just get it." The problem is: How do you find the ones that get it before doing business versus the ones who don't get it? So it's this here, this little gap that you have to close, as Jeffrey Moore calls it, "Crossing the Chasm" -- because, you see, the early majority will not try something until someone else has tried it first. And these guys, the innovators and the early adopters, they're comfortable making those gut decisions. They're more comfortable making those intuitive decisions that are driven by what they believe about the world and not just what product is available. These are the people who stood in line for six hours to buy an iPhone when they first came out, when you could have bought one off the shelf the next week. These are the people who spent 40,000 dollars on flat-screen TVs when they first came out, even though the technology was substandard. And, by the way, they didn't do it because the technology was so great; they did it for themselves. It's because they wanted to be first. People don't buy what you do; they buy why you do it and what you do simply proves what you believe. In fact, people will do the things that prove what they believe. The reason that person bought the iPhone in the first six hours, stood in line for six hours, was because of what they believed about the world, and how they wanted everybody to see them: They were first. People don't buy what you do; they buy why you do it. So let me give you a famous example, a famous failure and a famous success of the law of diffusion of innovation. First, the famous failure. It's a commercial example. As we said before, the recipe for success is money and the right people and the right market conditions. You should have success then. Look at TiVo. From the time TiVo came out about eight or nine years ago to this current day, they are the single highest-quality product on the market, hands down, there is no dispute. They were extremely well-funded. Market conditions were fantastic. I mean, we use TiVo as verb. I TiVo stuff on my piece-of-junk Time Warner DVR all the time. (Laughter) But TiVo's a commercial failure. They've never made money. And when they went IPO, their stock was at about 30 or 40 dollars and then plummeted, and it's never traded above 10. In fact, I don't think it's even traded above six, except for a couple of little spikes. Because you see, when TiVo launched their product, they told us all what they had. They said, "We have a product that pauses live TV, skips commercials, rewinds live TV and memorizes your viewing habits without you even asking." And the cynical majority said, "We don't believe you. We don't need it. We don't like it. You're scaring us." What if they had said, "If you're the kind of person who likes to have total control over every aspect of your life, boy, do we have a product for you. It pauses live TV, skips commercials, memorizes your viewing habits, etc., etc." People don't buy what you do;

they buy why you do it, and what you do simply serves as the proof of what you believe. Now let me give you a successful example of the law of diffusion of innovation. In the summer of 1963, 250,000 people showed up on the mall in Washington to hear Dr. King speak. They sent out no invitations, and there was no website to check the date. How do you do that? Well, Dr. King wasn't the only man in America who was a great orator. He wasn't the only man in America who suffered in a pre-civil rights America. In fact, some of his ideas were bad. But he had a gift. He didn't go around telling people what needed to change in America. He went around and told people what he believed. "I believe, I believe, I believe," he told people. And people who believed what he believed took his cause, and they made it their own, and they told people. And some of those people created structures to get the word out to even more people. And lo and behold, 250,000 people showed up on the right day at the right time to hear him speak. How many of them showed up for him? Zero. They showed up for themselves. It's what they believed about America that got them to travel in a bus for eight hours to stand in the sun in Washington in the middle of August. It's what they believed, and it wasn't about black versus white: 25% of the audience was white. Dr. King believed that there are two types of laws in this world: those that are made by a higher authority and those that are made by men. And not until all the laws that are made by men are consistent with the laws made by the higher authority will we live in a just world. It just so happened that the Civil Rights Movement was the perfect thing to help him bring his cause to life. We followed, not for him, but for ourselves. By the way, he gave the "I have a dream" speech, not the "I have a plan" speech. (Laughter) Listen to politicians now, with their comprehensive 12-point plans. They're not inspiring anybody. Because there are leaders and there are those who lead. Leaders hold a position of power or authority, but those who lead inspire us. Whether they're individuals or organizations, we follow those who lead, not because we have to, but because we want to. We follow those who lead, not for them, but for ourselves. And it's those who start with "why" that have the ability to inspire those around them or find others who inspire them. Thank you very much. (Applause)"

Spreker: Bréne Brown

Titel: The power of vulnerability

Totale tijd: 20:19 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1: Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘If you can’t measure it, it doesn’t exist.’

Passage: “And this is where my story starts. When I was a young researcher, doctoral student, my first year I had a research professor who said to us, "Here's the thing, if you cannot measure it, it does not exist." And I thought he was just sweet-talking me. I was like, "Really?" and he was like, "Absolutely." And so you have to understand that I have a bachelor's in social work, a master's in social work, and I was getting my Ph.D. in social work, so my entire academic career was surrounded by people who kind of believed in the "life's messy, love it." And I'm more of the, "life's messy, clean it up, organize it and put it into a bento box." (Laughter) And so to think that I had found my way, to found a career that takes me -- really, one of the big sayings in social work is, "Lean into the discomfort of the work." And I'm like, knock discomfort upside the head and move it over and get all A's. That was my mantra. So I was very excited about this. And so I thought, you know what, this is the career for me, because I am interested in some messy topics. But I want to be able to make them not messy. I want to understand them. I want to hack into these things I know are important and”

2. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – afbeelding: Twee handen die elkaar vasthouden met in beeld de tekst ‘shame and fear’ en ‘excruciating vulnerability’.

Passage: “lay the code out for everyone to see. So where I started was with connection. Because, by the time you're a social worker for 10 years, what you realize is that connection is why we're here. It's what gives purpose and meaning to our lives. This is what it's all about. It doesn't matter whether you talk to people who work in social justice, mental health and abuse and neglect, what we know is that connection, the ability to feel connected, is -- neurobiologically that's how we're wired -- it's why we're here. So I thought, you know what, I'm going to start with connection. Well, you know that situation where you get an evaluation from your boss, and she tells you 37 things you do really awesome, and one "opportunity for growth?" (Laughter) And all you can think about is that opportunity for growth, right? Well, apparently this is the way my work went as well, because, when you ask people about love, they tell you about heartbreak. When you ask people about belonging, they'll tell you their most excruciating experiences of being excluded. And when you ask people about connection, the stories they told me were about disconnection. So very quickly -- really about six weeks into this research -- I ran into this unnamed thing that absolutely unraveled connection in a way that I didn't understand or had never seen. And so I pulled back out of the research and thought, I need to figure out what this is. And it turned out to be shame. And shame is really easily understood as the fear of disconnection: Is there something about me that, if other people know it or see it, that I won't be worthy of connection? The things I can tell you about it: it's universal; we all have it. The only people who don't experience shame have no capacity for human empathy or connection. No one wants to talk about it, and the less you talk about it the more you have it. What underpinned this shame, this "I'm not good enough," -- which we all know that feeling: "I'm not blank enough. I'm not thin enough, rich enough, beautiful enough, smart enough, promoted enough." The thing that underpinned this was excruciating vulnerability, this idea of, in order for connection to happen, we have to allow ourselves to be seen, really seen. And you know how I feel about vulnerability. I hate vulnerability. And so I thought, this is my chance to beat it back with my measuring stick. I'm going in, I'm going to figure this stuff out, I'm going to spend a year, I'm going to totally deconstruct shame, I'm going to understand how vulnerability works, and I'm going to outsmart it. So I was ready, and I was really excited. As you know, it's not going to turn out well. (Laughter) You know this. So, I could tell you a lot about shame,”

3. Projectie – afbeelding en Projectie – visuele tekst, woord na beeld (D)

Projectie – visuele tekst en afbeelding: Lampjes in de vorm van harten met in beeld de tekst ‘Worthiness’.

Passage: “but I'd have to borrow everyone else's time. But here's what I can tell you that it boils down to -- and this may be one of the most important things that I've ever learned in the decade of doing this research. My one year turned into six years: thousands of stories, hundreds of long interviews, focus groups. At one point, people were sending me journal pages and sending me their stories -- thousands of pieces of data in six years. And I kind of got a handle on it. I kind of understood, this is what shame is, this is how it works. I wrote a book, I published a theory, but something was not okay -- and what it was is that, if I roughly took the people I interviewed and divided them into people who really have a sense of worthiness -- that's what this comes down to, a sense of worthiness -- they have a strong sense of love and belonging -- and folks who struggle for it, and folks who are always wondering if they're good enough. There was only one variable that separated the people who have a strong sense of love and belonging and the people who really struggle for it. And that was, the people who have a strong sense of love and belonging believe they're worthy of love and belonging. That's it. They believe they're worthy. And to me, the hard part of the one thing that keeps us out of connection is our fear that we're not worthy of connection, was something that, personally and professionally, I felt like I needed to understand better. So what I did is I took all of the interviews where I saw worthiness, where I saw people living that way, and just looked at those. What do these people have in common? I have a slight office supply addiction, but that's another talk. So I had a manila folder, and I had a Sharpie, and I was like, what am I going to call this research? And the first words that came to my mind were whole-hearted. These are whole-hearted people, living from this deep sense of worthiness. So I wrote at the top of the manila folder, and I started looking at the data. In fact, I did it first in a four-day very intensive data analysis, where I went back, pulled the interviews, the stories, pulled the incidents. What's the theme? What's the pattern? My husband left town with the kids because I always go into this Jackson Pollock crazy thing, where I'm just writing and in my researcher mode. And so here's what I found.”

4. Projectie – afbeelding en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Een grote rode kers met in beeld de tekst ‘courage compassion connection’ en ‘vulnerability’.

Passage: “What they had in common was a sense of courage. And I want to separate courage and bravery for you for a minute. Courage, the original definition of courage, when it first came into the English language -- it's from the Latin word cor, meaning heart -- and the original definition was to tell the story of who you are with your whole heart. And so these folks had, very simply, the courage to be imperfect. They had the compassion to be kind to themselves first and then to others, because, as it turns out, we can't practice compassion with other people if we can't treat ourselves kindly. And the last was they had connection, and -- this was the hard part -- as a result of authenticity, they were willing to let go of who they thought they should be in order to be who they were, which you have to absolutely do that for connection. The other thing that they had in common was this: They fully embraced vulnerability. They believed that what made them vulnerable made them beautiful. They didn't talk about vulnerability being comfortable, nor did they really talk about it being excruciating -- as I had heard it earlier in the shame interviewing. They just talked about it being necessary. They talked about the willingness to say, "I love you" first, the willingness to do something where there are no guarantees, the willingness to breathe through waiting for the doctor to call after your mammogram. They're willing to invest in a relationship that may or may not work out. They thought this was fundamental. I personally thought it was betrayal. I could not believe I had pledged allegiance to research, where our job --

you know, the definition of research is to control and predict, to study phenomena, for the explicit reason to control and predict. And now my mission to control and predict had turned up the answer that the way to live is with vulnerability and to stop controlling and predicting. This led to a little breakdown”

5. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘breakdown’

Passage “which actually looked more like this.”

6. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: (in grotere letters in beeld) ‘breakdown’ en ‘spiritual awakening’

Passage: “And it did. I call it a breakdown; my therapist calls it a spiritual awakening. (Laughter)

A spiritual awakening sounds better than breakdown, but I assure you it was a breakdown. And I had to put my data away and go find a therapist. Let me tell you something: you know who you are when you call your friends and say, "I think I need to see somebody. Do you have any recommendations?" Because about five of my friends were like, "Wooo, I wouldn't want to be your therapist." (Laughter) I was like, "What does that mean?" And they're like, "I'm just saying, you know. Don't bring your measuring stick." (Laughter) I was like, "Okay." So I found a therapist. My first meeting with her, Diana -- I brought in my list of the way the whole-hearted live, and I sat down. And she said, "How are you?" And I said, "I'm great. I'm okay." She said, "What's going on?" And this is a therapist who sees therapists, because we have to go to those, because their B.S. meters are good. (Laughter) And so I said, "Here's the thing, I'm struggling. And she said, "What's the struggle?" And I said, "Well, I have a vulnerability issue. And I know that vulnerability is the core of shame and fear and our struggle for worthiness, but it appears that it's also the birthplace of joy, of creativity, of belonging, of love. And I think I have a problem, and I need some help." And I said, "But here's the thing: no family stuff, no childhood shit." (Laughter) "I just need some strategies." (Laughter) (Applause) Thank you. So she goes like this. (Laughter) And then I said, "It's bad, right?" And she said, "It's neither good nor bad." (Laughter) "It just is what it is." And I said, "Oh my God, this is going to suck." (Laughter) And it did, and it didn't. And it took about a year. And you know how there are people that, when they realize that vulnerability and tenderness are important, that they surrender and walk into it. A: that's not me, and B: I don't even hang out with people like that. (Laughter) For me, it was a yearlong street fight. It was a slugfest. Vulnerability pushed, I pushed back. I lost the fight, but probably won my life back. And so then I went back into the research and spent the next couple of years really trying to understand what they, the whole-hearted, what choices they were making, and what are we doing with vulnerability. Why do we struggle with it so much? Am I alone in struggling with vulnerability? No. So this is what I learned.

7. Projectie – afbeelding en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een plaatje van een paar grassprietten met daarbij de tekst ‘we numb’.

Passage: “We numb vulnerability -- when we're waiting for the call. It was funny, I sent something out on Twitter and on Facebook that says, "How would you define vulnerability? What makes you feel vulnerable?" And within an hour and a half, I had 150 responses. Because I wanted to know what's out there. Having to ask my husband for help because I'm sick, and we're newly married; initiating sex with my husband; initiating sex with my wife; being turned down; asking someone out; waiting for the doctor to call back; getting laid off; laying off people. This is the world we live in. We live in a vulnerable world. And one of the ways we deal with it is we numb vulnerability. And I think there's evidence -- and it's not the only reason this evidence exists, but I think it's a huge cause --“

8. Projectie – afbeelding, woord en beeld (S)

Projectie - afbeelding: Creditcards.

Passage: “We are the most in-debt,”

9. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Iemand die een meetlint om een dikke buik heen legt.

Passage: “Obese,”

10. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Verschillende soorten drank.

Passage: “addicted and”

11. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Pillen.

Passage: “medicated adult cohort in U.S. history.”

12. Projectie – afbeelding en Projectie – visuele tekst, woord en beeld (D)

Projectie visuele tekst en afbeelding: Een plaatje van een paar grassprietten met daarbij de tekst ‘we numb...’ en ‘everything’.

Passage: “The problem is -- and I learned this from the research -- that you cannot selectively numb emotion. You can't say, here's the bad stuff. Here's vulnerability, here's grief, here's shame, here's fear, here's disappointment. I don't want to feel these. I'm going to have a couple of beers and a banana nut muffin. (Laughter) I don't want to feel these. And I know that's knowing laughter. I hack into your lives for a living. God. (Laughter) You can't numb those hard feelings without numbing the other affects, our emotions. You cannot selectively numb. So when we numb those, we numb joy, we numb gratitude, we numb happiness. And then we are miserable, and we are looking for purpose and meaning, and then we feel vulnerable, so then we have a couple of beers and a banana nut muffin. And it becomes this dangerous cycle. One of the things that I think we need to think about is why and how we numb. And it doesn't just have to be addiction.”

13. Projectie – afbeelding en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Beeld van een man die boos naar je wijst met daarnaast de tekst ‘we make the uncertain certain’.

Passage: “The other thing we do is we make everything that's uncertain certain. Religion has gone from a belief in faith and mystery to certainty. I'm right, you're wrong. Shut up. That's it. Just certain. The more afraid we are, the more vulnerable we are, the more afraid we are. This is what politics looks like today. There's no discourse anymore. There's no conversation. There's just blame. You know how blame is described in the research? A way to discharge pain and discomfort.”

14. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een cadeautje met daarnaast de tekst ‘We perfect’.

Passage: “We perfect. If there's anyone who wants their life to look like this, it would be me, but it doesn't work.”

15. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een naald in een lichaam voor plastische chirurgie.

Passage: “Because what we do is we take fat from our butts and put it in our cheeks. (Laughter) Which just, I hope in 100 years, people will look back and go, "Wow." (Laughter) And we perfect, most dangerously, our children. Let me tell you what we think about children”

16. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Kinderen op het strand, verkleed als superman.

Passage: “They're hardwired for struggle when they get here. And when you hold those perfect little babies in your hand, our job is not to say, "Look at her, she's perfect. My job is just to keep

her perfect -- make sure she makes the tennis team by fifth grade and Yale by seventh." That's not our job. Our job is to look and say, "You know what? You're imperfect, and you're wired for struggle, but you are worthy of love and belonging." That's our job. Show me a generation of kids raised like that, and we'll end the problems I think that we see today."

17. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: 3 apen die met hun handen voor hun oren, mond en ogen zitten alsof ze niets meekrijgen, met daarnaast de tekst 'we pretend'.

Passage: "We pretend that what we do doesn't have an effect on people. We do that in our personal lives. We do that corporate -- whether it's a bailout, an oil spill, a recall -- we pretend like what we're doing doesn't have a huge impact on other people. I would say to companies, this is not our first rodeo, people. We just need you to be authentic and real and say, "We're sorry. We'll fix it.""

18. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een trap.

Passage: "But there's another way, and I'll leave you with this. This is what I have found:"

19. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een lachend gezicht met daarnaast de tekst 'let ourselves be seen'.

Passage: "to let ourselves be seen, deeply seen, vulnerably seen; to love with our whole hearts, even though there's no guarantee --"

20. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld(S)

Projectie – visuele tekst en afbeelding: Een moeder die haar kind een zoen geeft met daarnaast de tekst 'Love with our whole hearts'.

Passage: "and that's really hard, and I can tell you as a parent, that's excruciatingly difficult --"

21. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een gezin dat vogels voert met daarnaast de tekst 'practice gratitude lean into joy'.

Passage: "to practice gratitude and joy in those moments of terror, when we're wondering, "Can I love you this much? Can I believe in this this passionately? Can I be this fierce about this?" just to be able to stop and, instead of catastrophizing what might happen, to say, "I'm just so grateful, because to feel this vulnerable means I'm alive.""

22. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een hals van een mens, waarop staat geschreven: 'I am enough'.

Passage: "And the last, which I think is probably the most important, is to believe that we're enough. Because when we work from a place, I believe, that says, "I'm enough," then we stop screaming and start listening, we're kinder and gentler to the people around us, and we're kinder and gentler to ourselves. That's all I have. Thank you. (Applause)"

Spreker: Jill Bolte Taylor

Titel: My stroke of insight

Totale tijd: 18:19 minuten

Bijzonderheden: De spreker heeft een afstandsbediening in haar hand om de slides te bedienen. Ze legt deze op de grond na 6:23 minuten en bukt zo nu en dan om door te klikken.

1. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van de spreker met haar broer.

Passage: “What is it about my brother's brain and his schizophrenia that he cannot connect his dreams to a common and shared reality, so they instead become delusion? So I dedicated my career to research into the severe mental illnesses.

2. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een gedeelte van de binnenkant van de hersenen. Boven de afbeelding staat ‘Triple Immunofluorescence’.

Passage: And I moved from my home state of Indiana to Boston, where I was working in the lab of Dr. Francine Benes, in the Harvard Department of Psychiatry. And in the lab, we were asking the question, "What are the biological differences between the brains of individuals who would be diagnosed as normal control, as compared with the brains of individuals diagnosed with schizophrenia, schizoaffective or bipolar disorder?" So we were essentially mapping the microcircuitry of the brain: which cells are communicating with which cells, with which chemicals, and then in what quantities of those chemicals? So there was a lot of meaning in my life because I was performing this type of research during the day, but then in the evenings and on the weekends, I traveled as an advocate for NAMI, the National Alliance on Mental Illness.”

3. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een plaatje van de plek van de hersenbloeding in het hoofd met daarboven en –onder de tekst: ‘December 10, 1996’ en ‘My Hemorrhage’.

Passage: “But on the morning of December 10, 1996, I woke up to discover that I had a brain disorder of my own. A blood vessel exploded in the left half of my brain. And in the course of four hours, I watched my brain completely deteriorate in its ability to process all information. On the morning of the hemorrhage, I could not walk, talk, read, write or recall any of my life. I essentially became an infant in a woman's body.”

4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Twee hersenhelften met aan de zijkanten van de afbeelding de tekst ‘Right parallel processor’ en ‘Left serial processor’.

Passage: “If you've ever seen a human brain, it's obvious that the two hemispheres are completely separate from one another. And I have brought for you a real human brain. (Groaning, laughter) So this is a real human brain. This is the front of the brain, the back of brain with the spinal cord hanging down, and this is how it would be positioned inside of my head. And when you look at the brain, it's obvious that the two cerebral cortices are completely separate from one another. For those of you who understand computers, our right hemisphere functions like a parallel processor, while our left hemisphere functions like a serial processor. The two hemispheres do communicate with one another through the corpus callosum, which is made up of some 300 million axonal fibers. But other than that, the two hemispheres are completely separate. Because they process information differently, each of our hemispheres think about different things, they care about different things, and, dare I say, they have very different personalities. Excuse me. Thank you. It's been a joy. Assistant: It has been. (Laughter) Our right human hemisphere is all about this present moment. It's all about "right here, right now." Our right hemisphere, it thinks in pictures and it learns kinesthetically through the movement of our bodies. Information, in the form of energy, streams in simultaneously through all of our sensory systems and then it explodes into this enormous collage of what this present moment looks like, what this present moment smells like and tastes like, what it feels like and what it sounds like. I am an energy-being connected to the energy all around me through the consciousness of my right hemisphere. We are energy-beings connected to one another through the consciousness of our right hemispheres as one human family.

And right here, right now, we are brothers and sisters on this planet, here to make the world a better place. And in this moment we are perfect, we are whole and we are beautiful. My left hemisphere, our left hemisphere, is a very different place. Our left hemisphere thinks linearly and methodically. Our left hemisphere is all about the past and it's all about the future. Our left hemisphere is designed to take that enormous collage of the present moment and start picking out details, and more details about those details. It then categorizes and organizes all that information, associates it with everything in the past we've ever learned, and projects into the future all of our possibilities. And our left hemisphere thinks in language. It's that ongoing brain chatter that connects me and my internal world to my external world. It's that little voice that says to me, "Hey, you've got to remember to pick up bananas on your way home. I need them in the morning." It's that calculating intelligence that reminds me when I have to do my laundry. But perhaps most important, it's that little voice that says to me, "I am. I am." And as soon as my left hemisphere says to me "I am," I become separate. I become a single solid individual, separate from the energy flow around me and separate from you. And this was the portion of my brain that I lost on the morning of my stroke."

5. Object in handen met duiding

Object: Een menselijk brein.

Passage: "And I have brought for you a real human brain. (Groaning, laughter) Object wordt gepakt So this is a real human brain. This is the front of the brain, the back of brain with the spinal cord hanging down, and this is how it would be positioned inside of my head. And when you look at the brain, it's obvious that the two cerebral cortices are completely separate from one another. For those of you who understand computers, our right hemisphere functions like a parallel processor, while our left hemisphere functions like a serial processor. The two hemispheres do communicate with one another through the corpus callosum, which is made up of some 300 million axonal fibers. But other than that, the two hemispheres are completely separate. Because they process information differently, each of our hemispheres think about different things, they care about different things, and, dare I say, they have very different personalities. Excuse me. Thank you. It's been a joy. Assistant: It has been." Object wordt weggelegd

6. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'The morning of the stroke'

Passage: "On the morning of the stroke, I woke up to a pounding pain behind my left eye. And it was the kind of caustic pain that you get when you bite into ice cream. And it just gripped me -- and then it released me. And then it just gripped me -- and then it released me. And it was very unusual for me to ever experience any kind of pain, so I thought, "OK, I'll just start my normal routine." So I got up and I jumped onto my cardio glider, which is a full-body, full-exercise machine. And I'm jamming away on this thing, and I'm realizing that my hands look like primitive claws grasping onto the bar. And I thought, "That's very peculiar." And I looked down at my body and I thought, "Whoa, I'm a weird-looking thing." And it was as though my consciousness had shifted away from my normal perception of reality, where I'm the person on the machine having the experience, to some esoteric space where I'm witnessing myself having this experience. And it was all very peculiar, and my headache was just getting worse. So I get off the machine, and I'm walking across my living room floor, and I realize that everything inside of my body has slowed way down. And every step is very rigid and very deliberate. There's no fluidity to my pace, and there's this constriction in my area of perception, so I'm just focused on internal systems. And I'm standing in my bathroom getting ready to step into the shower, and I could actually hear the dialogue inside of my body. I heard a little voice saying, "OK. You muscles, you've got to contract. You muscles, you relax." And then I lost my balance, and I'm propped up against the

wall. And I look down at my arm and I realize that I can no longer define the boundaries of my body. I can't define where I begin and where I end, because the atoms and the molecules of my arm blended with the atoms and molecules of the wall. And all I could detect was this energy -- energy. And I'm asking myself, "What is wrong with me? What is going on?" And in that moment, my left hemisphere brain chatter went totally silent. Just like someone took a remote control and pushed the mute button. Total silence. And at first I was shocked to find myself inside of a silent mind. But then I was immediately captivated by the magnificence of the energy around me. And because I could no longer identify the boundaries of my body, I felt enormous and expansive. I felt at one with all the energy that was, and it was beautiful there. Then all of a sudden my left hemisphere comes back online and it says to me, "Hey! We've got a problem! We've got to get some help." And I'm going, "Ahh! I've got a problem!" (Laughter) So it's like, "OK, I've got a problem." But then I immediately drifted right back out into the consciousness -- and I affectionately refer to this space as La La Land. But it was beautiful there. Imagine what it would be like to be totally disconnected from your brain chatter that connects you to the external world. So here I am in this space, and my job, and any stress related to my job -- it was gone. And I felt lighter in my body. And imagine all of the relationships in the external world and any stressors related to any of those -- they were gone. And I felt this sense of peacefulness. And imagine what it would feel like to lose 37 years of emotional baggage! (Laughter) Oh! I felt euphoria -- euphoria. It was beautiful. And again, my left hemisphere comes online and it says, "Hey! You've got to pay attention. We've got to get help." And I'm thinking, "I've got to get help. I've got to focus." So I get out of the shower and I mechanically dress and I'm walking around my apartment, and I'm thinking, "I've got to get to work. Can I drive?" And in that moment, my right arm went totally paralyzed by my side. Then I realized, "Oh my gosh! I'm having a stroke!" And the next thing my brain says to me is, Wow! This is so cool! (Laughter) This is so cool! How many brain scientists have the opportunity to study their own brain from the inside out?" (Laughter) And then it crosses my mind, "But I'm a very busy woman!" (Laughter) "I don't have time for a stroke!" So I'm like, "OK, I can't stop the stroke from happening, so I'll do this for a week or two, and then I'll get back to my routine. OK. So I've got to call help. I've got to call work." I couldn't remember the number at work, so I remembered, in my office I had a business card with my number. So I go into my business room, I pull out a three-inch stack of business cards. And I'm looking at the card on top and even though I could see clearly in my mind's eye what my business card looked like, I couldn't tell if this was my card or not, because all I could see were pixels. And the pixels of the words blended with the pixels of the background and the pixels of the symbols, and I just couldn't tell. And then I would wait for what I call a wave of clarity. And in that moment, I would be able to reattach to normal reality and I could tell that's not the card... that's not the card. It took me 45 minutes to get one inch down inside of that stack of cards. In the meantime, for 45 minutes, the hemorrhage is getting bigger in my left hemisphere. I do not understand numbers, I do not understand the telephone, but it's the only plan I have. So I take the phone pad and I put it right here. I take the business card, I put it right here, and I'm matching the shape of the squiggles on the card to the shape of the squiggles on the phone pad. But then I would drift back out into La La Land, and not remember when I came back if I'd already dialed those numbers. So I had to wield my paralyzed arm like a stump and cover the numbers as I went along and pushed them, so that as I would come back to normal reality, I'd be able to tell, "Yes, I've already dialed that number." Eventually, the whole number gets dialed and I'm listening to the phone, and my colleague pick up the phone and he says to me, "Woo woo woo woo." (Laughter) (Laughter) And I think to myself, "Oh my gosh, he sounds like a Golden Retriever!" (Laughter) And so I say to him -- clear in my mind, I say to him: "This is Jill! I need help!" And what comes out of my voice is, "Woo woo woo

woo woo." I'm thinking, "Oh my gosh, I sound like a Golden Retriever." So I couldn't know -- I didn't know that I couldn't speak or understand language until I tried. So he recognizes that I need help and he gets me help. And a little while later, I am riding in an ambulance from one hospital across Boston to [Massachusetts] General Hospital. And I curl up into a little fetal ball. And just like a balloon with the last bit of air, just right out of the balloon, I just felt my energy lift and just I felt my spirit surrender. And in that moment, I knew that I was no longer the choreographer of my life. And either the doctors rescue my body and give me a second chance at life, or this was perhaps my moment of transition."

7. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'When I awoke'

Passage: "When I woke later that afternoon, I was shocked to discover that I was still alive. When I felt my spirit surrender, I said goodbye to my life. And my mind was now suspended between two very opposite planes of reality. Stimulation coming in through my sensory systems felt like pure pain. Light burned my brain like wildfire, and sounds were so loud and chaotic that I could not pick a voice out from the background noise, and I just wanted to escape. Because I could not identify the position of my body in space, I felt enormous and expansive, like a genie just liberated from her bottle. And my spirit soared free, like a great whale gliding through the sea of silent euphoria. Nirvana. I found Nirvana. And I remember thinking, there's no way I would ever be able to squeeze the enormousness of myself back inside this tiny little body. But then I realized, "But I'm still alive! I'm still alive, and I have found Nirvana. And if I have found Nirvana and I'm still alive, then everyone who is alive can find Nirvana."

8. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: De spreker samen met haar moeder.

Passage: "Two and a half weeks after the hemorrhage, the surgeons went in, and they removed a blood clot the size of a golf ball that was pushing on my language centers. Here I am with my mama, who is a true angel in my life. It took me eight years to completely recover."

9. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een schildering van het menselijk brein met daarboven de tekst: 'Who are we?'

Passage: "So who are we? We are the life-force power of the universe, with manual dexterity and two cognitive minds. And we have the power to choose, moment by moment, who and how we want to be in the world. Right here, right now, I can step into the consciousness of my right hemisphere, where we are. I am the life-force power of the universe. I am the life-force power of the 50 trillion beautiful molecular geniuses that make up my form, at one with all that is. Or, I can choose to step into the consciousness of my left hemisphere, where I become a single individual, a solid. Separate from the flow, separate from you. I am Dr. Jill Bolte Taylor: intellectual, neuroanatomist. These are the "we" inside of me. Which would you choose? Which do you choose? And when? I believe that the more time we spend choosing to run the deep inner-peace circuitry of our right hemispheres, the more peace we will project into the world, and the more peaceful our planet will be. And I thought that was an idea worth spreading. Thank you."
(Applause)

Spreker: Pranav Mistry

Titel: The thrilling potential of SixthSense technology

Totale tijd: 11:34 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in zijn hand om de slides te bedienen.

1. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Objects ~ gestures’

Passage: “objects, one other thing automatically comes attached to that thing, and that is gestures: how we manipulate these objects, how we use these objects in everyday life.”

2. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Objects ~ how we use them’

Passage: “So, I am very interested, from the beginning.”

3. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘How can we leverage our knowledge about everyday objects and how we use them to our interaction with the digital world?’

Passage: “how our knowledge about everyday objects and gestures, and how we use these objects, can be leveraged to our interactions with the digital world.”

4. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een muis en een toetsenbord.

Passage: “mouse on my desk.”

5. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een muis.

Passage: “Rather than using it for my computer, I actually opened it.

6. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Een opengelegde muis waar vervolgens twee lijntjes verschijnen om aan te geven waar de rollers zitten.

Passage: “Most of you might be aware that, in those days, the mouse used to come with a ball inside, and there were two rollers that actually guide the computer where the ball is moving, and, accordingly, where the mouse is moving.

7. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee opengelegde muizen met daarin aangegeven dat er vier rollers uit komen.

Passage: “four rollers. Interestingly, what I did with these rollers is, basically,”

8. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: De rollers apart in een ander apparaatje gestopt.

Passage: “I took them off of these mouses and then put them in one line. It had some strings and pulleys and some springs. What I got is basically”

9. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Zijn uitgevonden apparaatje in handen.

Passage: “a gesture-interface device that actually acts as a motion-sensing device made for two dollars.”

10. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een computer die reageert op het technologische apparaatje.

Passage: “So, here, whatever movement I do in my physical world is actually replicated inside the digital world just using this small device that I made,”

11. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een hand die het apparaatje om zijn hand heeft en een kubus vasthoudt.

Passage: “around eight years back, in 2000.”

12. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Een demonstratie van hoe te werken met de SixthSense technologie en sticky notes.

Passage: "I thought of sticky notes. I thought, "Why can I not connect the normal interface of a physical sticky note to the digital world?" A message written on a sticky note to my mom, on paper, can come to an SMS, or maybe a meeting reminder automatically syncs with my digital calendar -- a to-do list that automatically syncs with you. But you can also search in the digital world, or maybe you can write a query, saying, "What is Dr. Smith's address?" and this small system actually prints it out -- so it actually acts like a paper input-output system, just made out of paper."

13. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Een demonstratie van een pen die driedimensionaal kan tekenen.

Passage: "In another exploration, I thought of making a pen that can draw in three dimensions. So, I implemented this pen that can help designers and architects not only think in three dimensions, but they can actually draw, so that it's more intuitive to use that way."

14. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Een demonstratie van de techniek als kaart die voorwerpen herkent.

Passage: "If I put a boarding pass, it will show me where the flight gate is. A coffee cup will show where you can find more coffee, or where you can trash the cup. So, these were some of the earlier explorations I did because the goal was to connect these two worlds seamlessly. Among all these experiments, there was one thing in common."

15. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een man met een projector op zijn hoofd.

Passage: "So, in order to realize this dream, I actually thought of putting a big-size projector on my head. I think that's why this is called a head-mounted projector, isn't it?"

16. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Pranav met een fietshelm op zijn hoofd met daarin een projector.

Passage: "I took it very literally, and took my bike helmet, put a little cut over there so that the projector actually fits nicely."

17. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een hand met om elke vinger een kleurtje dat signalen zendt naar een scherm.

Passage: "So now, what I can do -- I can augment the world around me with this digital information."

18. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Iemand die met een projector op zijn hoofd naar het scherm kijkt.

Passage: "But later, I realized that I actually wanted to interact with those digital pixels, also. So I put a small camera over there that acts as a digital eye."

19. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Iemand met het SixthSense apparaat om. Bij elke functie staat aangegeven wat het precies is, met de woorden: 'camera, color markers, projector, mirror'.

Passage: "Later, we moved to a much better, consumer-oriented pendant version of that, that many of you now know as the SixthSense device."

20. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Demonstratie van hoe de apparatuur werkt.

Passage: "The camera is actually tracking all your gestures. Whatever you're doing with your hands, it's understanding that gesture. And, actually, if you see, there are some color markers that in the beginning version we are using with it. You can start painting on any wall. You stop by a wall, and start painting on that wall. But we are not only tracking one finger, here. We are giving you the freedom of using all of both of your hands, so you can actually use both of your hands to

zoom into or zoom out of a map just by pinching all present. The camera is actually doing -- just, getting all the images -- is doing the edge recognition and also the color recognition and so many other small algorithms are going on inside. So, technically, it's a little bit complex, but it gives you an output which is more intuitive to use, in some sense."

21. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Demonstratie van hoe de apparatuur buiten werkt.

Passage: "But I'm more excited that you can actually take it outside. Rather than getting your camera out of your pocket, you can just do the gesture of taking a photo, and it takes a photo for you. (Applause) Thank you. And later I can find a wall, anywhere, and start browsing those photos or maybe, "OK, I want to modify this photo a little bit and send it as an email to a friend." So, we are looking for an era where computing will actually merge with the physical world. And, of course, if you don't have any surface, you can start using your palm for simple operations. Here, I'm dialing a phone number just using my hand. The camera is actually not only understanding your hand movements, but, interestingly, is also able to understand what objects you are holding in your hand. For example, in this case, the book cover is matched with so many thousands, or maybe millions of books online, and checking out which book it is. Once it has that information, it finds out more reviews about that, or maybe New York Times has a sound overview on that, so you can actually hear, on a physical book, a review as sound. (Video) Famous talk at Harvard University -- This was Obama's visit last week to MIT. (Video) And particularly I want to thank two outstanding MIT -- Pranav Mistry: So, I was seeing the live [video] of his talk, outside, on just a newspaper. Your newspaper will show you live weather information rather than having it updated. You have to check your computer in order to do that, right? (Applause) When I'm going back, I can just use my boarding pass to check how much my flight has been delayed, because"

22. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Demonstratie van hoe de apparatuur werkt op mensen en in de metro.

Passage: "And I think this technology will not only change the way -- (Laughter) Yes. It will change the way we interact with people, also, not only the physical world. The fun part is, I'm going to the Boston metro, and playing a pong game inside the train on the ground, right? (Laughter) And I think the imagination is the only limit of what you can think of"

23. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: De SixthSense technologie op papier.

Passage: "just pinched that -- like I just made a clip out of the microphone -- and clipped that to a piece of paper, any paper that you found around. So now the sound of the touch is getting me when exactly I'm touching the paper. But the camera is actually tracking where my fingers are moving. You can of course watch movies. (Video) Good afternoon. My name is Russell, and I am a Wilderness Explorer in Tribe 54." PM: And you can of course play games. (Car engine) Here, the camera is actually understanding how you're holding the paper and playing a car-racing game. (Applause) Many of you already must have thought, OK, you can browse. Yeah. Of course you can browse to any websites or you can do all sorts of computing on a piece of paper wherever you need it. So, more interestingly, I'm interested in how we can take that in a more dynamic way. When I come back to my desk, I can just pinch that information back to my desktop so I can use my full-size computer. (Applause) And why only computers? We can just play with papers. Paper world is interesting to play with. Here, I'm taking a part of a document, and putting over here a second part from a second place, and I'm actually modifying the information that I have over there. Yeah. And I say, "OK, this looks nice, let me print it out, that thing." So I now have a print-out of that thing. So the workflow is more intuitive, the way we used to do it maybe 20 years back, rather than"

- 24.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een creditcard.
Passage: “will not only”
- 25.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een tennisracket.
Passage: “help us to get”
- 26.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Telefoon afgebeeld op een hand.
Passage: “rid of the digital divide”
- 27.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een Starbucksbeker.
Passage: “the gap between these two”
- 28.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een voorwiel.
Passage: “worlds,”
- 29.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Projectie op een papier.
Passage: “but will also help us,”
- 30.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Horloge geprojecteerd op een arm.
Passage: “in some way,”
- 31.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Boek over ‘ambient findability’.
Passage: “to stay human,”
- 32.** Projectie afbeelding, woord en beeld (S)
Projectie – afbeelding: Projectie van een vrouw op de voorpagina van een krant.
Passage: “to be”
- 33.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Het weerbericht geprojecteerd op een weerkaart in de krant.
Passage: “more connected”
- 34.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Eigenschappen van iemand geprojecteerd op zijn overall.
Passage: “to our physical world.”
- 35.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Snoep.
Passage: -
- 36.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een boardingpass.
Passage: -
- 37.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: De inhoud van een map geprojecteerd op de voorkant.
Passage: -
- 38.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een computerspelletjes geprojecteerd op papier.
Passage: “And it will actually help us”
- 39.** Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Een tekening geprojecteerd op papier.

Passage: “not end up being”

40. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Poppetjes achter computers, het worden er steeds meer.

Passage: “machines sitting in front of other machines. That's all. Thank you. (Applause) Thank you. (Applause)”

Spreker: Mary Roach

Titel: 10 things you didn't know about orgasm

Totale tijd: 16:37 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Ten things you didn't know about orgasm’

Passage: “Alright.”

2. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Een echo van een masturbatie.

Passage: “Okay. Now on the left you can see the hand -- that's the big arrow -- and the penis on the right. The hand hovering. And over here we have, in the words of radiologist Israel Meisner, "The hand grasping the penis in a fashion resembling masturbation movements."”

3. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘2. You don't need genitals’

Passage: “And the orgasm reflex can be triggered by a surprisingly broad range of input.”

4. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘3. You can have them when you're dead’

Passage: “And if you trigger, if you stimulate with an electrode, the precise spot, you will trigger an orgasm. And it is a fact that you can trigger spinal reflexes in dead people”

5. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘4. Orgasm can cause bad breath’

Passage: “According to 1930s marriage manual author, Theodoor van De Velde,”

6. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘5. And cure the hiccups’

Passage: “Okay. In 1999, in the state of Israel, a man began hiccupping.”

7. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘6. Doctors once prescribed orgasm for fertility’

Passage: “In the 1900s, early 1900s, a lot of gynecologists believed that”

8. Projectie – visuele tekst, beeld na woord (S)

Projectie – visuele tekst: ‘6. Doctors once prescribed orgasm for fertility’

Passage: -

9. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘7. Pig farmers still do’

Passage: “All righty.”

10. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: De inseminatie van een varken.

Passage: “So, okay. Now, here we go, la la la, off to work. It all looks very innocent. He's going to be doing things with his hands that the boar would use his snout, lacking hands. Okay. (Laughter)

This is it. The boar has a very odd courtship repertoire. (Laughter) This is to mimic the weight of the boar. (Laughter) You should know, the clitoris of the pig is inside the vagina. So this may be sort of titillating for her. Here we go. (Laughter) And the happy result. (Applause)”

11. Projectie – visuele tekst, woord na beeld (S)

Projectie – visuele tekst: ‘8. Female animals are having more fun than you think’

Passage: “Okay. When I was in Denmark, my host was named Anne Marie. And I said,”

12. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Het gezicht van een aap met een orgasme.

Passage: "This is the ejaculation face of the stump-tailed macaque. (Laughter) And, interestingly, this has been observed in female macaques,”

13. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘9. Studying human orgasm in a lab is not easy’

Passage: “Masters and Johnson. In the 1950s, they decided, okay, we're going to figure out the entire human sexual response cycle, from arousal, all the way through orgasm, in men and women -- everything that happens in the human body. Okay, with women, a lot of this is happening inside. This did not stop Masters and Johnson. They developed an artificial coition machine. This is basically a penis camera on a motor. There is a phallus, clear acrylic phallus, with a camera and a light source, attached to a motor that is kind of going like this. And the woman would have sex with it. That is what they would do. Pretty amazing. Sadly, this device has been dismantled. This just kills me, not because I wanted to use it -- I wanted to see it. (Laughter)”

14. Projectie visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘10 But it sure is entertaining’

Passage: “One fine day, Alfred Kinsey decided to calculate the average distance traveled by ejaculated semen.”

Spreker: Tony Robbins

Titel: Why we do what we do

Totale tijd: 21:44

Bijzonderheden: Veel slides kwamen voor de kijker van de video niet goed in beeld, waardoor er minder projecties zijn opgenomen in deze analyse dan er tijdens de talk verschenen.

1. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Effective leaders have the ability to consistently move themselves and others to action because they understand the “invisible forces” that shape us’

Passage: “They’re only going to get magnified by the very technology that connects us, because it’s making us intersect. That intersection doesn’t always create a view”

2. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Q: What do all these reasons have in common? Based on the perception of lack of resources. Resources vs. resourcefulness. Time Money Technology Contacts Experience Management Creativity Determination Love/Caring Curiosity Passion Resolve.’

Passage: “What do they tell you? Didn't have the -- Didn't have the knowledge, didn't have the money, didn't have the time, didn't have the technology. I didn't have the right manager. Al Gore: Supreme Court. TR: The Supreme Court. (Laughter) (Applause) (Cheering) (Applause continues)

TR: And -- (Applause) What do all those, including the Supreme Court, have in common?

(Laughter) They are a claim to you missing resources, and they may be accurate. You may not have the money, or the Supreme Court, but that is not the defining factor. (Applause) (Laughter) And you correct me if I'm wrong. The defining factor is never resources; it's resourcefulness. And what I mean specifically, rather than just some phrase, is if you have emotion, human emotion, something that I experienced from you the day before yesterday at a level that is as profound as I've ever experienced and I believe with that emotion you would have beat his ass and won.

Audience: Yeah! (Applause) (Cheering) How easy for me to tell him what he should do.

(Laughter) Idiot, Robbins. But I know when we watched the debate at that time, there were emotions that blocked people's ability to get this man's intellect and capacity. And the way that it came across to some people on that day -- because I know people that wanted to vote in your direction and didn't, and I was upset. But there was emotion there. Do you know what I'm talking about? Say, "Aye." Audience: Aye. TR: So, emotion is it. And if we get the right emotion, we can get ourselves to do anything. If you're creative, playful, fun enough, can you get through to anybody, yes or no? If you don't have the money, but you're creative and determined, you find the way. This is the ultimate resource. But this is not the story that people tell us. They tell us a bunch of different stories. They tell us we don't have the resources, but ultimately, if you take a look here, they say, what are all the reasons they haven't accomplished that?"

3. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: '3 Decisions of Destiny. These are the 3 decisions we are making every moment of our lives. 1) What am I going to focus on? Focus – feeling Past/present/future Self or others? 2) What does it mean? Is it the end of the beginning? Are you being punished or rewarded? 3) What are you going to do? Are you going to give up or move forward?'

Passage: "If decisions shape destiny, what determines it is three decisions. What will you focus on? You have to decide what you're going to focus on."

4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Een vrouw en een ambtenaar met daaronder de tekst 'Rosa Parks, 1955'.

Passage: "When a woman stands up and says, "No, I won't go to the back of the bus." She didn't just affect her life."

5. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Iemand die voor een tank staat met daaronder de tekst 'Tiananmen Square, 1989'.

Passage: "That decision shaped our culture. Or someone standing in front of a tank."

6. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Lance Armstrong met daaronder de tekst 'Lance Armstrong 7-time Tour de France champion'.

Passage: "Or being in a position like Lance Armstrong, "You've got testicular cancer." That's pretty tough for any male, especially if you ride a bike."

7. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'The two primary patterns: The invisible forces that shape us 1) In the moment: Our "State": physical/emotional 2) Long-term: Our Model of the World/World View: the shaper of MEANING, EMOTION and ACTION!'

Passage: "It wasn't your ability; it was your state. Your model of the world is what shapes you long term. Your model of the world is the filter."

Spreker: Dan Pink

Titel: The puzzle of motivation

Totale tijd: 18:36

Bijzonderheden: De spreker krijgt op 1:47 een afstandsbediening in zijn handen om de slides te bedienen.

1. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een tafel met daarop een kaars, een doosje punaises en lucifers, met daarboven de tekst 'The candle problem'.

Passage: “take a look at this. This is called the candle problem. Some of you might know it. It's created in 1945 by a psychologist named Karl Duncker. He created this experiment that is used in many other experiments in behavioral science. And here's how it works. Suppose I'm the experimenter. I bring you into a room. I give you a candle, some thumbtacks and some matches. And I say to you, "Your job is to attach the candle to the wall so the wax doesn't drip onto the table." Now what would you do? Many people begin trying to thumbtack the candle to the wall. Doesn't work. I saw somebody kind of make the motion over here -- some people have a great idea where they light the match, melt the side of the candle, try to adhere it to the wall. It's an awesome idea. Doesn't work. And eventually, after five or ten minutes, most people figure out the”

2. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een tafel met daarop punaises en lucifers waarboven een kaars in een bakje aan de muur hangt, met daarboven de tekst ‘The candle problem’.

Passage: “solution, which you can see here. The key is to overcome what's called functional fixedness. You look at that box and you see it only as a receptacle for the tacks. But it can also have this other function, as a platform for the candle. The candle problem. I want to tell you about an experiment using the candle problem, done by a scientist named Sam Glucksberg, who is now at Princeton University, US, This shows the power of incentives. He gathered his participants and said: "I'm going to time you, how quickly you can solve this problem." To one group he said, "I'm going to time you to establish norms, averages for how long it typically takes someone to solve this sort of problem.” To the second group he offered rewards.”

3. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘There’s a mismatch between what science knows and what business does’

Passage: “If you look at the science, there is a mismatch between what science knows and what business does. What's alarming here is that our business operating system -- think of the set of assumptions and protocols beneath our businesses, how we motivate people, how we apply our human resources-- it's built entirely around these extrinsic motivators, around carrots and sticks. That's actually fine for many kinds of 20th century tasks. But for 21st century tasks, that mechanistic, reward-and-punishment approach doesn't work, often doesn't work, and often does harm. Let me show you. Glucksberg did another similar experiment, he presented the problem in a slightly different way, like this up here.”

4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie visuele tekst en afbeelding: Een tafel met daarop punaises, een bakje, lucifers en een kaars, met daarboven de tekst ‘The candle problem’. Even later verschijnt er achter die tekst nog de tekst ‘for dummies’.

Passage: “Attach the candle to the wall so the wax doesn't drip onto the table. Same deal. You: we're timing for norms. You: we're incentivizing. What happened this time? This time, the incentivized group kicked the other group's butt. Why? Because when the tacks are out of the box, it's pretty easy isn't it? (Laughter) If-then rewards work really well for those sorts of tasks, where there is a simple set of rules and a clear destination to go to. Rewards, by their very nature, narrow our focus, concentrate the mind; that's why they work in so many cases. So, for tasks like this, a narrow focus, where you just see the goal right there, zoom straight ahead to it, they work really well. But for the real candle problem, you don't want to be looking like this. The solution is on the periphery. You want to be looking around. That reward actually narrows our focus and restricts our possibility. Let me tell you why this is so important. In western Europe, in many parts of Asia, in North America, in Australia, white-collar workers are doing less of this kind of work, and more of”

5. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een tafel met daarop een kaars, een doosje punaises en lucifers, met daarboven de tekst ‘The candle problem’.

Passage: “this kind of work. That routine, rule-based, left-brain work -- certain kinds of accounting, financial analysis, computer programming-- has become fairly easy to outsource, fairly easy to automate. Software can do it faster. Low-cost providers can do it cheaper. So what really matters are the more right-brained creative, conceptual kinds of abilities. Think about your own work. Think about your own work. Are the problems that you face, or even the problems we've been talking about here, do they have a clear set of rules, and a single solution? No. The rules are mystifying. The solution, if it exists at all, is surprising and not obvious. Everybody in this room is dealing with their own version of the candle problem. And for candle problems of any kind, in any field, those if-then rewards, the things around which we've built so many of our businesses, don't work! It makes me crazy. And here's the thing. This is not a feeling. Okay? I'm a lawyer; I don't believe in feelings. This is not a philosophy. I'm an American; I don't believe in philosophy. (Laughter) This is a fact -- or, as we say in my hometown of Washington, D.C., a true fact. (Laughter) (Applause) Let me give you an example. Let me marshal the evidence here. I'm not telling a story, I'm making a case. Ladies and gentlemen of the jury, some evidence: Dan Ariely, one of the great economists of our time, he and three colleagues did a study of some MIT students. They gave these MIT students a bunch of games, games that involved creativity, and motor skills, and concentration. And they offered them, for performance, three levels of rewards: small reward, medium reward, large reward. If you do really well you get the large reward, on down. What happened?”

6. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: “As long as the task involved only mechanical skill, bonuses worked as they would be expected: the higher the pay, the better the performance” D. Ariely, U. Gneezy, G. Lowenstein, & N. Mazar, Federal Reserve Bank of Boston Working Paper No. 05-11, July 2005; NY Times, 20 Nov. 08’

Passage: “As long as the task involved only mechanical skill bonuses worked as they would be expected: the higher the pay, the better the performance. Okay?”

7. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: “But once the task called for “even rudimentary cognitive skill”, a larger reward “led to poorer performance” D. Ariely, U. Gneezy, G. Lowenstein, & N. Mazar, Federal Reserve Bank of Boston Working Paper No. 05-11, July 2005; NY Times, 20 Nov. 08’

Passage: “But once the task called for even rudimentary cognitive skill, a larger reward led to poorer performance. Then they said, “Let's see if there's any cultural bias here. Let's go to Madurai, India and test it.” Standard of living is lower. In Madurai, a reward that is modest in North American standards, is more meaningful there.”

8. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘In eight of the nine tasks we examined across the three experiments, higher incentives led to worse performance. D. Ariely, U. Gneezy, G. Lowenstein, & N. Mazar, Federal Reserve Bank of Boston Working Paper No. 05-11, July 2005; NY Times, 20 Nov. 08’

Passage: “In eight of the nine tasks we examined across three experiments, higher incentives led to worse performance. Is this some kind of touchy-feely socialist conspiracy going on here? No, these are economists from MIT, from Carnegie Mellon, from the University of Chicago. Do you know who sponsored this research? The Federal Reserve Bank of the United States. That's the American experience. Let's go across the pond to the London School of Economics,”

9. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘We find that financial incentives...can result in a negative impact on overall performance. Dr. Bernd Irlenbusch, London School of Economics.’

Passage: ““We find that financial incentives can result in a negative impact on overall performance.” There is a mismatch between what science knows and what business does. And what worries me, as we stand here in the rubble of the economic collapse, is that too many organizations are making their decisions, their policies about talent and people, based on assumptions that are outdated, unexamined, and rooted more in folklore than in science. And if we really want to get out of this economic mess, if we really want high performance on those definitional tasks of the 21st century, the solution is not to do more of the wrong things, to entice people with a sweeter carrot,”

10. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Autonomy Mastery Purpose’

Passage: “autonomy, mastery and purpose. Autonomy: the urge to direct our own lives. Mastery: the desire to get better and better at something that matters. Purpose: the yearning to do what we do in the service of something larger than ourselves. These are the building blocks of an entirely new operating system for our businesses. I want to talk today only about autonomy. In the 20th century, we came up with this idea of management. Management did not emanate from nature. Management is not a tree, it's a television set. Somebody invented it. It doesn't mean it's going to work forever. Management is great. Traditional notions of management are great if you want compliance. But if you want engagement, self-direction works better. Some examples of some kind of radical notions of self-direction. You don't see a lot of it, but you see the first stirrings of something really interesting going on, what it means is paying people adequately and fairly, absolutely -- getting the issue of money off the table, and then giving people lots of autonomy. Some examples. How many of you have heard of the company Atlassian? It looks like less than half. (Laughter) Atlassian is an Australian software company. And they do something incredibly cool. A few times a year they tell their engineers, "Go for the next 24 hours and work on anything you want, as long as it's not part of your regular job. Work on anything you want." Engineers use this time to come up with a cool patch for code, come up with an elegant hack. Then they present all of the stuff that they've developed to their teammates, to the rest of the company, in this wild and woolly all-hands meeting at the end of the day. Being Australians, everybody has a beer.”

11. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘FEDEX DAYS’

Passage: “They call them FedEx Days. Why?”

12. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘20 percent time’

Passage: “It's worked so well that Atlassian has taken it to the next level with 20% time -- done, famously, at Google”

13. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘ROWE’

Passage: “something called the Results Only Work Environment (the ROWE), created by two American consultants, in place at a dozen companies around North America. In a ROWE people don't have schedules. They show up when they want. They don't have to be in the office at a certain time, or any time. They just have to get their work done. How they do it, when they do it, where they do it, is totally up to them. Meetings in these kinds of environments are optional. What happens? Almost across the board, productivity goes up, worker engagement goes up, worker satisfaction goes up, turnover goes down. Autonomy, mastery and purpose, the building blocks of a new way of doing things. Some of you might look at this and say, "Hmm, that sounds nice, but it's Utopian." And I say, "Nope. I have proof." The mid-1990s, Microsoft started an encyclopedia

called Encarta. They had deployed all the right incentives, They paid professionals to write and edit thousands of articles. Well-compensated managers oversaw the whole thing to make sure it came in on budget and on time. A few years later, another encyclopedia got started. Different model, right? Do it for fun. No one gets paid a cent, or a euro or a yen. Do it because you like to do it. Just 10 years ago, if you had gone to an economist, anywhere, "Hey, I've got these two different models for creating an encyclopedia. If they went head to head, who would win?" 10 years ago you could not have found a single sober economist anywhere on planet Earth who would have predicted the Wikipedia model. This is the titanic battle between these two approaches. This is the Ali-Frazier of motivation, right? This is the Thrilla in Manila. Intrinsic motivators versus extrinsic motivators. Autonomy, mastery and purpose, versus carrot and sticks, and who wins? Intrinsic motivation, autonomy, mastery and purpose, in a knockout. Let me wrap up. There is a mismatch between what science knows and what business does. Here is what science knows. One: Those 20th century rewards, those motivators we think are a natural part of business, do work, but only in a surprisingly narrow band of circumstances. Two: Those if-then rewards often destroy creativity. Three: The secret to high performance isn't rewards and punishments, but that unseen intrinsic drive-- the drive to do things for their own sake. The drive to do things cause they matter. And here's the best part. We already know this. The science confirms what we know in our hearts. So, if we repair this mismatch between science and business, if we bring our motivation, notions of motivation into the 21st century, if we get past this lazy, dangerous, ideology of carrots and sticks, we can strengthen our businesses, we can solve a lot of those candle problems, and maybe, maybe -- we can change the world. I rest my case. (Applause)"

Spreker: David Gallo

Titel: Underwater astonishments

Totale tijd: 5:21

1. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: In beeld gebracht wat je ziet als je 2,5 uur afdaalt in het water van de oceaan.

Passage: “and anyone that's had that lovely opportunity knows that for about two and half hours on the way down, it's a perfectly positively pitch-black world. And we used to see the most mysterious animals out the window that you couldn't describe: these blinking lights -- a world of bioluminescence, like fireflies. Dr. Edith Widder -- she's now at the Ocean Research and Conservation Association -- was able to come up with a camera that could capture some of these incredible animals, and that's what you're seeing here on the screen. That's all bioluminescence. Like I said: just like fireflies. There's a flying turkey under a tree. (Laughter) I'm a geologist by training. But I love that. And you see, some of the bioluminescence they use to avoid being eaten, some they use to attract prey, but all of it, from an artistic point of view, is just positively amazing. And a lot of what goes on inside -- There's a fish with glowing eyes, pulsating eyes. Some of the colors are designed to hypnotize, these lovely patterns. And then this last one, one of my favorites, this pinwheel design. Just absolutely amazing, every single dive.”

2. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met daarbij verschillende teksten die een voor een in beeld komen: ‘When moving, octopus cyanea is conspicuous but often changes it appearance / then it settles / ...and disappears.’ Verder loopt er tijd onderin en staat de naam van de schieter van de beelden constant in beeld: ‘Roger T. Hanlon’.

Passage: “But I want to jump up to shallow water now and look at some creatures that are positively amazing. Cephalopods -- head-foots. As a kid I knew them as calamari, mostly.

(Laughter) This is an octopus. This is the work of Dr. Roger Hanlon at the Marine Biological Lab, and it's just fascinating how cephalopods can, with their incredible eyes, sense their surroundings, look at light, look at patterns. Here's an octopus moving across the reef, finds a spot to settle down, curls up and then disappears into the background. Tough thing to do.”

3. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met daarbij verschillende teksten die een voor een in beeld komen: ‘Two males fighting / The male (left) never shows the female his aggressive white pattern - watch him switch’. Verder staat de naam van de schieter van de beelden constant in beeld: ‘Roger T. Hanlon’.

Passage: “In the next bit, we're going to see a couple squid. Now males, when they fight, if they're really aggressive, they turn white. And these two males are fighting. They do it by bouncing their butts together, which is an interesting concept. Now, here's a male on the left and a female on the right, and the male has managed to split his coloration so the female only always sees the kinder, gentler squid in him. (Laughter) Let's take a look at it again. Watch the coloration: white on the right, brown on the left. He takes a step back, he's keeping off the other males by splitting his body, and comes up on the other side -- Bingo! Now, I'm told that's not just a squid phenomenon with males, but I don't know.”

4. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met daarbij een tekst die in beeld verschijnt en weer verdwijnt: ‘Two males fighting’ Verder staat de naam van de schieter van de beelden constant in beeld: ‘Roger T. Hanlon’.

Passage: “This is a Giant Australian Cuttlefish. And there he is, his droopy little eyes up here. But they can do pretty amazing things, too. Here we're going to see one backing into a crevice, and watch his tentacles -- he just pulls them in, makes them look just like algae. Disappears right into the background. Positively amazing. Here's two males fighting. Once again, they're smart enough, these cephalopods; they know not to hurt each other. But look at the patterns that they can do with their skin. That's an amazing thing.”

5. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met daarbij een tekst die in beeld verschijnt en weer verdwijnt: ‘Octopus speed never exceeded the speed of waves/sunlight’ Verder staat de naam van de schieter van de beelden constant in beeld: ‘Roger T. Hanlon’.

Passage: “This guy can make himself look like a rock, and, looking at his environment, can actually slide across the bottom, using the waves and the shadows so he can't be seen. His motion blends right into the background -- the moving rock trick.”

6. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met onderin beeld de naam van de schieter van de beelden: ‘Roger T. Hanlon’.

Passage: “There's a good reason why: the shallow water's full of predators -- here's a barracuda -- and if you're an octopus or a cephalopod, you need to really understand how to use your surroundings to hide.”

7. Projectie – videomateriaal, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en videomateriaal: Verschillende dieren onderwater met daarbij verschillende teksten die een voor een in beeld komen: ‘Octopus vulgaris Grand Cayman, BWI / Slow Motion / Reverse / Octopus is matching: -pattern -color -brightness -texture of the algae’ Verder staat de naam van de schieter van de beelden constant in beeld: ‘Roger T. Hanlon’.

Passage: “And you see that an octopus would stand out very easily there if you couldn't use your camouflage, use your skin to change color and texture. Here's some algae in the foreground -- and an octopus. Ain't that amazing? Now, Roger spooked him, so he took off in a cloud of ink, and when he lands, the octopus says, "Oh, I've been seen. The best thing to do is to get as big as I can get." That big brown makes his eyespot very big. So, he's bluffing. Let's do it backwards. I thought he was joking when he first showed it to me. I thought it was all graphics. So here it is in reverse. Watch the skin color; watch the skin texture. Just an amazing animal, it can change color and texture to match the surroundings. Watch him blend right into this algae. One, two, three. (Applause) And now he's gone, and so am I. Thank you very much. (Applause)”

Spreker: Dan Gilbert

Titel: The surprising science of happiness

Totale tijd: 21:16 minuten

Bijzonderheden: de spreker heeft een afstandsbediening in zijn hand om de slides te bedienen.

1. Projectie – afbeelding, woord en beeld en Projectie - visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Twee skeletten met daarbij de tekst: ‘Fat head. Homo Habilis 2,000,000 B.C. Homo Sapiens 200,000 B.C.’

Passage: “going from the one-and-a-quarter pound brain of our ancestor here, Habilis, to the almost three-pound meatloaf that everybody here has between their ears. What is it about a big brain that nature”

2. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Twee hoofden met daarbij de tekst: ‘Fat head. Homo Habilis 2,000,000 B.C. Homo Sapiens 200,000 B.C.’

Passage: “was so eager for every one of us to have one?”

3. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Plaatje van een oermens die denkt aan een hamburger en een tijger met daarbij de tekst: ‘Fat heads can simulate the future’

Passage: “It turns out the pre-frontal cortex does lots of things, but one of the most important things it does is an experience simulator. Pilots practice in flight simulators so that they don't make real mistakes in planes. Human beings have this marvelous adaptation that they can actually have experiences in their heads before they try them out in real life. This is a trick that none of our ancestors could do, and that no other animal can do quite like we can. It's a marvelous adaptation. It's up there with opposable thumbs and standing upright and language as one of the things that got our species out of the trees and into the shopping mall. (Laughter) All of you have done this. Ben and Jerry's doesn't have liver-and-onion ice cream, and it's not because they whipped some up, tried it and went, "Yuck." It's because, without leaving your armchair, you can simulate that flavor and say "yuck" before you make it.”

4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een foto waarin iemand een cheque vasthoudt met daarop een groot geldbedrag en een foto van een man in een rolstoel. Hierboven staat: ‘Pop Quiz’

Passage: “Here's two different futures that I invite you to contemplate. You can try to simulate them and tell me which one you think you might prefer. One of them is winning the lottery. This is about 314 million dollars. And the other is becoming paraplegic.”

5. Projectie – schematische weergave, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en schematische weergave: Een grafiek waarin het geluksgevoel van twee groepen mensen is weergegeven, met daarboven de tekst: ‘Only Kidding, You Failed’

Passage: "And this is exactly what you expected, isn't it? But these aren't the data. I made these up! These are the data. You failed the pop quiz, and you're hardly five minutes into the lecture. Because the fact is that a year after losing the use of their legs, and a year after winning the lotto, lottery winners and paraplegics are equally happy with their lives."

6. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: 'Dont'worry, everyone fails all the time, Impact Bias: The tendency to overestimate the hedonic impact of future events. -Elections -Romances -Promotions -College tests -Personality tests -Medical tests -Sporting events -Discrimination -Insults -Infidelities -Gambling -Weight Loss -Moving to California –Others'

Passage: "Don't feel too bad about failing the first pop quiz, because everybody fails all of the pop quizzes all of the time. The research that my laboratory has been doing, that economists and psychologists around the country have been doing, has revealed something really quite startling to us, something we call the "impact bias," which is the tendency for the simulator to work badly. For the simulator to make you believe that different outcomes are more different than in fact they really are. From field studies to laboratory studies, we see that winning or losing an election, gaining or losing a romantic partner, getting or not getting a promotion, passing or not passing a college test, on and on, have far less impact, less intensity and much less duration than people expect them to have. This almost floors me -- a recent study showing how major life traumas affect people suggests that if it happened over three months ago, with only a few exceptions, it has no impact whatsoever on your happiness."

7. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een plaatje van Thomas Brown met daarbij de tekst:

'Synthetic Happiness. "I am the happiest man alive. I have that in me that can convert poverty to riches, adversity to prosperity, and I am more invulnerable than Achilles; fortune hath not one place to hit me." Sir Thomas Browne, Religio Medici (1642)'

Passage: ""I am the happiest man alive. I have that in me that can convert poverty to riches, adversity to prosperity. I am more invulnerable than Achilles; fortune hath not one place to hit me.""

8. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een artikel uit de New York Times met de volgende tekst erbij: 'Synthetic Happiness. "I am so much better off, physically, financially, mentally, and in almost every way." Jim Wright "I don't have one minute's regret. It was a glorious experience." Moreese Bickham "I believe it turned out for the best." Harry S. Langerman'

Passage: "As a challenge to myself, since I say this once in a while in lectures, I took a copy of the New York Times and tried to find some instances of people synthesizing happiness. Here are three guys synthesizing happiness. "I am so much better off physically, financially, emotionally, mentally and almost every other way." "I don't have one minute's regret. It was a glorious experience." "I believe it turned out for the best." Who are these characters who are so damn happy?"

9. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een artikel uit de New York Times met de volgende tekst erbij: 'Synthetic Happiness. Jim Wright, disgraced congressman: "I am so much better off, physically, financially, mentally, and in almost every way."'

Passage: "The first one is Jim Wright. Some of you are old enough to remember: he was the chairman of the House of Representatives and he resigned in disgrace when this young Republican named Newt Gingrich found out about a shady book deal he had done. He lost everything."

10. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een artikel uit de New York Times met de volgende tekst erbij: ‘Synthetic Happiness. Moreese Bickham, exonerated inmate: "I don't have one minute's regret. It was a glorious experience."’

Passage: “Moreese Bickham is somebody you've never heard of. Moreese Bickham uttered these words upon being released. He was 78 years old. He'd spent 37 years in a Louisiana State Penitentiary for a crime he didn't commit. [He was ultimately released for good behavior halfway through his sentence.] What did he say about his experience? "I don't have one minute's regret. It was a glorious experience." Glorious! He is not saying, "Well, there were some nice guys. They had a gym." "Glorious," a word we usually reserve for something like a religious experience.”

11. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een artikel uit de New York Times met de volgende tekst erbij: ‘Synthetic Happiness. Harry S. Langerman, non-billionaire: "I believe it turned out for the best."’

Passage: “Harry S. Langerman uttered these words, and he's somebody you might have known but didn't, because in 1949 he read a little article in the paper about a hamburger stand owned by two brothers named McDonalds. And he thought, "That's a really neat idea!" So he went to find them. They said, "We can give you a franchise on this for 3,000 bucks." Harry went back to New York, asked his brother, an investment banker, to loan him the \$3,000, and his brother's immortal words were, "You idiot, nobody eats hamburgers." He wouldn't lend him the money, and of course, six months later Ray Kroc had exactly the same idea. It turns out people do eat hamburgers, and Ray Kroc, for a while, became the richest man in America.”

12. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Afbeelding van Pete Best waarna de volgende tekst in beeld verschijnt: ‘Synthetic Happiness. “I'm happier than I would have been with the Beatles” Pete Best, 1994’.

Passage: “Pete Best, who was the original drummer for the Beatles, until they, you know, sent him out on an errand and snuck away and picked up Ringo on a tour. Well, in 1994, when Pete Best was interviewed -- yes, he's still a drummer; yes, he's a studio musician -- he had this to say: "I'm happier than I would have been with the Beatles." Okay. There's something important”

13. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘The Secret of Happiness. 1. Accrue wealth, power, and prestige. Then lose it. 2. Spend as much of your life in prison as you possibly can. 3. Make someone else really, really rich. 4. Never ever join the Beatles.’

Passage: “(Laughter) Second: spend as much of your life in prison as you possibly can. (Laughter) Third: make somebody else really, really rich. And finally: never ever join the Beatles. (Laughter) OK. Now I, like Ze Frank, can predict your”

14. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Foto's van Mick Jagger en Bill Gates met daarbij de tekst: ‘Synthetic Happiness Vs. Natural Happiness. "You can't always get what you want." "Actually, you can."’

Passage: “"natural happiness." What are these terms? Natural happiness is what we get when we get what we wanted, and synthetic happiness is what we make when we don't get what we wanted. And in our society, we have a strong belief that synthetic happiness is of an inferior kind. Why do we have that belief? Well, it's very simple. What kind of economic engine would keep churning if we believed that not getting what we want could make us just as happy as getting it? With all apologies to my friend Matthieu Ricard, a shopping mall full of Zen monks is not going to be particularly profitable, because they don't want stuff enough. (Laughter) I want to suggest to you

that synthetic happiness is every bit as real and enduring as the kind of happiness you stumble upon when you get exactly what you were aiming for. I'm a scientist, so I'm going to do this not with rhetoric,"

15. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Schilderijen van Monet die van plek worden verwisseld, met daarbij de tekst: 'But is Synthetic Happiness Real? -Rank objects from most to least liked - Choice between #3 en #4; people choose #3 -Re-rank objects -What happens? 1 2 3 4 5 6 most liked least liked/ Liking for owned object increases and liking for unowned object decreases.'

Passage: "but by marinating you in a little bit of data. Let me first show you an experimental paradigm that is used to demonstrate the synthesis of happiness among regular old folks. And this isn't mine. It's a 50-year-old paradigm called the "free choice paradigm." It's very simple. You bring in, say, six objects, and you ask a subject to rank them from the most to the least liked. In this case, because this experiment uses them, these are Monet prints. So, everybody can rank these Monet prints from the one they like the most, to the one they like the least. Now we give you a choice: "We happen to have some extra prints in the closet. We're going to give you one as your prize to take home. We happen to have number three and number four," we tell the subject. This is a bit of a difficult choice, because neither one is preferred strongly to the other, but naturally, people tend to pick number three because they liked it a little better than number four. Sometime later -- it could be 15 minutes; it could be 15 days -- the same stimuli are put before the subject, and the subject is asked to re-rank the stimuli. "Tell us how much you like them now." What happens? Watch as happiness is synthesized. This is the result that has been replicated over and over again. You're watching happiness be synthesized. Would you like to see it again? Happiness! "The one I got is really better than I thought! That other one I didn't get sucks!" That's the synthesis of happiness. (Laughter) Now, what's the right response to that? "Yeah, right!" Now, here's the experiment we did, and I hope this is going to convince you that "Yeah, right!"

16. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Schilderijen van Monet en een vrouw die zielig kijkt met daarbij de tekst: 'But is Synthetic Happiness Real? Anterograde Amnesia 1 2 3 4 5 6 most liked least liked'

Passage: "was not the right response. We did this experiment with a group of patients who had anterograde amnesia. These are hospitalized patients. Most of them have Korsakoff's syndrome, a polyneuritic psychosis. They drank way too much, and they can't make new memories. OK? They remember their childhood, but if you walk in and introduce yourself, and then leave the room, when you come back, they don't know who you are. We took our Monet prints to the hospital. And we asked these patients to rank them from the one they liked the most to the one they liked the least. We then gave them the choice between number three and number four. Like everybody else, they said, "Gee, thanks Doc! That's great! I could use a new print. I'll take number three." We explained we would have number three mailed to them. We gathered up our materials and we went out of the room, and counted to a half hour. (Laughter) Back into the room, we say, "Hi, we're back." The patients, bless them, say, "Ah, Doc, I'm sorry, I've got a memory problem; that's why I'm here. If I've met you before, I don't remember." "Really, you don't remember? I was just here with the Monet prints?" "Sorry, Doc, I just don't have a clue." "No problem, Jim. All I want you to do is rank these for me from the one you like the most to the one you like the least.""

17. Projectie – schematische weergave, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie - visuele tekst en schematische weergave: Een grafiek van het geheugen van amnesiapatiënten met daarbij de tekst 'But is Synthetic Happiness Real?'

Passage: "What do they do? Well, let's first check and make sure they're really amnesiac. We ask these amnesiac patients to tell us which one they own, which one they chose last time, which one is theirs. And what we find is amnesiac patients just guess. These are normal controls, where if I did this with you, all of you would know which print you chose. But if I do this with amnesiac patients, they don't have a clue. They can't pick their print out of a lineup. Here's what normal controls do: they synthesize happiness."

18. Projectie – schematische weergave, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en schematische weergave: Een grafiek van een verandering in het leuker vinden van een schilderij met daarbij de tekst 'Yes, Synthetic Happiness Is Real'

Passage: "Right? This is the change in liking score, the change from the first time they ranked to the second time they ranked. Normal controls show -- that was the magic I showed you; now I'm showing it to you in graphical form -- "The one I own is better than I thought. The one I didn't own, the one I left behind, is not as good as I thought." Amnesiacs do exactly the same thing. Think about this result. These people like better the one they own, but they don't know they own it. "Yeah, right" is not the right response! What these people did when they synthesized happiness is they really, truly changed their affective, hedonic, aesthetic reactions to that poster. They're not just saying it because they own it, because they don't know they own it."

19. Projectie – afbeelding, woord en beeld en Projectie - visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Foto van iemand die zijn hand tegen z'n voorhoofd heeft, met daarbij de tekst 'On average, Nothing Is Average'

Passage: "Now, when psychologists show you bars, you know that they are showing you averages of lots of people. And yet, all of us have this psychological immune system, this capacity to synthesize happiness, but some of us do this trick better than others. And some situations allow anybody to do it more effectively than other situations do."

20. Projectie – afbeelding, woord na beeld en Projectie – visuele tekst, woord na beeld (S)

Projectie visuele tekst en afbeelding: Een stripverhaal met tekst en een titel: 'The Unanticipated Joy of Being Totally Stuck'

Passage: "It turns out that freedom -- the ability to make up your mind and change your mind -- is the friend of natural happiness, because it allows you to choose among all those delicious futures and find the one that you would most enjoy. But freedom to choose, to change and make up your mind, is the enemy of synthetic happiness. And I'm going to show you why. Dilbert already knows, of course. You're reading as I'm talking. "Dogbert's tech support. How may I abuse you?" "My printer prints a blank page after every document." "Why complain about getting free paper?" "Free? Aren't you just giving me my own paper?" "Look at the quality of the free paper compared to your lousy regular paper! Only a fool or a liar would say that they look the same!" "Now that you mention it, it does seem a little silkier!" "What are you doing?" "I'm helping people accept the things they cannot change." Indeed. The psychological immune system works best when we are totally stuck, when we are trapped. This is the difference between dating and marriage. You go out on a date with a guy, and he picks his nose; you don't go out on another date. You're married to a guy and he picks his nose? He has a heart of gold. Don't touch the fruitcake! You find a way to be happy with what's happened."

21. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie visuele tekst en afbeelding: Iemand in een donkere kamer met daarbij de tekst die op verschillende momenten verschijnt: 'The Unanticipated Joy of Being Totally Stuck. -Students make two photo's and choose one to keep and one to relinquish. -The decision is either... -

Reversible (4 days to swap) -Irreversible (can never swap) -Students either -Predict satisfaction 3 days later or -go away and report satisfaction 3 days later -- and then again 6 days after that.’

Passage: “Now, what I want to show you is that people don't know this about themselves, and not knowing this can work to our supreme disadvantage. Here's an experiment we did at Harvard. We created a black-and-white photography course, and we allowed students to come in and learn how to use a darkroom. So we gave them cameras; they went around campus; they took 12 pictures of their favorite professors and their dorm room and their dog, and all the other things they wanted to have Harvard memories of. They bring us the camera; we make up a contact sheet; they figure out which are the two best pictures; and we now spend six hours teaching them about darkrooms. And they blow two of them up, and they have two gorgeous eight-by-10 glossies of meaningful things to them, and we say, "Which one would you like to give up?" They say, "I have to give one up?" "Yes, we need one as evidence of the class project. So you have to give me one. You have to make a choice. You get to keep one, and I get to keep one." Now, there are two conditions in this experiment. In one case, the students are told, "But you know, if you want to change your mind, I'll always have the other one here, and in the next four days, before I actually mail it to headquarters," -- yeah, "headquarters" -- "I'll be glad to swap it out with you. In fact, I'll come to your dorm room, just give me an email. Better yet, I'll check with you. You ever want to change your mind, it's totally returnable." The other half of the students are told exactly the opposite: "Make your choice, and by the way, the mail is going out, gosh, in two minutes, to England. Your picture will be winging its way over the Atlantic. You will never see it again." Half of the students in each of these conditions are asked to make predictions about how much they're going to come to like the picture that they keep and the picture they leave behind. Other students are just sent back to their little dorm rooms and they are measured over the next three to six days on their liking, satisfaction with the pictures. And look at what we find.”

22. Projectie – schematische weergave, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en schematische weergave: Een grafiek van hoe zeer de studenten de foto's waardeerden met daarbij de tekst: ‘The Unanticipated Joy of Being Totally Stuck’

Passage: “First of all, here's what students think is going to happen. They think they're going to maybe come to like the picture they chose a little more than the one they left behind, but these are not statistically significant differences. It's a very small increase, and it doesn't much matter whether they were in the reversible or irreversible condition. Wrong-o. Bad simulators. Because here's what's really happening. Both right before the swap and five days later, people who are stuck with that picture, who have no choice, who can never change their mind, like it a lot! And people who are deliberating -- "Should I return it? Have I gotten the right one? Maybe this isn't the good one? Maybe I left the good one?" -- have killed themselves. They don't like their picture, and in fact even after the opportunity to swap has expired, they still don't like their picture. Why? Because the [reversible] condition is not conducive to the synthesis of happiness.”

23. Projectie – schematische weergave, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en schematische weergave: Een grafiek waarin is opgenomen welke cursus er gekozen wordt met daarbij de tekst: ‘Choosing Joylessness’.

Passage: “Duh! 66 percent of the students, two-thirds, prefer to be in the course where they have the opportunity to change their mind. Hello? 66 percent of the students choose to be in the course in which they will ultimately be deeply dissatisfied with the picture. Because they do not know the conditions under which synthetic happiness grows.”

24. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een plaatje van Shakespeare met daarbij de tekst ‘Beautiful Hyperbole. “Tis nothing good or bad But thinking makes it so”’.

Passage: “The Bard said everything best, of course, and he's making my point here but he's making it hyperbolically: "Tis nothing good or bad / But thinking makes it so." It's nice poetry, but that can't exactly be right. Is there really nothing good or bad? Is it really the case that gall bladder surgery and a trip to Paris are just the same thing? That seems like a one-question IQ test. They can't be exactly the same.”

25. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een plaatje van Adam Smith met daarbij de tekst: ‘Turgid Truth. "The great source of both the misery and disorders of human life seems to arise from overrating the difference between one permanent situation and another -- Some of these situations may, no doubt, deserve to be preferred to others, but none of them can deserve to be pursued with that passionate ardor which drives us to violate the rules either of prudence or of justice, or to corrupt the future tranquility of our minds, either by shame from the remembrance of our own folly, or by remorse for the horror of our own injustice." The Theory of Moral Sentiments, 1759.’

Passage: “In more turgid prose, but closer to the truth, was the father of modern capitalism, Adam Smith, and he said this. This is worth contemplating: "The great source of both the misery and disorders of human life seems to arise from overrating the difference between one permanent situation and another -- Some of these situations may, no doubt, deserve to be preferred to others, but none of them can deserve to be pursued with that passionate ardor which drives us to violate the rules either of prudence or of justice, or to corrupt the future tranquility of our minds, either by shame from the remembrance of our own folly, or by remorse for the horror of our own injustice." In other words: yes, some things are better than others. We should have preferences that lead us into one future over another. But when those preferences drive us too hard and too fast because we have overrated the difference between these futures, we are at risk. When our ambition is bounded, it leads us to work joyfully. When our ambition is unbounded, it leads us to lie, to cheat, to steal, to hurt others, to sacrifice things of real value. When our fears are bounded, we're prudent, we're cautious, we're thoughtful. When our fears are unbounded and overblown, we're reckless, and we're cowardly. The lesson I want to leave you with, from these data, is that our longings and our worries are both to some degree overblown, because we have within us the capacity to manufacture the very commodity we are constantly chasing when we choose experience. Thank you.”

Spreker: Pattie Maes + Pranav Mistry

Titel: Meet the SixthSense interaction

Totale tijd: 8:42

Bijzonderheden: De spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een foto van iemand die het SixthSense-apparaatje om heeft met daarbij de tekst ‘camera, colored caps, projector, mirror, phone, total \$350’

Passage: “And I’m here to unveil our latest effort, and most successful effort so far, which is still very much a work in process. I’m actually wearing the device right now and we’ve sort of cobbled it together with components that are off the shelf -- and that, by the way, only cost 350 dollars at this point in time. I’m wearing a camera, just a simple web cam, a portable, battery-powered projection system with a little mirror. These components communicate to my cell phone in my pocket which acts as the communication and computation device.”

2. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Pranav Mistry die laat zien hoe de SixthSense technologie werkt.

Passage: “And in the video here we see my student Pranav Mistry, who’s really the genius who’s been implementing and designing this whole system. And we see how this system lets him walk up to any surface and start using his hands to interact with the information that is projected in front of him. The system tracks the four significant fingers. In this case, he’s wearing simple marker caps that you may recognize. But if you want a more stylish version, you could also paint your nails in different colors. And the camera basically tracks these four fingers and recognizes any gestures that he’s making so he can just go to, for example, a map of Long Beach, zoom in and out, etc. The system also recognizes iconic gestures such as the “take a picture” gesture, and then takes a picture of whatever is in front of you. And when he then walks back to the Media Lab, he can just go up to any wall and project all the pictures that he’s taken, sort through them and organize them, and re-size them, etc., again using all natural”

3. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Demonstratie van hoe de SixthSense technologie werkt.

Passage: “yes, you also interact using natural gestures, both hands, etc. But the difference here is that you can use any surface, you can walk to up to any surface, including your hand, if nothing else is available, and interact with this projected data. The device is completely portable, and can be -- (Applause)”

4. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Het SixthSense apparaatje in een winkel.

Passage: “in front of you. So we see Pranav here going into the supermarket and he’s shopping for some paper towels. And, as he picks up a product, the system can recognize the product that he’s picking up, using either image recognition or marker technology, and give him the green light or an orange light. He can ask for additional information. So this particular choice here is a”

5. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: De werking van het SixthSense apparaatje in een boekwinkel, bij een krant, een persoon en op een vliegticket.

Passage: “If he picks up a book in the bookstore, he can get an Amazon rating -- it gets projected right on the cover of the book. This is Juan’s book, our previous speaker, which gets a great rating, by the way, at Amazon. And so, Pranav turns the page of the book and can then see additional information about the book -- reader comments, maybe sort of information by his favorite critic, etc. If he turns to a particular page, he finds an annotation by maybe an expert or a friend of ours that gives him a little bit of additional information about whatever is on that particular page. Reading the newspaper -- it never has to be outdated. (Laughter) You can get video annotations of the events that you’re reading about. You can get the latest sports scores, etc. This is a more controversial one. (Laughter) As you interact with someone at TED, maybe you can see a word cloud of the tags, the words that are associated with that person in their blog and personal web

pages. In this case, the student is interested in cameras, etc. On your way to the airport, if you pick up your boarding pass, it can tell you that your flight is delayed, that the gate has changed, etc. And, if you need to know what the current time is, it's as simple as drawing a watch -- (Laughter) (Applause) on your arm.”

6. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Plaatjes van zintuigen rondom een wereldbol. Een ? verandert op een gegeven moment in het ‘zesde zingtuig’.

Passage: “that's where we're at so far in developing this sixth sense that would give us seamless access to all this relevant information about the things that we may come across. My student Pranav,”

7. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Foto's van medewerkers die worden bedankt, met daarbij hun gegevens.

Passage: “But it's not perfect yet, it's very much a work in progress. And who knows, maybe in another 10 years we'll be here with the ultimate sixth sense brain implant. Thank you. (Applause)”

Spreker: Susan Cain

Titel: The power of introverts

Totale tijd: 19:00 minuten

1. Object in handen met duiding

Object: Een zwarte tas.

Passage: “When I was nine years old, I went off to summer camp for the first time. And my mother packed me a suitcase full of books, which to me seemed like a perfectly natural thing to do. Because in my family, reading was the primary group activity. And this might sound antisocial to you, but for us it was really just a different way of being social. You have the animal warmth of your family sitting right next to you, but you are also free to go roaming around the adventureland inside your own mind. And I had this idea that camp was going to be just like this, but better. (Laughter) I had a vision of 10 girls sitting in a cabin cozily reading books in their matching nightgowns. (Laughter) Camp was more like a keg party without any alcohol.

2. Object niet in handen maar wel zichtbaar op het podium

Object: Een zwarte tas.

Passage: “And on the very first day, our counselor gathered us all together and she taught us a cheer that she said we would be doing every day for the rest of the summer to instill camp spirit. And it went like this: "R-O-W-D-I-E, that's the way we spell rowdie. Rowdie, rowdie, let's get rowdie." (Laughter) Yeah. So I couldn't figure out for the life of me why we were supposed to be so rowdy, or why we had to spell this word incorrectly. (Laughter) But I recited a cheer. I recited a cheer along with everybody else. I did my best. And I just waited for the time that I could go off and read my books. But the first time that I took my book out of my suitcase, the coolest girl in the bunk came up to me and she asked me, "Why are you being so mellow?" -- mellow, of course, being the exact opposite of R-O-W-D-I-E. And then the second time I tried it, the counselor came up to me with a concerned expression on her face and she repeated the point about camp spirit and said we should all work very hard to be outgoing. And so I put my books away,”

3. Object in handen met duiding

Object: Een zwarte tas.

Passage: “back in their suitcase, and I put them under my bed, and there they stayed for the rest of the summer.”

4. Object niet in handen maar wel zichtbaar op het podium

Object: Een zwarte tas.

Passage: “And I felt kind of guilty about this. I felt as if the books needed me somehow, and they were calling out to me and I was forsaking them. But I did forsake them and I didn't open that suitcase again until I was back home with my family at the end of the summer. Now, I tell you this story about summer camp. I could have told you 50 others just like it -- all the times that I got the message that somehow my quiet and introverted style of being was not necessarily the right way to go, that I should be trying to pass as more of an extrovert. And I always sensed deep down that this was wrong and that introverts were pretty excellent just as they were. But for years I denied this intuition, and so I became a Wall Street lawyer, of all things, instead of the writer that I had always longed to be -- partly because I needed to prove to myself that I could be bold and assertive too. And I was always going off to crowded bars when I really would have preferred to just have a nice dinner with friends. And I made these self-negating choices so reflexively, that I wasn't even aware that I was making them. Now this is what many introverts do, and it's our loss for sure, but it is also our colleagues' loss and our communities' loss. And at the risk of sounding grandiose, it is the world's loss. Because when it comes to creativity and to leadership, we need introverts doing what they do best. A third to a half of the population are introverts -- a third to a half. So that's one out of every two or three people you know. So even if you're an extrovert yourself, I'm talking about your coworkers and your spouses and your children and the person sitting next to you right now -- all of them subject to this bias that is pretty deep and real in our society. We all internalize it from a very early age without even having a language for what we're doing. Now, to see the bias clearly, you need to understand what introversion is. It's different from being shy. Shyness is about fear of social judgment. Introversion is more about, how do you respond to stimulation, including social stimulation. So extroverts really crave large amounts of stimulation, whereas introverts feel at their most alive and their most switched-on and their most capable when they're in quieter, more low-key environments. Not all the time -- these things aren't absolute -- but a lot of the time. So the key then to maximizing our talents is for us all to put ourselves in the zone of stimulation that is right for us. But now here's where the bias comes in. Our most important institutions, our schools and our workplaces, they are designed mostly for extroverts and for extroverts' need for lots of stimulation. And also we have this belief system right now that I call the new groupthink, which holds that all creativity and all productivity comes from a very oddly gregarious place. So if you picture the typical classroom nowadays: When I was going to school, we sat in rows. We sat in rows of desks like this, and we did most of our work pretty autonomously. But nowadays, your typical classroom has pods of desks -- four or five or six or seven kids all facing each other. And kids are working in countless group assignments. Even in subjects like math and creative writing, which you think would depend on solo flights of thought, kids are now expected to act as committee members. And for the kids who prefer to go off by themselves or just to work alone, those kids are seen as outliers often or, worse, as problem cases. And the vast majority of teachers reports believing that the ideal student is an extrovert as opposed to an introvert, even though introverts actually get better grades and are more knowledgeable, according to research. (Laughter) Okay, same thing is true in our workplaces. Now, most of us work in open plan offices, without walls, where we are subject to the constant noise and gaze of our coworkers. And when it comes to leadership, introverts are routinely passed over for leadership positions, even though introverts tend to be very careful, much less likely to take outside risks -- which is something we might all favor nowadays. And interesting research by Adam Grant at the Wharton School has found that introverted leaders often deliver better outcomes than extroverts do, because when they are managing proactive employees, they're much more likely to let those employees run with their ideas, whereas an extrovert can, quite unwittingly, get so excited about things that they're putting

their own stamp on things, and other people's ideas might not as easily then bubble up to the surface. Now in fact, some of our transformative leaders in history have been introverts. I'll give you some examples. Eleanor Roosevelt, Rosa Parks, Gandhi -- all these people described themselves as quiet and soft-spoken and even shy. And they all took the spotlight, even though every bone in their bodies was telling them not to. And this turns out to have a special power all its own, because people could feel that these leaders were at the helm not because they enjoyed directing others and not out of the pleasure of being looked at; they were there because they had no choice, because they were driven to do what they thought was right. Now I think at this point it's important for me to say that I actually love extroverts. I always like to say some of my best friends are extroverts, including my beloved husband. And we all fall at different points, of course, along the introvert/extrovert spectrum. Even Carl Jung, the psychologist who first popularized these terms, said that there's no such thing as a pure introvert or a pure extrovert. He said that such a man would be in a lunatic asylum, if he existed at all. And some people fall smack in the middle of the introvert/extrovert spectrum, and we call these people ambiverts. And I often think that they have the best of all worlds. But many of us do recognize ourselves as one type or the other. And what I'm saying is that culturally, we need a much better balance. We need more of a yin and yang between these two types. This is especially important when it comes to creativity and to productivity, because when psychologists look at the lives of the most creative people, what they find are people who are very good at exchanging ideas and advancing ideas, but who also have a serious streak of introversion in them. And this is because solitude is a crucial ingredient often to creativity. So Darwin, he took long walks alone in the woods and emphatically turned down dinner-party invitations. Theodor Geisel, better known as Dr. Seuss, he dreamed up many of his amazing creations in a lonely bell tower office that he had in the back of his house in La Jolla, California. And he was actually afraid to meet the young children who read his books for fear that they were expecting him this kind of jolly Santa Claus-like figure and would be disappointed with his more reserved persona. Steve Wozniak invented the first Apple computer sitting alone in his cubicle in Hewlett-Packard where he was working at the time. And he says that he never would have become such an expert in the first place had he not been too introverted to leave the house when he was growing up. Now, of course, this does not mean that we should all stop collaborating -- and case in point, is Steve Wozniak famously coming together with Steve Jobs to start Apple Computer -- but it does mean that solitude matters and that for some people it is the air that they breathe. And in fact, we have known for centuries about the transcendent power of solitude. It's only recently that we've strangely begun to forget it. If you look at most of the world's major religions, you will find seekers -- Moses, Jesus, Buddha, Muhammad -- seekers who are going off by themselves alone to the wilderness, where they then have profound epiphanies and revelations that they then bring back to the rest of the community. So, no wilderness, no revelations. This is no surprise, though, if you look at the insights of contemporary psychology. It turns out that we can't even be in a group of people without instinctively mirroring, mimicking their opinions. Even about seemingly personal and visceral things like who you're attracted to, you will start aping the beliefs of the people around you without even realizing that that's what you're doing. And groups famously follow the opinions of the most dominant or charismatic person in the room, even though there's zero correlation between being the best talker and having the best ideas -- I mean zero. So -- (Laughter) You might be following the person with the best ideas, but you might not. And do you really want to leave it up to chance? Much better for everybody to go off by themselves, generate their own ideas freed from the distortions of group dynamics, and then come together as a team to talk them through in a well-managed environment and take it from there. Now if all this is true, then why are we getting it so wrong? Why are we setting up our schools this way, and our

workplaces? And why are we making these introverts feel so guilty about wanting to just go off by themselves some of the time? One answer lies deep in our cultural history. Western societies, and in particular the U.S., have always favored the man of action over the "man" of contemplation. But in America's early days, we lived in what historians call a culture of character, where we still, at that point, valued people for their inner selves and their moral rectitude. And if you look at the self-help books from this era, they all had titles with things like "Character, the Grandest Thing in the World." And they featured role models like Abraham Lincoln, who was praised for being modest and unassuming. Ralph Waldo Emerson called him "A man who does not offend by superiority." But then we hit the 20th century, and we entered a new culture that historians call the culture of personality. What happened is we had evolved an agricultural economy to a world of big business. And so suddenly people are moving from small towns to the cities. And instead of working alongside people they've known all their lives, now they are having to prove themselves in a crowd of strangers. So, quite understandably, qualities like magnetism and charisma suddenly come to seem really important. And sure enough, the self-help books change to meet these new needs and they start to have names like "How to Win Friends and Influence People." And they feature as their role models really great salesmen. So that's the world we're living in today. That's our cultural inheritance. Now none of this is to say that social skills are unimportant, and I'm also not calling for the abolishing of teamwork at all. The same religions who send their sages off to lonely mountain tops also teach us love and trust. And the problems that we are facing today in fields like science and in economics are so vast and so complex that we are going to need armies of people coming together to solve them working together. But I am saying that the more freedom that we give introverts to be themselves, the more likely that they are to come up with their own unique solutions to these problems. So now I'd like to share with you what's in my suitcase today."

5. Object in handen met duiding

Object: Een zwarte tas met boeken erin.

Passage: "Guess what? Books. I have a suitcase full of books. Here's Margaret Atwood, "Cat's Eye." Here's a novel by Milan Kundera. And here's "The Guide for the Perplexed" by Maimonides. But these are not exactly my books. I brought these books with me because they were written by my grandfather's favorite authors. My grandfather was a rabbi and he was a widower who lived alone in a small apartment in Brooklyn"

6. Object niet in handen maar wel zichtbaar op het podium

Object: Een zwarte tas met boeken

Passage: "that was my favorite place in the world when I was growing up, partly because it was filled with his very gentle, very courtly presence and partly because it was filled with books. I mean literally every table, every chair in this apartment had yielded its original function to now serve as a surface for swaying stacks of books. Just like the rest of my family, my grandfather's favorite thing to do in the whole world was to read. But he also loved his congregation, and you could feel this love in the sermons that he gave every week for the 62 years that he was a rabbi. He would take the fruits of each week's reading and he would weave these intricate tapestries of ancient and humanist thought. And people would come from all over to hear him speak. But here's the thing about my grandfather. Underneath this ceremonial role, he was really modest and really introverted -- so much so that when he delivered these sermons, he had trouble making eye contact with the very same congregation that he had been speaking to for 62 years. And even away from the podium, when you called him to say hello, he would often end the conversation prematurely for fear that he was taking up too much of your time. But when he died at the age of 94, the police had to close down the streets of his neighborhood to accommodate the crowd of people who came out to mourn him. And so these days I try to learn from my grandfather's example in my own way.

So I just published a book about introversion, and it took me about seven years to write. And for me, that seven years was like total bliss, because I was reading, I was writing, I was thinking, I was researching. It was my version of my grandfather's hours of the day alone in his library. But now all of a sudden my job is very different, and my job is to be out here talking about it, talking about introversion. (Laughter) And that's a lot harder for me, because as honored as I am to be here with all of you right now, this is not my natural milieu. So I prepared for moments like these as best I could. I spent the last year practicing public speaking every chance I could get. And I call this my "year of speaking dangerously." (Laughter) And that actually helped a lot. But I'll tell you, what helps even more is my sense, my belief, my hope that when it comes to our attitudes to introversion and to quiet and to solitude, we truly are poised on the brink on dramatic change. I mean, we are. And so I am going to leave you now with three calls for action for those who share this vision. Number one: Stop the madness for constant group work. Just stop it. (Laughter) Thank you. (Applause) And I want to be clear about what I'm saying, because I deeply believe our offices should be encouraging casual, chatty cafe-style types of interactions -- you know, the kind where people come together and serendipitously have an exchange of ideas. That is great. It's great for introverts and it's great for extroverts. But we need much more privacy and much more freedom and much more autonomy at work. School, same thing. We need to be teaching kids to work together, for sure, but we also need to be teaching them how to work on their own. This is especially important for extroverted children too. They need to work on their own because that is where deep thought comes from in part. Okay, number two: Go to the wilderness. Be like Buddha, have your own revelations. I'm not saying that we all have to now go off and build our own cabins in the woods and never talk to each other again, but I am saying that we could all stand to unplug and get inside our own heads a little more often. Number three: Take a good look at what's inside your own suitcase and why you put it there. So extroverts, maybe your suitcases are also full of books. Or maybe they're full of champagne glasses or skydiving equipment. Whatever it is, I hope you take these things out every chance you get and grace us with your energy and your joy. But introverts, you being you, you probably have the impulse"

7. Object in handen met duiding

Object: Een zwarte tas met boeken.

Passage: "to guard very carefully what's inside your own suitcase. And that's okay. But occasionally, just occasionally, I hope you will open up your suitcases for other people to see, because the world needs you and it needs the things you carry."

8. Object niet in handen maar wel zichtbaar op het podium

Object: Een zwarte tas met boeken.

Passage: "So I wish you the best of all possible journeys and the courage to speak softly. Thank you very much. (Applause) Thank you. Thank you. (Applause)"

Spreker: Hans Gosling

Titel: The best stats you've ever seen

Totale tijd: 19:50 minuten

1. Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst: ‘Hans Gosling Karolinska Institutet & gapminder.org

Passage: “About 10 years ago, I took on the task to teach global development to Swedish undergraduate students. That was after having spent about 20 years together with African institutions studying hunger in Africa, so I was sort of expected to know a little about the world. And I started in our medical university, Karolinska”

2. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Pre-test in global health. Which country has highest child mortality? Sri Lanka or Turkey, Poland or South Korea, Malaysia or Russia, Pakistan or Vietnam, Thailand or South-Africa. Swedish students mean +/- CI 1.8 +/- 0.4, Chimpanzees mean 2.5, Swedish professors mean +/- CI 2.4 + 0.4’

Passage: “Institute, an undergraduate course called Global Health. But when you get that opportunity, you get a little nervous. I thought, these students coming to us actually have the highest grade you can get in Swedish college systems -- so I thought, maybe they know everything I'm going to teach them about. So I did a pre-test when they came. And one of the questions from which I learned a lot was this one: "Which country has the highest child mortality of these five pairs?" I put them together, so that in each pair of country, one has twice the child mortality of the other. And this means that it's much bigger a difference than the uncertainty of the data. I won't put you at a test here, but it's Turkey, which is highest there, Poland, Russia, Pakistan and South Africa. And these were the results of the Swedish students. I did it so I got the confidence interval, which is pretty narrow, and I got happy, of course: a 1.8 right answer out of five possible. That means that there was a place for a professor of international health and for my course. (Laughter) But one late night, when I was compiling the report, I really realized my discovery. I have shown that Swedish top students know statistically significantly less about the world than the chimpanzees. (Laughter) Because the chimpanzee would score half right if I gave them two bananas with Sri Lanka and Turkey. They would be right half of the cases. But the students are not there. The problem for me was not ignorance; it was preconceived ideas. I did also an unethical study of the professors of the Karolinska Institute, that hands out the Nobel Prize in Medicine, and they are on par with the chimpanzee there. (Laughter) This is where I realized that there was”

3. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergaven: De wereldpopulatie met daarbij vruchtbaarheidscijfers.

Passage: “really a need to communicate, because the data of what's happening in the world and the child health of every country is very well aware. We did this software which displays it like this: every bubble here is a country. This country over here is China. This is India. The size of the bubble is the population, and on this axis here, I put fertility rate. Because my students, what they said when they looked upon the world, and I asked them, "What do you really think about the world?"”

4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Een plaatje van Kuifje met daarbij de tekst ‘Textbook’.

Passage: “Well, I first discovered that the textbook was Tintin, mainly. (Laughter)”

5. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘We, western world, long life in small family, them, third world short life in large family’

Passage: “And they said, "The world is still 'we' and 'them.' And 'we' is Western world and 'them' is Third World." "And what do you mean with Western world?" I said. "Well, that's long life and small family, and Third World is short life and large family."”

6. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: De wereldpopulatie met daarbij vruchtbaarheidscijfers.

Passage: “So this is what I could display here. I put fertility rate here: number of children per woman: one, two, three, four, up to about eight children per woman. We have very good data since 1962 -- 1960 about -- on the size of families in all countries. The error margin is narrow. Here, I put life expectancy at birth, from 30 years in some countries up to about 70 years. And 1962, there was really a group of countries here that was industrialized countries, and they had small families and long lives. And these were the developing countries: they had large families and they had relatively short lives. Now, what has happened since 1962? We want to see the change. Are the students right? Is it still two types of countries? Or have these developing countries got smaller families and they live here? Or have they got longer lives and live up there? Let's see. We stopped the world then. This is all U.N. statistics that have been available. Here we go. Can you see there? It's China there, moving against better health there, improving there. All the green Latin American countries are moving towards smaller families. Your yellow ones here are the Arabic countries, and they get longer life, but not larger families. The Africans are the green here. They still remain here. This is India; Indonesia is moving on pretty fast. (Laughter) In the '80s here, you have Bangladesh still among the African countries. But now, Bangladesh -- it's a miracle that happens in the '80s: the imams start to promote family planning. They move up into that corner. And in the '90s, we have the terrible HIV epidemic that takes down the life expectancy of the African countries and all the rest of them move up into the corner, where we have long lives and small family, and we have a completely new world. (Applause) (Applause ends) Let me make a comparison directly between the United States of America and Vietnam. 1964. America had small families and long life; Vietnam had large families and short lives. And this is what happens: the data during the war indicate that even with all the death, there was an improvement of life expectancy. By the end of the year, the family planning started in Vietnam; they went for smaller families. And the United States up there is getting for longer life, keeping family size. And in the '80s now, they give up Communist planning and they go for market economy, and it moves faster even than social life. And today, we have in Vietnam the same life expectancy and the same family size here in Vietnam, 2003, as in United States, 1974, by the end of the war. If we don't look in the data, I think we all underestimate the tremendous change in Asia, which was in social change before we saw the economical change.”

7. Projectie - schematische weergave, woord en beeld (D)

Projectie – schematische weergave: De wereldpopulatie met daarbij cijfers van inkomen.

Passage: “ Let's move over to another way here in which we could display the distribution in the world of the income. This is the world distribution of income of people. One dollar, 10 dollars or 100 dollars per day. There's no gap between rich and poor any longer. This is a myth. There's a little hump here. But there are people all the way. And if we look where the income ends up, this is 100 percent the world's annual income. And the richest 20 percent, they take out of that about 74 percent. And the poorest 20 percent, they take about two percent. And this shows that the concept of developing countries is extremely doubtful. We think about aid, like these people here giving aid to these people here. But in the middle, we have most of the world population, and they have now 24 percent of the income. We heard it in other forms. And who are these? Where are the different countries? I can show you Africa. This is Africa. 10% the world population, most in poverty. This is OECD. The rich country. The country club of the U.N. And they are over here on this side. Quite an overlap between Africa and OECD. And this is Latin America. It has everything on this Earth, from the poorest to the richest in Latin America. And on top of that, we can put East Europe, we can put East Asia, and we put South Asia. And how did it look like if we go back in time, to about 1970? Then there was more of a hump. And we have most who lived in absolute

poverty were Asians. The problem in the world was the poverty in Asia. And if I now let the world move forward, you will see that while population increases, there are hundreds of millions in Asia getting out of poverty and some others getting into poverty, and this is the pattern we have today. And the best projection from the World Bank is that this will happen, and we will not have a divided world. We'll have most people in the middle. Of course it's a logarithmic scale here, but our concept of economy is growth with percent. We look upon it as a possibility of percentile increase. If I change this, and take GDP per capita instead of family income, and I turn these individual data into regional data of gross domestic product, and I take the regions down here, the size of the bubble is still the population. And you have the OECD there, and you have sub-Saharan Africa there, and we take off the Arab states there, coming both from Africa and from Asia, and we put them separately, and we can expand this axis, and I can give it a new dimension here, by adding the social values there, child survival. Now I have money on that axis, and I have the possibility of children to survive there. In some countries, 99.7% of children survive to five years of age; others, only 70. And here, it seems, there is a gap between OECD, Latin America, East Europe, East Asia, Arab states, South Asia and sub-Saharan Africa. The linearity is very strong between child survival and money. But let me split sub-Saharan Africa. Health is there and better health is up there. I can go here and I can split sub-Saharan Africa into its countries. And when it bursts, the size of its country bubble is the size of the population. Sierra Leone down there. Mauritius is up there. Mauritius was the first country to get away with trade barriers, and they could sell their sugar -- they could sell their textiles -- on equal terms as the people in Europe and North America. There's a huge difference between Africa. And Ghana is here in the middle. In Sierra Leone, humanitarian aid. Here in Uganda, development aid. Here, time to invest; there, you can go for a holiday. It's a tremendous variation within Africa which we rarely often make -- that it's equal everything. I can split South Asia here. India's the big bubble in the middle. But a huge difference between Afghanistan and Sri Lanka. I can split Arab states. How are they? Same climate, same culture, same religion -- huge difference. Even between neighbors. Yemen, civil war. United Arab Emirates, money, which was quite equally and well used. Not as the myth is. And that includes all the children of the foreign workers who are in the country. Data is often better than you think. Many people say data is bad. There is an uncertainty margin, but we can see the difference here: Cambodia, Singapore. The differences are much bigger than the weakness of the data. East Europe: Soviet economy for a long time, but they come out after 10 years very, very differently. And there is Latin America. Today, we don't have to go to Cuba to find a healthy country in Latin America. Chile will have a lower child mortality than Cuba within some few years from now. Here, we have high-income countries in the OECD. And we get the whole pattern here of the world, which is more or less like this. And if we look at it, how the world looks, in 1960, it starts to move. This is Mao Tse-tung. He brought health to China. And then he died. And then Deng Xiaoping came and brought money to China, and brought them into the mainstream again. And we have seen how countries move in different directions like this, so it's sort of difficult to get an example country which shows the pattern of the world. But I would like to bring you back to about here, at 1960. I would like to compare South Korea, which is this one, with Brazil, which is this one. The label went away for me here. And I would like to compare Uganda, which is there. And I can run it forward, like this. And you can see how South Korea is making a very, very fast advancement, whereas Brazil is much slower. And if we move back again, here, and we put on trails on them, like this, you can see again that the speed of development is very, very different, and the countries are moving more or less in the same rate as money and health, but it seems you can move much faster if you are healthy first than if you are wealthy first. And to show that, you can put on the way of United Arab Emirates. They came from here, a mineral

country. They cached all the oil; they got all the money; but health cannot be bought at the supermarket. You have to invest in health. You have to get kids into schooling. You have to train health staff. You have to educate the population. And Sheikh Zayed did that in a fairly good way. In spite of falling oil prices, he brought this country up here. So we've got a much more mainstream appearance of the world, where all countries tend to use their money better than they used in the past. Now, this is, more or less, if you look at the average data of the countries -- they are like this. Now that's dangerous, to use average data, because there is such a lot of difference within countries. So if I go and look here, we can see that Uganda today is where South Korea was in 1960. If I split Uganda, there's quite a difference within Uganda. These are the quintiles of Uganda. The richest 20 percent of Ugandans are there. The poorest are down there. If I split South Africa, it's like this. And if I go down and look at Niger, where there was such a terrible famine, lastly, it's like this. The 20 percent poorest of Niger is out here, and the 20 percent richest of South Africa is there, and yet we tend to discuss on what solutions there should be in Africa. Everything in this world exists in Africa. And you can't discuss universal access to HIV [medicine] for that quintile up here with the same strategy as down here. The improvement of the world must be highly contextualized, and it's not relevant to have it on regional level. We must be much more detailed. We find that students get very excited when they can use this. And even more, policy makers and the corporate sectors would like to see how the world is”

8. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Met afbeeldingen van organisaties en lijnen tussen de organisaties en daarbij de tekst: ‘Public, internet, data, UN, National, NGO, Boring, Difficult, Expensive’ wordt weergegeven dat data zijn verborgen in databases. Verder ideeën voor een nieuwe aanpak met afbeeldingen van de verschillende organisaties en verbindingen daartussen en de tekst: ‘What is needed? PowerPoint, Freehand, Flash, Illustrator, After, Effects, Design Tools, Databases, Excel, Access, MySQL, XML, Webservice, ODBC Link design to data. gapminder.org’

Passage: “changing. Now, why doesn't this take place? Why are we not using the data we have? We have data in the United Nations, in the national statistical agencies and in universities and other non-governmental organizations. Because the data is hidden down in the databases. And the public is there, and the Internet is there, but we have still not used it effectively. All that information we saw changing in the world does not include publicly-funded statistics. There are some web pages like this, you know, but they take some nourishment down from the databases, but people put prices on them, stupid passwords and boring statistics. (Laughter) And this won't work. (Applause) So what is needed? We have the databases. It's not the new database you need. We have wonderful design tools, and more and more are added up here. So we started a nonprofit venture which, linking data to design, we called Gapminder, from the London Underground, where they warn you, "mind the gap." So we thought Gapminder was appropriate. And we started to write software which could link the data like this. And it wasn't that difficult.”

9. Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst: ‘Public, Animatie, Internet, Data, Liberate, Search’

Passage: “It took some person years, and we have produced animations. You can take a data set and put it there. We are liberating U.N. data, some few U.N. organization. Some countries accept that their databases can go out on the world, but what we really need is, of course, a search function. A search function where we can copy the data up to a searchable format and get it out in the world. And what do we hear when we go around? I've done anthropology on the main statistical units. Everyone says, "It's impossible. This can't be done. Our information is so peculiar in detail, so that cannot be searched as others can be searched. We cannot give the data free to the

students, free to the entrepreneurs of the world." But this is what we would like to see, isn't it? The publicly-funded data is down here. And we would like flowers to grow out on the Net. And one of the crucial points is to make them searchable, and then people can use the different design tool to animate it there. And I have pretty good news for you. I have good news that the present, new Head of U.N. Statistics, he doesn't say it's impossible. He only says, "We can't do it." (Laughter) And that's a quite clever guy, huh? (Laughter) So we can see a lot happening in data in the coming years."

10. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: De inkomsten van wereldburgers.

Passage: "We will be able to look at income distributions in completely new ways. This is the income distribution of China, 1970. This is the income distribution of the United States, 1970.

Almost no overlap. And what has happened? What has happened is this: that China is growing, it's not so equal any longer, and it's appearing here, overlooking the United States. Almost like a ghost, isn't it? (Laughter) It's pretty scary. (Laughter) But I think it's very important to have all this information. We need really to see it."

11. Projectie – schematische weergave, woord en beeld (D)

Projectie – schematische weergave: Een overzicht van internetgebruikers door de jaren heen.

Passage: "And instead of looking at this, I would like to end up by showing the Internet users per 1,000. In this software, we access about 500 variables from all the countries quite easily. It takes some time to change for this, but on the axes, you can quite easily get any variable you would like to have. And the thing would be to get up the databases free, to get them searchable, and with a second click, to get them into the graphic formats, where you can instantly understand them. Now, statisticians don't like it, because they say that this will not show the reality; we have to have statistical, analytical methods. But this is hypothesis-generating. I end now with the world. There, the Internet is coming. The number of Internet users are going up like this. This is the GDP per capita. And it's a new technology coming in, but then amazingly, how well it fits to the economy of the countries. That's why the \$100 computer will be so important. But it's a nice tendency. It's as if the world is flattening off, isn't it? These countries are lifting more than the economy and will be very interesting to follow this over the year, as I would like you to be able to do with all the publicly funded data. Thank you very much. (Applause)"

Spreker: Pamela Meyer

Titel: How to spot a liar

Totale tijd: 18:47

Bijzonderheden: De spreker heeft een afstandsbediening in haar hand om de slides te bedienen.

1. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)
Projectie – visuele tekst en afbeelding: Iemand met een koffer in z'n hand die achter z'n rug gekruiste vingers heeft met daarbij de tekst 'liespotting'.
Passage: "Okay, now I don't want to alarm anybody in this room, but"
2. Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: het door Pamela Meyer geschreven boek 'Liespotting'.
Passage: "no one wants to meet me in person anymore, no, no, no, no, no. They say, "It's okay, we'll email you." (Laughter)"
3. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)
Projectie – visuele tekst en afbeelding: Foto van een koppel dat gearmd loopt, terwijl de man ook een hand geeft aan het meisje ernaast met de tekst 'Truth #1: Lying is a cooperative act'
Passage: "Think about it, a lie has no power whatsoever by its mere utterance. Its power emerges"
4. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en afbeelding: Foto van een zingende man met een gitaar en een meisje in een stoel met daarbij de tekst: 'What a lovely song...and just for me'.
Passage: "Sometimes we're willing participants in deception for the sake of social dignity, maybe to keep a secret that should be kept secret, secret. We say, "Nice song." "Honey, you don't look fat in that, no." Or we say, favorite of the digiratti,"
5. Projectie – afbeelding, woord en beeld (D)
Projectie – afbeelding: Foto's van dubbelagenten en verraders.
Passage: "Or in the case of double agents and traitors, like Robert Hanssen or Aldrich Ames, lies can betray our country, they can compromise our security, they can undermine democracy, they can cause the deaths of those that defend us. Deception is actually serious business."
6. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie visuele tekst en afbeelding: Foto van Henry Oberlander met daarbij de tekst 'only known image'. Er verschijnt een rondje om z'n hoofd.
Passage: "This con man, Henry Oberlander, he was such an effective con man, British authorities say he could have undermined the entire banking system of the Western world. And you can't find this guy on Google; you can't find him anywhere."
7. Projectie – afbeelding, woord en beeld (D)
Projectie – afbeelding: Foto van een adviseur en twee oudere mensen, foto's van extraverte en introverte mensen, foto van een getrouwd stel en foto van een stel in bed.
Passage: "We lie more to strangers than we lie to coworkers. Extroverts lie more than introverts. Men lie eight times more about themselves than they do other people. Women lie more to protect other people. If you're an average married couple, you're going to lie to your spouse in one out of every 10 interactions. Now, you may think that's bad. If you're unmarried, that number drops to three. Lying's complex."
8. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)
Projectie – visuele tekst en afbeelding: Gekruiste vingers met daarbij de tekst 'Truth #2: We are against lying...and covertly for it'
Passage: "It's woven into the fabric of our daily and our business lives. We're deeply ambivalent about the truth. We parse it out on an as-needed basis, sometimes for very good reasons, other times just because we don't understand the gaps in our lives. That's truth number two about lying. We're against lying, but we're covertly for it in ways that our society has sanctioned"
9. Projectie – afbeelding, woord en beeld (S)
Projectie – afbeelding: Afbeeldingen van verhalen uit oude boeken.

Passage: “Think Dante, Shakespeare, the Bible, News of the World. (Laughter) Lying has evolutionary value to us as a species. Researchers have long known that the more intelligent the species, the larger the neocortex, the more likely it is to be deceptive.”

10. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Foto’s van een gorilla met een poesje met daarbij de teks ‘Koko the Gorilla’.

Passage: “Now you might remember Koko. Does anybody remember Koko the gorilla who was taught sign language? Koko was taught to communicate via sign language. Here's Koko with her kitten. It's her cute little, fluffy pet kitten. Koko once blamed her pet kitten for ripping a sink out of the wall. (Laughter) We're hardwired to become leaders of the pack. It starts really, really early.”

11. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een baby.

Passage: “How early? Well babies will fake a cry, pause, wait to see who's coming and then go right back to crying.”

12. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een mannenhoofd op de romp van een baby.

Passage: “One-year-olds learn concealment.”

13. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een kind dat een koekje steelt.

Passage: “Two-year-olds bluff.”

14. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een kind dat lief lacht.

Passage: “Five-year-olds lie outright. They manipulate via flattery.”

15. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een meisje dat uitdagend kijkt.

Passage: “Nine-year-olds, masters of the cover-up.”

16. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van een ongeïnteresseerde studente en haar moeder.

Passage: “By the time you enter college, you're going to lie to your mom in one out of every five interactions.”

17. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Foto van een man die verschikt kijkt met een telefoon in zijn handen en er komen plaatjes bij van spam, foto’s etc. van alles wat je kan bedriegen.

Passage: “By the time we enter this work world and we're breadwinners, we enter a world that is just cluttered with Spam, fake digital friends, partisan media, ingenious identity thieves, world-class Ponzi schemers, a deception epidemic -- in short, what one author calls a post-truth society.”

18. Projectie – afbeelding, woord en beeld en Projectie - visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Foto van Donald Rumsfeld met daarbij de tekst: ““There are known unknowns. That is to say, we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know.” Donald Rumsfeld Feb. 12, 2002’

Passage: “It's been very confusing for a long time now. What do you do?”

19. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Iemand met gekruiste vingers achter z’n rug met daarbij de tekst ‘Pattern #1: Verbal Dodging’.

Passage: “Well, there are steps we can take to navigate our way through the morass. Trained liespotters get to the truth 90 percent of the time. The rest of us, we're only 54 percent accurate.

Why is it so easy to learn? There are good liars and bad liars. There are no real original liars. We all make the same mistakes. We all use the same techniques. So what I'm going to do is I'm going to show you two patterns of deception. And then we're going to look at the hot spots and see if we can find them ourselves. We're going to start with speech.”

20. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Het filmpje waarin Bill Clinton beweert geen seksuele relatie met Monica Lewinsky te hebben gehad.

Passage: “(Video) Bill Clinton: I want you to listen to me. I'm going to say this again. I did not have sexual relations with that woman, Miss Lewinsky. I never told anybody to lie, not a single time, never. And these allegations are false. And I need to go back to work for the American people. Thank you. (Applause)”

21. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Een foto van Clinton met daarbij de tekst "I did not have sexual relations with that woman... Miss Lewinsky" waarbij er onderstrepingen in de tekst worden gezet.

Passage: “Okay, what were the telltale signs? Well first we heard what's known as a non-contracted denial. Studies show that people who are overdetermined in their denial will resort to formal rather than informal language. We also heard distancing language: "that woman." We know that liars will unconsciously distance themselves from their subject, using language as their tool.”

22. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een foto van Freud.

Passage: “Freud had it right. Freud said, look, there's much more to it than speech: "No mortal can keep a secret.”

23. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Foto van Obama, zijn vrouw en Obama's vingertoppen op de arm van Dominique Strauss-Kahn met daarbij de tekst 'Pattern #2: Body Language Slips'

Passage: “Now this brings us to our next pattern, which is body language. With body language, here's what you've got to do. You've really got to just throw your assumptions out the door. Let the science temper your knowledge a little bit.”

24. Projectie – afbeelding, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Twee lachende gezichten. De ene lach is nep, de andere echt.

Passage: “We think warmth and smiles convey honesty, sincerity. But a trained liespotter can spot a fake smile a mile away. Can you all spot the fake smile here?”

25. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: De neppe lach met twee pijlen rondom de mond en de tekst 'Fake Smile'.

Passage: “You can consciously contract the muscles in your cheeks.”

26. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: De echte lach met twee pijlen rondom de ogen en de tekst 'Real Smile'.

Passage: “But the real smile's in the eyes, the crow's feet of the eyes. They cannot be consciously contracted, especially if you overdid the Botox. Don't overdo the Botox; nobody will think you're honest.”

27. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie – visuele tekst en afbeelding: Een man met zijn armen over elkaar en daarbij de tekst 'Finding the Hot Spots'.

Passage: “Now we're going to look at the hot spots. Can you tell what's happening in a conversation? Can you start to find the hot spots to see the discrepancies between someone's words and someone's actions?”

28. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Mensen die in gesprek zijn.

Passage: “Now, I know it seems really obvious, but when you're having a conversation with someone you suspect of deception, attitude is by far the most overlooked but telling of indicators. An honest person is going to be cooperative. They're going to show they're on your side. They're going to be enthusiastic. They're going to be willing and helpful to getting you to the truth. They're going to be willing to brainstorm, name suspects, provide details. They're going to say,”

29. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee mannen in onderhandeling.

Passage: “Now let's say you're having that exact same conversation with someone deceptive. That person may be withdrawn, look down, lower their voice, pause, be kind of herky-jerky. Ask a deceptive person to tell their story, they're going to pepper it with way too much detail in all kinds of irrelevant places. And then they're going to tell their story in strict chronological order. And what a trained interrogator does is they come in and in very subtle ways over the course of several hours, they will ask that person to tell that story backwards, and then they'll watch them squirm,”

30. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (D)

Projectie – visuele tekst en afbeelding: Iemand die in de camera lacht met daarbij de tekst die verschijnt ‘Duping Delight’.

Passage: “Now, that smile is known in the trade as “duping delight.” And we're going to see that in several videos moving forward, but we're going to start”

31. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Een foto van John Edwards.

Passage: “for those of you who don't know him, this is presidential candidate John Edwards who shocked America by fathering a child out of wedlock. We're going to see him talk about getting a paternity test. See now if you can spot him saying, “yes” while shaking his head “no,” slightly shrugging his shoulders.”

32. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Video waarop John Edwards vertelt over zijn zogenaamde buitenechtelijke kind.

Passage: “(Video) John Edwards: I'd be happy to participate in one. I know that it's not possible that this child could be mine, because of the timing of events. So I know it's not possible. Happy to take a paternity test, and would love to see it happen. Interviewer: Are you going to do that soon? Is there somebody -- JE: Well, I'm only one side. I'm only one side of the test. But I'm happy to participate in one.”

33. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van iemand met z'n mondhoek omhoog.

Passage: “It's marked by one lip corner pulled up and in. It's the only asymmetrical expression. And in the presence of contempt, whether or not deception follows -- and it doesn't always follow -- look the other way, go the other direction,”

34. Projectie – afbeelding, woord en beeld en Projectie – visuele tekst, woord en beeld (S)

Projectie visuele tekst en afbeelding: Iemand met een koffer in z'n hand die achter z'n rug gekruiste vingers heeft met daarbij de tekst ‘liespotting’.

Passage: “They will take barrier objects and put them between themselves and the person that is interviewing them.”

35. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Twee foto's van vrouwen waarvan vlak daarna een filmpje zal worden getoond.

Passage: “Now, we've talked a little bit about how to talk to someone who's lying and how to spot a lie. And as I promised, we're now going to look at what the truth looks like. But I'm going to show you two videos, two mothers -- one is lying, one is telling the truth. And these were surfaced by researcher David Matsumoto in California. And I think they're an excellent example of what the truth looks like.”

36. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van Diane Downs.

Passage: “This mother, Diane Downs, shot her kids at close range, drove them to the hospital while they bled all over the car, claimed a scraggy-haired stranger did it. And you'll see when you see the video, she can't even pretend to be an agonizing mother. What you want to look for here is an incredible discrepancy between horrific events that she describes and her very, very cool demeanor. And if you look closely, you'll see duping delight throughout this video.”

37. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Diane Downs aan het woord over de moord op haar kinderen.

Passage: “(Video) Diane Downs: At night when I close my eyes, I can see Christie reaching her hand out to me while I'm driving, and the blood just kept coming out of her mouth. And that -- maybe it'll fade too with time -- but I don't think so. That bothers me the most.”

38. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Foto van de moordenaar in de rechtbank.

Passage: “Here you're going to see no false emotion, just the authentic expression of a mother's agony.”

39. Projectie – videomateriaal, woord en beeld

Projectie – videomateriaal: Erin Runnion aan het woord over de moord op haar kinderen.

Passage: “(Video) Erin Runnion: I wrote this statement on the third anniversary of the night you took my baby, and you hurt her, and you crushed her, you terrified her until her heart stopped. And she fought, and I know she fought you. But I know she looked at you with those amazing brown eyes, and you still wanted to kill her. And I don't understand it, and I never will.”

40. Projectie – afbeelding, woord en beeld (D)

Projectie – afbeelding: Technieken om signalen van het lichaam waar te nemen.

Passage: “specialized eye trackers and infrared brain scans, MRI's that can decode the signals that our bodies send out when we're trying to be deceptive. And these technologies are going to be marketed to all of us as panaceas for deceit, and they will prove incredibly useful some day. But you've got to ask yourself in the meantime: Who do you want on your side of the meeting, someone who's trained in getting to the truth or some guy who's going to drag a 400-pound electroencephalogram through the door?”

41. Projectie – afbeelding, woord en beeld (S)

Projectie – afbeelding: Silhouetten.

Passage: “Liespotters rely on human tools. They know, as someone once said, "Character's who you are in the dark." And what's kind of interesting”

Bijlage 3: berekening Kappa

In deze bijlage is de uitgebreide berekening van de kappa te vinden voor de interbeoordelaarsbetrouwbaarheid

Interbeoordelaarsbetrouwbaarheid: Ave Luth (1e beoordelaar) en Anna Hoogesteger (2e beoordelaar)

1. 16 codes

Technieken

Object in handen zonder duiding = 1

Object in handen met duiding = 2

Object niet in handen, maar wel zichtbaar op het podium = 3

Projectie – afbeelding, woord en beeld = 4

Projectie – afbeelding, woord na beeld = 5

Projectie – afbeelding, beeld na woord = 6

Projectie – schematische weergave, woord en beeld = 7

Projectie – schematische weergave, woord na beeld = 8

Projectie – schematische weergave, beeld na woord = 9

Projectie – videomateriaal, woord en beeld = 10

Projectie – videomateriaal, woord na beeld = 11

Projectie – videomateriaal, beeld na woord = 12

Projectie – visuele tekst, woord en beeld = 13

Projectie – visuele tekst, woord na beeld = 14

Projectie – visuele tekst, beeld na woord = 15

Projectie – afbeelding = 16

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ave *	249	100,0%	0	0,0%	249	100,0%
Anna						

Ave * Anna Crosstabulation

Count

		Anna						Total	
		0	2	4	7	10	13		16
Ave	0	0	0	20	3	0	5	0	28
	2	0	1	0	0	0	0	0	1
	4	0	0	107	0	0	0	1	108
	5	0	0	1	0	0	0	0	1
	7	0	0	0	7	0	0	0	7
	10	1	0	0	0	11	0	0	12
	13	4	0	0	0	0	80	0	84
	14	0	0	0	0	0	2	0	2
	15	0	0	0	0	0	1	0	1
	16	0	0	5	0	0	0	0	5
Total		5	1	133	10	11	88	1	249

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Measure of Agreement	Kappa	,732	,034	17,686	,000
N of Valid Cases		249			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

2. 5 codes

Technieken

Object = 1

Projectie - afbeelding = 2

Projectie - schematische weergave = 3

Projectie - videomateriaal = 4

Projectie - visuele tekst = 5

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Ave * Anna	249	100,0%	0	0,0%	249	100,0%

Ave * Anna Crosstabulation

Count

		Anna					Total
		0	2	3	4	5	
Ave	0	0	20	3	0	5	28
	2	0	115	0	0	0	115
	3	0	0	7	0	0	7
	4	1	0	0	11	0	12
	5	4	0	0	0	83	87
Total		5	135	10	11	88	249

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Measure of Agreement	Kappa	,786	,032	17,926	,000
N of Valid Cases		249			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Interviewers: Anna Hoogesteger, Ave Luth, Jaap de Jong en Martijn Wackers

Ave: Kun je ons iets vertellen over je eerste aanraking met TED, hoe je TED hebt leren kennen en wat het voor jou is?

Caryn: Ik denk dat dat inderdaad via filmpjes gekomen is, zoals bij iedereen eigenlijk hè. Je komt met de filmpjes in aanraking doordat iemand zegt: moet je dit eens zien! Ik kan het voor mezelf niet meer precies achterhalen, wanneer dat was. Ik kwam er toen snel achter, door een beetje te googelen, dat het in Nederland ook bestaat en dat je ernaar toe kunt. Dat klopte niet met het beeld wat ik altijd had. Ik dacht dat je daarvoor moest worden uitgenodigd. Ik denk trouwens dat mijn eerste kennismaking met TED plaatsvond toen ik van Laurens Buijs begreep dat hij was uitgenodigd voor TEDx-Amsterdam. Dat was geloof ik in 2008. Tja en toen kwam ik erachter dat het in Delft ook werd georganiseerd en toen ben ik daar gewoon naartoe gegaan omdat je er in Delft wel zonder uitnodiging heen kunt gaan. Dat wisselt heel erg. Soms moet je worden uitgenodigd of een soort van solliciteren. Na TEDx-Delft ben ik een keer naar TEDx-Utrecht gegaan en daar vond ik een aantal dingen heel erg slecht. Ik heb het daar toen een keer over gehad met de organisator van TEDx Delft. Ik vertelde dat ik een en ander echt niet vond kunnen. Het was een heel leuk gesprek en toen zei hij tegen mij: nou, als je dat allemaal zo goed weet, waarom kom je dan niet bij ons werken, als coach? Dus zo is dat gegaan.

Ave: Als je het in je eigen woorden moet omschrijven, wat TED is, kun je dat?

Caryn: Ja, het is een wereldwijde non-profit natuurlijk, geënt op dat waar het echt om gaat: idea worth spreading. Daar zijn wij een filiaal van. We moeten bepaalde dingen doen om dat filiaal te mogen blijven en vooral bepaalde dingen ook niet doen. Op die manier kunnen we het blijven en worden we opgenomen in een groter verband. Dat betekent niet dat ik denk dat wat wij in Delft doen meteen enorme impact heeft, maar soms wel en je weet soms echt niet hoe het gaat en dat vind ik wel fascinerend. Juist omdat je dit dan faciliteert voor mensen. Dan bied je net iets meer, want iedereen kan er naar luisteren. Tegenwoordig zeker. Toen de grote TED begon in 1984, toen was dat nog niet zo. Nu is het natuurlijk heel makkelijk om zelf een filmpje te maken en een idee te vertellen, maar dat was toen nog niet zo en het was toen ook niet zo dat je dan meteen zo kon doordringen zoals je zou willen misschien. Het idee is ook dat je, als je naar zo'n conferentie gaat, daar ook met mensen verbanden kan leggen.

Ave: Eigenlijk is het dan best klein, als het zo binnen Nederland blijft. Het is niet gelijk dat het heel de wereld bereikt toch?

Caryn: Dat kan wel, maar soms heb je het verhaal ook alleen maar binnen Nederland nodig. Het ligt er heel erg aan wat het is dat je wilt, welk idee je voor het voetlicht wilt brengen.

Ave: Je zei net iets over die regels en dingen waar je je aan moet houden. Kun je daar meer over vertellen?

Caryn: Ja, als curator ben ik daar echt de bewaker van, dat is mijn afdeling. Het lijken drie hele simpele regels waar je aan moet voldoen, die kun je ook overal zo vinden. Ik heb ze bij me. Voor de volledigheid is het wel goed als ik dat even goed uitleg. Ik vergeet er weleens één namelijk. Dat zou een beetje zonde zijn. Het idee is dat je geen religie en politiek op het podium mag hebben. Geen commerciële agenda en je mag ook geen, ja, wat ze dan in het Engels noemen: pseudo-science hebben.

Ave: Dat valt dus niet binnen de doelstelling van TED, die onderwerpen binnen de categorieën die je nu noemt?

Caryn: TED is een Amerikaans bedrijf en het idee is ook dat iedereen zicht thuis moet voelen, dus als jij op het podium gaat staan en zegt: ‘Stem PVDA!’, dan denk ik misschien: Nou, dat is dus niks voor mij. Het heeft er ook mee te maken dat het een bepaalde vrijheid moet hebben denk ik. Ik denk dat je op elkaar af moet kunnen stappen en dat het niet te gekleurd moet worden en dat mensen het podium ook niet voor oneigenlijke doelen gaan gebruiken. Want daar zijn andere podia voor.

Anna: Toen we gingen bepalen wat een TEDtalk nou eigenlijk is, zagen we dat het altijd in het Engels is hè?

Caryn: Dat is niet helemaal waar. De kok, Yuri, bijvoorbeeld niet. We hebben hem gezien als entertainment. Hij deed het in het Nederlands. Je hebt vaak wel TEDtalks die in de taal zijn in het land waar het is. Dat gebeurt wel vaak hoor, met name, het zal je niet verbazen, in Frankrijk heb je geen Engelse TED. Volgens mij heb je ook wel veel Spaanstalige, maar dat weet ik niet precies. Of het is een mix. Volgens mij doet TEDx-Tokio bijvoorbeeld deels Engels en deels Japans. Dat mag wel, maar dan word je niet verspreid. Het idee is dat als je het Engels doet, dat je meer verspreid kunt worden, want we kunnen ervan uitgaan dat bijna iedereen Engels spreekt. Ten tweede is het ook zo dat je dan kan worden opgepikt door ted.com. Als je een conferentie in je moedertaal houdt, dan weet ik niet of je wel wordt opgenomen op ted.com. Volgens mij kon dat in ieder geval niet. Dat was oorspronkelijk het idee, maar nu kunnen we steeds sneller vertalen. Nu gaat dat iets beter volgens mij.

Ave: Is het wel het idee dat een echte TED (zonder x erachter) wel heel erg vergelijkbaar is met de TEDx-evenementen of mag daar best wel een verschil in zitten?

Caryn: Nou, het format lijkt er wel op, maar weet je wat het grappige is: iedere TEDx is anders, want het wordt door mensen gemaakt. Dus als Rob en ik er één maken dan is die anders dan als jullie twee dat zouden doen en dat scheelt ook heel erg per stad. Het is maar wie zich geroepen voelt dat te doen. TEDx-Leiden is echt heel anders dan wat wij doen. Leiden is ook een andere stad dan Delft, dus dat is ook niet erg. En ik geloof dat wij best wel streng zijn met regels. We hebben best wel strenge dingen waar een spreker aan moet voldoen en dat doen ze gewoon niet overal zo. We maken het onszelf best moeilijk.

Jaap: Hoe zijn jullie anders dan Leiden?

Caryn: Ze hebben in Leiden wat meer vagere thema's zoals abundance. Dat soort dingen. Ze zijn er ook minder streng in hoe je als spreker daar in moet passen. Dat snap ik ook wel want ja, abundance, eigenlijk kun je daar van alles in passen. Een belangrijk punt daarin is ook de vergunning. Rob heeft een vergunning voor meer dan 100 mensen en in Leiden hebben ze die niet.

Ave: En dat is omdat je dan zelf in Amerika moet zijn geweest toch?

Caryn: Ja, een soort opleidinkje moet je doen. Dat stelt niet heel veel voor, maar dan willen ze wel even weten wie het dan is.

Anna: En dat gaat dan om publiek neem ik aan.

Caryn: Ja, meer dan 100. Bij TED is het zo: je mag op een gegeven moment tot 100 gaan als je nog niet in Amerika geweest bent, maar daarna mag je meteen Ahoy...Dus dan maakt dat niet meer uit.

Jaap: Leiden heeft maar tot 100?

Caryn: Last time I checked wel ja.

Ave: Dat is dus ook één van de regels.

Caryn: Ja.

Ave: We hebben het al even gehad over de doelstelling van TED, is dat ook hetzelfde doel dat de spreker heeft? Als hij daar op het podium staat? Of zeg je: daar kan ik niks over zeggen want ik ben geen spreker?

Caryn: Op zich kun je daar niets over zeggen, maar misschien komen we wel een heel eind want we kennen er wel een paar. Ik heb het idee dat heel veel mensen ja zeggen omdat ze dan gebruik kunnen maken van het merk. En van de PR die wij hebben. Want het ziet er net even wat smoother uit als je een filmpje van ons hebt. Dan ziet men dat je bent uitgenodigd voor een TEDx bijeenkomst en niet op je zolderkamer zit met je telefoon. En dat is vaak waar het om gaat, dat is de reden, want ze krijgen er niks voor. Ze worden niet betaald. Misschien wordt er eens een keer een treinkaartje vergoed als we een keer een meevallertje hebben en dat is het. Ze worden bij ons dan gecoacht en dat is natuurlijk ook, lijkt mij wel een pré, maar dat is niet overal zo. Dus ik heb het idee dat dat het is. Een imago en PR ding en dat je ook misschien op die bijeenkomst kunt netwerken en dat je met dat filmpje ook wel weer veel meer deuren open zou kunnen zien gaan dan zonder.

Anna: Coach is dus ook niet een verplicht element.

Caryn: Nee, wel vanuit Tedx Delft.

Ave: Maar die sprekers moeten uiteraard wel dat idee van TED meenemen, denk ik, als ze spreken, want ze zitten wel binnen een bepaalde conferentie en dat moeten ze wel weten natuurlijk.

Caryn: Ja, ze moeten in het format zitten. Dat zie je bijvoorbeeld ook in de uitnodiging die ze al krijgen. Ze moeten ook een contract tekenen met ons waardoor ze niet naar nog drie andere TEDx kunnen gaan.

Jaap: Wel naar één andere, mag dat?

Caryn: Ja, dat mag wel, officieel doen wij dat niet. Wij willen niet dat iemand ook op een andere TEDx staat of heeft gestaan. Maar dat heeft een beetje meer met iets anders te maken.

Jaap: Als je Steve Jobs nou zou kunnen krijgen (dat kan nou niet meer, maar...)

Caryn: Ja, dan gaan we inderdaad echt niet zeggen dat hij niet mag komen. Maar het is meer: er is zo'n overvloed aan mensen die toffe ideeën hebben, ze zitten overal, maar je moet ze wel vinden, dus als je dan bij wijze van spreken allemaal je sprekers dezelfde sprekers laat zijn, dan vind ik dat een beetje zonde.

Anna: Maar als iemand nou bijvoorbeeld 10 jaar geleden een keer met een heel ander onderwerp....

Caryn: Nee, tuurlijk. We hebben er zelfs nog even over gedacht. Er was één van onze docenten op de TU, die deed best iets leuks, iets met afstandsonderwijs. Er zijn daaruit al de eerste resultaten gekomen. Mensen kunnen opeens zelf zonnepanelen maken, best wel leuk! Daarmee hebben ze veel meer elektriciteit, dus meer internet, dus veel meer toegang tot de wereld, zelfs op de gekste plekken, op bergen in Zuid-Amerika bijvoorbeeld. Die man stond ook in diezelfde periode op TEDx Venlo. Hij had daar al ja tegen gezegd en kwam ook uit Venlo, oorspronkelijk. Toen heeft hij dat toch gedaan. We zeiden: 'Het mag wel, maar dan moet je het daar wel over iets heel anders hebben,

dan kan het wel.’ Maar ik denk dat hijzelf al het idee had dat het elkaar teveel zou gaan bijten. Jaap: Over de doelstelling, ik weet nu vrij goed wat de doelstelling van TED niet is, maar wat is het wel?

Caryn: Ja, dat is een lastige, want je hebt heel veel verschillende soorten sprekers en daar maakt TED ook een heel mooi onderscheid in. Ze zeggen: ‘Je heb dit soort talks, je hebt dat soort talks...’ Ja, er zijn natuurlijk ideeën over hoe je iets zelf in je leven kunt veranderen, er zijn ook ideeën over zo maak je een robot of kijk eens hoe leuk, hoe nieuw dit is en dat kan allemaal nogal van elkaar verschillen, maar wat ze wel gemeen hebben is dat het nieuw moet zijn. En als het niet helemaal nieuw is, moet het wel zo’n andere invalshoek hebben dat je denkt: Wow, dat is weer een heel andere manier om er naar te kijken. En nou wordt dat al steeds lastiger af en toe. Dat is wel één van de kritieken die wij nu hebben gehad (van twee bloggers, dus ik lig er niet wakker van): ‘Ja, dat wat die Roeland Dietvorst zei, met die breindingen, dat wisten we allemaal al.’ Ja, dat kan wel als jij dat toevallig hebt gelezen, maar het TEDx podium is er ook om het juist wat algemener en wat meer bekend te maken bij een publiek dat dat anders niet zou lezen. Er zijn dan ook van die mensen die de Kijk lezen en zeggen: ‘Ja, dat wist ik al.’

Ave: Dus het gaat er ook wel om dat niet drie mensen het al op hun zolderkamertje ergens zijn tegengekomen.

Caryn: Ja ook, maar dat bruin vet, waar de eerste spreker over sprak, daarvan is ook redelijk bekend dat dat bestaat en als je de wetenschapsbijlage van de NRC elke week spelt, wist je dat misschien wel, maar nu is het wel leuk om dat ook heel toepasbaar te krijgen.

Anna: Ja, wij vroegen ons af waar ga je nou beginnen met zoeken naar mensen om zo’n conferentie mee te vullen. Waar begin je.

Caryn: Ik weet dat de tip van TED altijd is dat je lokale media goed in de gaten moet houden. Rob doet dat dan ook. Bijna religieus. Je hebt het Witte Weekblad in Leiden, maar in Delft de Delft op Zondag en dan zit Rob dat helemaal te spellen. Hij denkt dan: Misschien zit daar één keer iemand in. Hij heeft daar een soort bijgeloof over, want hij heeft daar ooit Boyan Slat, van de plastic zee, uitgehaald. Dus hij heeft nu zo’n overtuiging dat dat moet. Dus dat moet ik checken. Nou, ok. Het heeft nog niet direct iets opgeleverd maar je kunt wel zien wat er leeft, wat mensen leuk vinden en we hebben ze wel als medium in kunnen zetten. Een interview met Yuri hadden ze bijvoorbeeld. Maar over het algemeen doe ik het anders. Ik ben een fervent Twitteraar, dus dan ga ik een beetje kijken wie is daar dan bekend of wat is mij nou opgevallen? Maar ik moet je heel eerlijk zeggen, mensen vragen dat natuurlijk wel vaker en ik heb nu zelfs twee dames die met mij mee willen lopen om het vak te leren, maar de grap is, ik zou het eigenlijk niet echt weten wat ik dan doe. En de grap is misschien ook dat als ik dat weet, dat het niet meer zo lekker gaat, want het is eigenlijk een soort omgekeerde journalistiek. Ik moet een haakje zien van iets dat misschien iets kan zijn. En ik heb het natuurlijk weleens mis, maar over het algemeen wel 8 van de 10 keer goed gezien. Soms weet de spreker het zelf nog niet. Dat zijn de leukste trouwens. Dat iemand zegt: ‘Huh, hoe kom je nou bij mij?’ Ik zie dan iets en ja, dat is heel vaag. Sorry. Daar heb ik geen mooi wetenschappelijke verklaring voor. Neem bijvoorbeeld Zarayda. Ik had zelf al een keer gezien wat zij nu deed, dat ze een online talkshow heeft. Toen dacht ik: Hé, wat vet! Toen heb ik haar aangeschreven, gewoon omdat ik dacht dat ze misschien sowieso wel iets voor ons kon doen. Eigenlijk dacht ik: Misschien kunnen we een soort samenwerking aangaan, dat zij bijvoorbeeld bij ons in de foyer zo’n bank zet en dan

haar programma opneemt. Ik dacht: We zien wel en toen zei ze: ‘Ja, maar ik wil eigenlijk ook wel spreken en dan hier en hierover.’ Toen dacht ik: Dat wist ik helemaal niet. Nou, zo kan het dus ook gaan.

Ave: Er is niet echt een duidelijk lijstje dus.

Caryn: Ik kijk heel veel naar blogs. Nu ook met TEDx-Delft women. We houden de blogs in de gaten die vanuit de Universiteit komen. Dat hebben we trouwens ook voor TEDx-Delft gedaan, maar daar is niets uitgekomen. We hadden toen een lijst met studenten die de wereld gingen verbeteren, met allemaal hele toffe dingen. Ze hadden allemaal leuke onderzoeken gedaan, maar de grap was dat toen we met al die studenten gingen praten, die allemaal zeiden dat het idee van hun prof was. Dus daar kwam eigenlijk niks uit. ‘Ja, ik denk heel erg out of the box hoor’, zeiden ze toen. Toen dachten we: Ja dat zal wel. Maar daar kwam dus niks uit. Maar nu heb ik toevallig wel een blog gezien dat geschreven wordt door persvoorlichters van de TU. Dat is een blog over vijf vrouwen die je in de gaten moet houden. Daar ga ik allemaal koffie mee drinken. Daar zit ook vaak wel iets bij. Meestal willen ze ook wel met mij koffiedrinken, maar het komt ook weleens niet uit. Of ze zeggen: ‘O, is het eind mei, dan ben ik in Korea.’ Dat gebeurt natuurlijk ook heel vaak. En bij TEDx Delft heb ik bijvoorbeeld ook goed mijn ogen en oren open gehouden bij Medical Delta. Dat is een samenwerkingsverband van Leiden, Delft en Rotterdam en ik was daar ingehuurd als de coach voor de oraties van 11 hoogleraren. Toen zei ik tegen de opperhoogleraar zeg maar: ‘Maar hallo, ik werk ook bij TEDx Delft. Mag ik dan mijn ogen en oren openhouden?’ ‘Ja tuurlijk!’ Want zij vinden het wel stoer als hun hoogleraren ook eventueel zo’n talk geven. Je hebt natuurlijk heel erg de wind mee van die conferentie. Ik heb daar Edward Valstar gestrikt en nog één iemand, maar die is voor 2016 geregeld. Die had zo’n gaaf onderzoek gedaan dat hij zei: ‘Nee, ik moet eerst mijn onderzoek afronden en dan pas kan ik bij jullie langs, want als ik het bij jullie presenteer, dan kan eventueel iemand het op z’n zolderkamertje nabouwen en dan kan die daarmee vandoor en dat moet ik niet hebben.’ Als je een beetje handig bent kan dat wel, want zij hebben al het denkwerk al gedaan. Dus die staat nog op de rol voor 2016. Edward zou eigenlijk niet mee kunnen want die ging op skivakantie dat wist hij echt al in juni: ‘Nee, in februari 2015 dan ben ik op skivakantie.’ Maar die heeft hij voor ons gecancelled uiteindelijk. Toen belde hij half januari dat hij er toch nog eens over na had gedacht en mee wilde doen. Ik vroeg me toen wel af hoe ik hem in een maand nog gecoacht kon krijgen. Ik heb het opperhoofd van de coaches gebeld met de vraag of hij dat goed vond. Die kende Edward weer van langs de lijn bij het hockeyveld, dus zo is het allemaal weer goed gekomen. Het is echt heel veel via via netwerken, kleine dingetjes. Ik heb wel eens gedacht: Oe, nu ben ik wel een beetje door dat soort haakjes heen. Maar er komen natuurlijk dagelijks weer nieuwe dingen. Wat ook heel vaak gebeurt, is dat we aangeschreven worden door mensen.

Ave: Die zeggen: ‘Ik wil wel.’

Caryn: De grap is dat je dat formeel ook moet doen, in je e-mail handtekening zetten: ‘Denk jij dat je op het podium...’ Maar dat komt eigenlijk nooit goed. Wel bij de award. Maar dat is ook een beetje toeval. Er wordt namelijk ook een wedstrijd georganiseerd waar je een award kunt winnen. Daar doen we niet zoveel zelf aan, alleen soms lenen ze onze coaches, maar dat hoeft niet. Dat is een wedstrijd voor studenten, een stuk of 6 pitches worden er dan gegeven door PHD-studenten, die hun onderzoek dan presenteren. We hebben daar ook iemand gehad waarvan we dachten: ’t is dat we het beloofd hebben, dat plekje, maar anders... Dit jaar was het een supergoeie, een meisje met parkinson. Dat kun je allemaal terugzien online.

Martijn: Uiteindelijk heeft zij wel zelf gewonnen.

Caryn: Ik weet nog dat we daar stonden en dat het heel lang duurde en dat we zeiden: ‘Als zij niet wint, dan willen we haar alsnog.’ Het was daarom wel fijn dat ze won, want het zou de organisatie een beetje voor het hoofd stoten als wij haar alsnog zouden uitnodigen. Dus het was wel relaxt dat het helemaal goed kwam.

Martijn: Ze had dus die award gewonnen.

Caryn: We vinden het wel leuk dat het ook jonge mensen uit Delft zijn die daar ook een kans voor krijgen, want wij hebben dus wel leuke studenten, maar die hebben niet vaak hun eigen onderzoek. Dus dan is het ‘idea worth spreading from my professor’. Dat is niet helemaal het doel. PHD kan zeker, maar volgens mij was Milea ook gewoon een masterstudent, toch? Die zijn zo inventief dat ze zelf...

Anna: Je had het even over dat coachen dat dat niet binnen een maand kan.

Caryn: Jawel hoor, vaker wel dan niet.

Anna: Ok, maar over hoeveel uren/dagen hebben we het?

Caryn: Ik had het er gister nog met Martijn over dat we altijd heel optimistisch zeggen dat je twee keer met ze afspreekt, gewoon een uurtje ofzo. Dat werkt natuurlijk nooit zo, want eer dat je een beetje op je gemak bent bij elkaar, ben je al zo een uur verder en dat is altijd meer tijd dan je denkt. Verder werken we best hard om dat programma vast te stellen, maar het kan ook zo zijn dat het zo gaat als met Edward. Je hebt het evenement in februari en dan komt half januari nog een nieuwe spreker! Het hoofd van de coaches vond dat toen goed, dus toen dacht ik: Nou, dan gaan we Edward er nog wel even doorheen sluisen, maar eigenlijk is dat niet de bedoeling. Maar de grap is, volgens mij kreeg Martijn in juni al z’n eerste sprekers van mij maar dat is dan weer heel vroeg, want dan heb je ook weer niet dat moment van urgentie. Dus het komt eigenlijk altijd op hetzelfde neer; dat je het een beetje op het laatste moment doet en dan toch meer tijd nodig hebt dan je denkt. We hebben nu bijvoorbeeld bij de women afgesproken, dat we willen dat ze in ieder geval twee keer hun spreker face to face coachen en dan mag je de rest via filmpjes of via Skype of Whatsapp doen. Dat heb ik ook weleens gedaan.

Jaap: Sjaak heeft het via Skype gedaan.

Caryn: Ik vond het jammer dat hij weg zou gaan en toen dacht ik: Misschien vinden we toch een manier om hem te betrekken en toen hadden we één spreker die in Canada woonde en toen dacht ik: Nou, dat maakt toch niet uit, dat kan Sjaak mooi doen.

Jaap: Hoe kwam je aan haar, dat ze dat hier kwam doen?

Caryn: Ik kwam aan haar, die Chinese, omdat ik haar blog had gelezen. Het was zo, je hebt toen die affaire gehad met Gordon en nummer 39 met rijst. Dat was natuurlijk een hele discussie en toen had ik nog helemaal niet aan Tedx gedacht daarin maar ik vond het wel heel apart dat dat soort discussies, ook de zwartepietdiscussie, vaak nogal ongenueanceerd worden gevoerd en dat er nooit eens iemand zegt: Tja, ik weet het eigenlijk niet. Dat vond ik wel interessant en dat is met die nummer 39 ook zo. Chinezen moeten zich niet aanstellen/ja, Gordon moet een nekschot, daar zat het een beetje tussen en toen las ik een stuk, volgens mij in de NRC op zaterdag, van haar. Het was een vertaald stuk van de Huffington Post waarin zij dus eigenlijk zegt: ‘Goh, dat is eigenlijk heel raar, Chinese of eigenlijk Nederlanders van Chinese afkomst laten zich ook gewoon nog heel erg pesten en wij doen dat ook nog steeds. Wat raar eigenlijk.’ Want serieus, als je als Chinees door Nederland loopt, dan kan het gewoon zomaar voorkomen dat iemand ching-chong-ching naar je gaat roepen of sambal bij of dat soort

dingen. Dat is best wel bizar eigenlijk en wij vinden dat in Nederland eigenlijk heel, nouja, gewoon weet ik niet maar we dulden dat. Toen dacht ik inderdaad: wat raar eigenlijk! Nou en toen ben ik de Engelse brontekst gaan lezen en met haar gaan Twitteren (daar heb je het weer). Dat legt gewoon korte lijntjes. Ik vind het heus niet heilig, maar het kan heel leuk werken. Van joh, wat bizar dat jij dit nu zo even over mijn land hebt gezegd, ik heb daar nog nooit over nagedacht, wat erg. Haar man is Nederlands, Nederlands van Chinese afkomst. Haar schoonouders hebben een Chinees restaurant in Rotterdam. En dat was toch wel heel leuk en toen heb ik haar op de lijst voor TEDxDelft gezet en dat betekent dat wij een geheime lijst hebben met z'n drieën. Jeroen van Erp, Rob en ik en dat we die gaan bediscussiëren. Van daaruit filteren we dan wie we gaan aanschrijven, dat beslis ik echt niet zomaar alleen en dan als je dan nog met iemand gepraat hebt kan het ook nog misgaan.

Ave: Dan kun je dus gewoon zeggen: sorry, maar we vinden je toch niet geschikt?

Caryn: Ja, je gaat eerst namelijk koffie drinken en zeggen: 'Ja, zou dat erin zitten voor je?' Dat is letterlijk het mailtje dat je stuurt. We willen kijken of het erin zit, een podiumplek. Dan vragen we ze: 'Wat is nou je idea worth spreading?' Dat moeten ze dan toesturen, vinden we handig, want dan kunnen we het ook naar elkaar sturen, schiet lekker op. En dan pas gaan we het er goed over hebben of we dat wat vinden. De grap is dat Rob en ik vaak het operationele stuk met z'n tweeën doen. Jeroen is namelijk zo druk dat hij daar geen tijd voor heeft. Jeroen is onder andere de baas van Fabrique, maar hij werkt ook voor het Ministerie van Binnenlandse Zaken als hoofd van de creatieve sector in Nederland en dan is hij nog heel druk met het zijn van de broer van Michiel van Erp. Hij moet naar allerlei premières. Wat heel handig is aan Jeroen, is dat hij gewoon een industrieel ontwerper is, die heel veel ervaring heeft in de creatieve industrie. Hij kan ons goed helpen met: wat wil je nou op dat podium zetten? Wat voor balans wil je? Dan ga je echte en beetje praten over wat voor persona's heb je nodig. Dat is een beetje een marketing term. Wat je bijvoorbeeld niet wilt, ik vind het heel tof dat ik Suzanne Ma had, maar ik moet niet 10 Chinezen hebben die over iets gaan praten. Dus je moet wel die afwisseling houden en we willen bijvoorbeeld eigenlijk ook altijd, no offense Jaap, een man met een baard hebben die een beetje iets gekks doet met wetenschap. Maar ja, zo iets wil je er ook altijd wel bij hebben. Wat willen we ook? We willen ook van die geweldige archetypes die je altijd wel wil hebben. Voor het womens-event zijn deze weer totaal anders. Voor het womens-event willen we de *ridiculously-good-looking-computerscientist*.

Ave: ok, dus het moet lekker divers zijn?

Caryn: Ja, maar het draait wel altijd anders uit dan dat je van plan was. Je kan die mensen niet altijd vinden, of ze hebben geen goed genoeg idee.

Ave: ok, dan nog over de coaching zelf.

Caryn: daar heb ik dus een presentatie over bij me. Ik heb laatst bij een internationale bijeenkomst voor TEDx-organizers in Amsterdam gehouden over hoe wij dat doen in Delft want dat is best wel uniek. Het is heel kort hoor.

Het idee is dat ik eerst iets vertel over TEDx-Delft en wat überhaupt Delft is omdat er mensen zijn uit Denemarken en Amerika, maar ook uit Iran en Irak. Dan moet je even uitleggen wat Delft is. Dat wij in 2010 zijn begonnen is heel stoer, want dat is heel vroeg. Vanaf 2009 worden die licenties pas uitgegeven dus Rob is één van de eerste van Nederland. Wij zijn ook het tweede event in Nederland, de eerste was Amsterdam maar daar ligt de focus heel anders. Hun focus ligt meer op de 'E' van entertainment en wij zitten misschien iets meer op de 'T' van technology. Nou, het eerste event was in 2011 en daarna hebben we in 2012 'Never grow up' gehad, daar ben ik naartoe geweest

volgens mij. In 2013 hadden we ‘Do try this at home’, daar hadden we er zo 7 van kunnen doen, dat is natuurlijk een heel leuk thema. Van alles wat je letterlijk mee naar huis kan nemen tot wat je figuurlijk mee naar huis kan nemen, dat is natuurlijk een ideale paraplu. Daar waren wij (Martijn en Caryn red.) voor het eerst coach. En dan nu in 2015 ‘Let’s make things bèta’.

Anna: In 2014 is er dan geen geweest?

Caryn: Nee, klopt. Scherp. In 2013 was het op 4 oktober, heel fijn na 3 oktober. Van 3 oktober in één keer door naar de generale repetitie. Maar toen hadden we besloten dat we naar februari wilden. Dit heeft veel redenen, maar eigenlijk is het heel simpel. Om te beginnen is de aula dan meer beschikbaar. En we krijgen de aula dus we hebben niks te willen zeg maar. We kunnen niet zeggen dat we een andere datum willen als er een klant zit die wel betaalt. En er zijn ook veel evenementen in oktober, er zijn veel conferenties. Snap je, dus toen zijn we wat meer naar het begin van het jaar gegaan.

Martijn: de zomer was ook niet zo handig met coachen.

Caryn: dat klopt, in de zomer ligt de hele TU natuurlijk op z’n gat. Veel coaches zijn docent aan de TU dus dat schiet dan niet echt op. Ja eigenlijk hadden we dan maar 1,5 maand om een goed evenement in elkaar te zetten.

Anna: maar het is nu wel de bedoeling dat er ieder jaar in die tijd een evenement komt?

Caryn: 2016 wordt waarschijnlijk april, maar dat weten we nog niet zeker. Maar dat is wel waar we nu mee werken.

Aan het begin was coachen mogelijk, was het een keus. Vanaf 2013 is het verplicht en is het geen optie meer. En als ik (de curator) en de spreker dan ja zeggen (het kan ook nog gewoon gebeuren dat een spreker afhaakt zoals Edward die dan zegt dat hij eigenlijk moest skiën), dan sturen we een officiële invatation. En dan komt er een speakers liason in het plaatje. In 2014 was dat Sylvia en zij doet alles omtrent sprekers en dan vooral de regelingen. Zoals hoe laat, welke coach, eisen van de sprekers, wanneer kan je aanwezig zijn. Dan wordt er in de ideale wereld ook gelijk een datum geprikt voor een eerste coach bijeenkomst. De meeste coaches zijn van het eigen team of van het *teachers-training-program*, waar docenten cursussen kunnen volgen. Dit jaar hadden we voor het eerst mensen helemaal van buiten de TU. Jet, die werkt bij het hoogheemraadschap en Jonathan kwam ook nog uit de lucht vallen. Een Amerikaan, dat is vooral handig met het Engels, maar die is ook communicatietrainer maar ik weet niet meer hoe we aan hem zijn gekomen. Dan maken we meestal kleine teams: twee coaches en twee sprekers. Het liefst komen we dan minstens twee keer samen. Coachen richt zich op het verhaal en op hoe je staat en wat je nou met je handen moet doen (het ambachtelijke stuk). En dan is er ook nog een ‘English-language-coach’ betrokken, maar die is niet verplicht.

Anna: Met hoeveel coaches zijn jullie dan?

Caryn: stuk of 8, ik moest dit jaar 8 cadeautjes hebben. Sommige coaches hebben 4 sprekers, andere hebben er maar 1. Met z’n vieren spreek je dan af en dan is er ook nog een bijeenkomst met de regisseur van de dag. Zij managet de zaal en als het goed is hebben jullie daar niks van gemerkt want dat betekent dat het allemaal goed gaat. Als zij op het podium komt is er brand of zo, normaal zit ze bovenin een hoekje. *Caryn vertelt over haar eigen team uit 2013: de coaches (Jaques en Caryn) waren heel verschillend en de sprekers ook. Daardoor versterkten de coaches elkaar, maar ook de sprekers versterkten elkaar daardoor. Ze gaven elkaar tips en konden elkaar helpen.* Dit is de ideale wereld hè? Ik hoor namelijk ook dat het niet goed werkt als je dezelfde soort coach bent en samen naar de handen van de spreker zit te kijken en allebei niet echt van doorpakken bent. Soms klikt het ok gewoon niet, dit is mij nooit overkomen, maar het gebeurt wel bij andere duo’s.

De dag van tevoren is er een *dress-rehearsal* inclusief camera's en presentator. De regisseur heeft de sprekers dan al één keer gezien omdat ze theatereffecten toe kan voegen.

Anna: is de regisseur ieder jaar een vast persoon of wisselt dat ook?

Caryn: dat is ieder jaar een vast persoon, Antoinette

Martijn: die probeer je een keer bij een coach bijeenkomst te betrekken, maar zij heeft het ook druk. Dit wil je dan niet bij de eerste, maar bij de tweede of degene die volgen. Dan heeft zij ook alvast een idee van het verhaal en kan dan bedenken wat het visueel 'gaaf' maakt.

Anna: Bepaalt zij ook de visuele effecten enzo?

Caryn: Ja! Ook dat we dit jaar die driehoeken hadden had zij bijvoorbeeld ontworpen, maar ook wat er dan op die driehoek komt te staan. Bijvoorbeeld bij Edward hele mooie heupfoto's, bij Jozanneke Delfts Blauw. Dat maakt zij dan samen met haar team.

Anna: hebben de sprekers hier ook invloed op?

Caryn: Ja want het draait allemaal om hun. Als zij het niks vinden kunnen ze zeggen 'opzouten', maar meestal hebben ze wel door het dat hun verhaal complimenteert.

Antoinette doet zo goed werkt, maar ze kan zo onuitstaanbaar zijn. Maar dat is wel noodzakelijk in dat vak. Het is een pittige tante. Ik ben er zelf misschien ook wel één, maar ik ben niet zo onaardig.

Ave: Maar mensen maken natuurlijk wel zelf hun presentatie neem ik aan?

Caryn: Nee, dat kan zij ook helemaal voor je doen, maar dan moeten ze wel input leveren. Dan moeten ze bijvoorbeeld beeld inleveren en soms zitten sprekers daar niet echt op te wachten.

Ave: maar ook die props. Edward had bijvoorbeeld dat heup-bot bij zich?

Caryn: Dat doet hij altijd, dat had ik ook al gezegd. Dat gaan jullie misschien ook wel krijgen. Toen ik afstudeerde met Nederlands had ik het idee dat ik wel wat kon, maar dat het niet bepaald 'ground-breaking' was. Maar zo'n man (Edward red.) heeft er dus nog nooit over nagedacht, terwijl hij al heel zijn leven iets met die botten doet, om er dan gewoon een keer eentje mee te nemen. Dat is voor hem een geval van: hoe kom je erop, hoe heb je dat bedacht!? En hij heeft dit verhaal al 1000x verteld, maar toen vond ik dat hij er wel iets bij moest halen: zijn grootmoeder ofzo. Wat is de aanleiding van dat je dit bent gaan doen? En toen kwam inderdaad het verhaal over zijn oma naar voren. Toen ik die vraag aan een andere onderzoeker stelde kwam hij met het antwoord dat hij veel geld kon verdienen in die richting, dus dat hebben we maar niet gebruikt. En dan gaan ze nog wat eten (de dag van te voren red.) en is er nog wat *last-minute* coaching en dat is eigenlijk altijd het meest, het komt meestal op het laatste moment neer. Onze ervaring is dat het heel goed werkt. Je kunt sowieso goed zien wie er gecoacht is of niet. Het geeft de sprekers echt wat meer zelfvertrouwen. Het is echt belangrijk dat iemand als Martijn heeft gezegd dat iets goed was en dat hij/zij vooruit is gegaan. Het maakt de verhalen ook wat meer coherent. Het werkt al heel goed dat iemand gewoon even zegt 'ja, maar wacht even wat heeft dat nou met elkaar te maken?'. Ze hebben het idee dat er voor ze gezorgd wordt, dat we ze de weg naar het evenement niet alleen laten. Je laat ze verzorgd achter en dat wordt fijn bevonden heb ik gemerkt. En het is ook leuk: de voorpret is ook wat waard, het heeft iets gezelligs als je goed met je spreker door één deur kan.

Caryn: ik heb wel gecheckt bij sprekers voordat ik deze presentatie (de ppt in Amsterdam red.) gaf of ze het wat vonden en eigenlijk waren de reacties voornamelijk positief. Zo kreeg iemand een beetje een paniekaanval de avond van tevoren in het hotel. Ik was daar toevallig nog om een biertje te drinken, maar toen kwam er iemand vragen of één van de coaches nog aanwezig was en ik kende die hele man niet, maar ik

ben er heen gegaan. Hij wist het allemaal even niet meer.

Jaap: Dus de avond ervoor zit je met z'n allen al in het hotel.

Caryn: Ja dat klopt, nu zelfs meer dan andere jaren omdat de treinen allemaal niet reden.

Jaap: Zijn jullie daar dan ook bij?

Martijn: Nee, je bent wel heel de dag bij de repetities, maar ik was blij dat ik 's avonds gewoon naar huis kon.

Caryn: Ik wel, maar ik heb er weinig van meegekregen. Ik heb die kamer even gezien en toen ging bij mij het licht uit.

Martijn: De sprekers die ik heb gecoacht vonden het fijn. Ik had ook sprekers die van wat verder kwamen, Zarayda kwam dan uit Amsterdam, maar dat is toch ook wel best een afstand.

Caryn: We moeten dan één nacht betalen en die volgende krijgen we gratis.

Ave: We doen onderzoek naar de geheugentheorie dus daar moeten we natuurlijk ook even iets over vragen. We hebben namelijk alle drie een apart onderwerp: visualisatie, organisatie en visualisatie. Wordt daar heel specifiek advies ingegeven. We hebben het al een beetje over de visualisatie gehad, maar wordt er ook gezegd: heb je nog een anekdote liggen en hebben jullie het er dan ook over wat voor effect dat heeft. Of geef je gewoon tips en zeggen zij vervolgens, nou bedankt.

Caryn: Ehm, ja. Want kijk, het is een hele maffe soort presentatie en ze noemen het bij TED ook meer een performance dan een presentatie, maar dat vind ik zelf als Nederlandse een beetje overtrokken, maar het is wel zo want je moet ook wel goed overkomen op camera en je moet er ook voor zorgen dat iedereen je kan zien. Dit jaar is er wel een foutje gemaakt met die pianiste die niemand kon zien. Die zat met haar rug heel raar en toen zag men alleen de rug en dat is niet de bedoeling. Dit betekent dat het heel anders kan zijn dan wanneer jij college geeft of aan mij gaat vertellen hoe je dat doet met die heupen. Want als je voor een camera staat, moet je gewoon een andere manier van bewegen hebben enzo. Maar, dat is niet wat je vroeg hè? Waar het om gaat is meer het format. Je werkt niet met powerpoint of beeld, je mag wel iets verduidelijken. Zoals die presentatie over wiskunde, met die namen en woorden die op het scherm verschenen, dat leek nog het meest op een klassieke powerpoint. Het publiek heeft in principe alleen jou om het verhaal aan op te hangen: je kan geen handout uitdelen aan 1300 man bijvoorbeeld. Je moet er dus voor zorgen dat het publiek het verhaal onthoudt door jouw performance. En dat kan van alles zijn. Hebben jullie de talk van Jojanneke bijvoorbeeld gezien (nee)? Die had het over dat er dan drie termen waren die dan belangrijk waren met wezen. Die bijvoorbeeld heeft een paar keer die terminologie wel herhaald. Wat ook handig is, maar niet TED-specifiek, is dat je het laat aansluiten op iets wat mensen wel kennen. Zo was er bijvoorbeeld een man die zegt dat software testen veranderd moet worden, maar waarom is dat nou zo? Maar dat wordt altijd allemaal erg bèta de wereld ingestuurd.

Martijn: hij beweerde dat software engineers te prestatiegericht zijn en denken dat het testen en oplossen van problemen later dan pas komt.

Anna: hij had dus een linkje met een probleem zoals de Fyra of alle wisselstoringen rond Utrecht Centraal.

Caryn: Ja, bijvoorbeeld. Daar maak je het begrijpelijker mee voor mensen. Bij Edward bijvoorbeeld ook: hij heeft ook gezegd wat zijn oplossing dan bijvoorbeeld bespaart: hoeveel mensen er in de toekomst last van hun heupen krijgen. Soms moet je het wat tastbaarder maken.

Anna: dat verhaal van die oma hielp daar eigenlijk ook al wel bij. Want best wel meer mensen in die zaal hebben een oma of een oudtante die ook last van die heupen hebben.

Caryn: net als Elisa en Gerrardo (?). Ik denk dat de talk van Elisa niet voor iedereen

was, dat hoeft ook niet, hij was best lastig te begrijpen. Maar aan de andere kant heeft iedereen wel eens voorwerpen gebruikt voor iets waar ze niet voor gemaakt zijn. Dat heeft ze wel uitgewerkt om het iets laagdrempeliger te maken, maar ik begreep het ook niet allemaal. Gerrardo ook: die heeft echt zitten hameren van wat moet er dan anders als we over 20 jaar in een lokaal zitten voor een wiskunde les.

Anna: ik vond hem heel goed en leuk die talk omdat ik een wiskunde docent had die dat ook echt deed, één uur in de week.

Caryn: Gerrardo doet het ook. Dat is ook weer zo iemand, hoe ik daar nou weer aangekomen ben. Die kende ik wel een beetje uit het studentenleven en hij is bevriend met mijn man. Maar die heb ik pas echt leren kennen op een begrafenis. Dan ga je een keer doorpraten over wat je doet en zo gaat het balletje rollen. Dat is best wel bizar hoe dat dan gaat. Ik zal even kijken. Patrick ken ik want daar heb ik een keer een hele nacht mee gedanst toen ik jarig was en toen ik hem een week later weer zag wist ik niet eens mee hoe hij heette. Peter hebben we via een tip, dat gebeurt natuurlijk ook wel eens. Wim had dat gezien, die moet je hebben. Andy heb ik zelf mee samengewerkt, bij een college. Ik beoordeelde het presentatiegedeelte en hij de inhoud. En toen dacht ik 'wat een leuke man' of zo en zo zijn we ook een beetje aan de praat gekomen. Milea (?) heeft haar plek gewonnen. Puck is een kind van een studievriend van Rob. Jozanneke ken ik via twitter omdat ik zelf wees ben en ooit een keer twitterde van wat raar dat je allemaal tegenkomt. Zo moest ik toen ik een nieuwe baan had een noodgevalcontact opgeven en toen had ik alleen Allard (haar man) opgegeven en toen kwam de secretaresse van 'joh, vul ook even je ouders in', maar ja die had ik niet meer. Dat twitterde ik en toen reageerde zij daarop. Suzanne heb ik net verteld. Roeland komt bij Rob vandaan die heeft hem gevonden op een conferentie waar ze beide moesten spreken. Kor zijn we via-via aan gekomen. Wat wel grappig is dat je in het Delfts accent het verschil tussen 'Kor' en 'koor' niet zo goed hoort, dat leverde wel eens problemen op. Gerrardo dus, Elise hebben we van een lijst van de TU gehaald. Edward heb ik zelf opgesnord. Zjouen, je kan ervan vinden wat je wilt, maar het is wel echt bizar en bijzonder wat hij doet. Dit is echt zoiets waarvan je over 10 jaar zegt 'daar hebben wij bij gezeten'. Delft Brass ook via-via.

Jaap: in de eerste vier zinnen hoorde ik niet eens in welke taal hij sprak.

Caryn: Alec hebben we omdat hij erg in het nieuws is geweest met die drone en Yuri was ook via-via.

Jaap: (over Alec) ik vond zijn inleiding erg goed, maar halverwege raakte ik het een beetje kwijt

Caryn: ja dat klopt, maar hij is ook nooit op komen dagen om te coachen dus ja, dat merk je wel.

Ave: Ja, maar inderdaad nog even over de coaching. Ik vroeg me ook nog af waar jullie het op baseren. Is het echt gewoon je eigen vakgebied waar je uitkomt dat je daardoor die adviezen geeft of heb je een aantal adviesboeken ook liggen of een aantal wetenschappelijke artikelen waarin staat dit is echt...

Caryn: We baseren het eigenlijk... Twan heeft dat uitgezet, die lijn. Daar hebben wij dan een keer een middagje mee gezeten. En het gaat eigenlijk allemaal over de *heros journey*. Over hoe je een verhaal vertelt. Heel leuk. In die zin dat altijd in verhalen, in de Middeleeuwen bijvoorbeeld, is het altijd zo dat het een poosje goed gaat, dan komt het moment van het beslissende moment en dan hoe het dan loopt, dan loopt het weer goed af. Je hebt iemand die wil iets, die heeft een bepaald doel, dat gaat mis en dat is meestal het verhaal. Waarom is het dan wel belangrijk... Twan baseert het op de helden, de reis van de held. En dat is gewoon weer gebaseerd op hoe eigenlijk bijna alle verhalen lopen. En blijkbaar heeft dat gewerkt, want dat is wel het enige verhaalmotief

dat alle eeuwen overleefd heeft. Maar hij illustreert... Dat er altijd een twist in moet zitten en...

(Martijn: Voorbeeld Mr. Bean met de straatmuzikant)

Caryn: We hebben wel bijna allemaal Nederlands gestudeerd. En daar heeft hij dat waarschijnlijk vandaan.

Ave: We hebben het er natuurlijk ook over gehad, of dat zei je al, dat je tips geeft om te zorgen dat het verhaal goed overkomt, dat mensen het dus ook onthouden.

Caryn: Dat je het slot moet aankondigen en dat je dan nog eventueel je verhaal niet letterlijk moet samenvatten maar nog die kernboodschap moet herhalen. Kernboodschap en *ideas worth spreading* zijn wat mij betreft het zelfde. Maar het is wel hetzelfde idee. En die moet scherp zijn en die moet fris zijn.

Jaap: Het draaide om verandering volgens meneer Van Velzen. En scheiden is niet goed bijvoorbeeld.

Caryn: Volgens mij vond hij zijn scheiding uiteindelijk toch wel oké. Het was ook entertainment hè. Met z'n liedje.

(Iedereen over Van Velzen)

Caryn: Eerlijk gezegd, entertainment daar mogen we nog wel een tandje bijzetten.

Beetje amateurniveau. Delft Brass is leuk, maar sorry hoor ik ken wel ook zo drie groepen die dat nog beter zouden doen. Brenda zit erin en zij is de coördinator van alle vrijwilligers ... Dat drumcafé bijvoorbeeld was dat ook niet super origineel. We hopen toch net ...

Anna: Hebben jullie daar een balans in? Entertainment, talks?

Caryn: Ja. We willen sowieso natuurlijk één entertainment per blok en je moet drie filmpjes laten zien. Dat moet. Omdat je dus dan die connectie kan houden. Er zit een percentage aan vast. Wij halen het nooit. Dan zouden we er nog twee moeten laten zien, maar dat vinden we een beetje zonde.

Ave: Wordt Amerika dan ook boos? Als je dingen...

Caryn: Ik geloof het niet, maar het kan zomaar gebeuren dat je je licentie kwijtraakt.

Het gaat er meer om als je drie sprekers hebt die een boek verkopen ofzo. En in Rotterdam zijn ze 'm ooit kwijtgeraakt, omdat ze TEDx deden op een ander evenement. En dat mag ook niet. Er mag niet gemengd worden. Het is ook iets wat heel 'feurig' gezegd wordt. Ja we doen TEDx talks maar dat is het niet. Het wordt een genre bijna. Wat niet erg is, want dat wilden ze toen die hoogleraren wilden... moesten... waren allemaal al hoogleraar, maar ze werden ook nog hoogleraar in een bepaald verband en toen moesten ze dus heel korte oraties houden van zeven minuten ongeveer; dat is dus heel snel to the point en een beetje informeel zijn. Nou, als het kort en informeel moet zijn, kom eens bij mij. Dat straalt dan een beetje af van TEDx, dat je daar dan van bent. En... Zodoende. Dat was al een beetje een merk. Maar de grap is ook dat ze me daardoor minder snel, minder graag zien komen. Alle hoogleraren waren bang dat ik een beetje zo zou zijn: misschien moet je een beetje gaan huppelen ofzo tijdens je presentatie. Dat je een beetje te veel yoga kende ofzo.

Jaap: Ik wil nog iets meer over die organisatie horen. Moet er een partitio inzitten?

Caryn: We hebben het niet echt over partitio nee. Nee, het is belangrijker dat je mensen... Het is meer performance. Dus dat doe je iets minder, die structuurdingen. Op de TU ben ik altijd heel erg bezig dat ze niet te veel mogen lopen tijdens hun presentatie en dat is op TEDx-evenementen helemaal niet erg. Iedereen staat er als zichzelf, dus het is juist wel leuk als de één dit doet en de ander dat. Snap je. Dus... daar ben je iets minder mee bezig in die zin. Dat is omdat het een retentietechniek is, de samenvatting, het is handig om dat te doen. Een spreker doet trouwens volledig wat hij zelf wil. Is mijn ervaring.

Anna: Hoe zit dat dan met de mensen die niet op de coachafspraken komen?

Caryn: Wij zijn ervoor dat als iemand dat bij ons zou doen, dan kicken we hem eruit.

Dat hadden we misschien nu ook moeten doen. De coach had het moeten zeggen.

Martijn: Die organisatiestructuur heeft natuurlijk ook wel te maken met de verhaalstructuur, die *heros journey*. Dus als het over retentie gaat, is dat ook wel belangrijk. Dat is ook een soort structuur, alleen minder expliciet. Je probeert een soort structuur aan te brengen in het verhaal. Daardoor worden de overgangszinnen misschien minder uitgesproken. Net als een sprookje. Dan krijg je heel andere soort overgangen.

Caryn: Dan doe je dus echt meer een verhaal vertellen, *story telling*. Zarayda zegt: ik sta op de vluchtstrook en m'n auto is kapot en ik denk wat moet ik nu doen. Dat is haar begin. En daarmee loodst ze ons het verhaal binnen.

Martijn: Daar kwam ze zelf mee. Dat kwam naar voren in het gesprek daarover.

Caryn: Dat is dan bijvoorbeeld heel... dat zie je ook wel terug op ted.com., dat dat werkt. Martijn: Om dat dan weer terug te laten komen, daar hebben we het wel over gehad. Structuur erin brengen.

Caryn: We willen het liefst een cirkelslot. Mensen houden daar gewoon van. Ons beloningscentrum wordt dan helemaal blij. Er is niet meer een rafelrandje. We weten hoe het afloopt. Dat vinden we fijn.

Ave: Over het artikel. We hebben een paar artikelen gelezen over Amerikanen die kritiek hadden op TED en het algehele idee was: mensen die daar spreken of die het organiseren die doen alsof het echt alles is en het is allemaal *awesome*, maar wat komt er nu daadwerkelijk van terecht? Wordt het niet te erg gehypt? Na afloop denk ik: geen idee meer waar het over gaat.

Caryn: Dat begrijp ik wel goed. Ik ben de laatste om te zeggen dat het heilig is. Je moet een beetje kritisch zijn. Er zijn ontzettend veel TEDx'en. Ik geloof dat er gemiddeld per dag drie zijn. Op de hele wereld. Moet je nagaan. En dan heb je natuurlijk ook die kleintjes. Maar dan nog. Wij zijn dus heel erg bezig om ons te onderscheiden continu. Omdat je al zo'n grote licentie hebt en professioneel bent, is dan ook wel... die ambitie kunnen we wel vrij goed vervullen. Ik vind dat ook wel jammer, want het overschaduwet je wel. Dat er letterlijk TEDx Lutjebroek kan zijn en TEDx Ede en Wageningen. Dat ik denk: nou, kom op zeg. Je krijgt een beetje een moeheid. Die hebben vaak wel hun eigen ding. Maastricht is bijvoorbeeld heel medisch. Dat kan ook, dat je een thema kiest. De hoeveelheid weet ik niet uit m'n hoofd. En ja, ik vind eigenlijk wel dat de selectie over het algemeen wat strenger mag. Ik denk wel eens: hoe ben jij op dat podium gekomen? De *ideas worth spreading* is niet duidelijk, of ben je nu reclame aan het maken... ja ik ben ook vaak eerder weg omdat ik het gewoon niet goed vind. Wij hebben ook een hoop te leren. Hoop dingen we die eigenlijk anders zouden moeten doen. Anderen benaderen de kwaliteitseisen anders. Amerikanen zijn niet gewend om zo'n merk te bewaken.

Amerika wil veel talks van: nou wees jezelf. Dat dat dan het idee is. Daar heb ik veel conflicten over. Dat vind ik niet goed. Er was iemand die had gezegd: je moet tegen je kinderen zeggen dat ze mooi zijn. Dat je denkt: snap je niet dat dat niet kan.

Ave: Veel haken en ogen aan de verhalen zelf dus.

Caryn: Mijn collega's staan open voor mijn kritiek gelukkig. We hebben nooit echt onenigheid gehad. We konden praktisch met z'n drieën stemmen. Dat is nooit echt nodig geweest. Maar daar heb ik geluk mee gehad.

De Jong: TED en oversimplificatie. Dus dat alles echt platgeslagen wordt. Dat verhaal van de vader van de popmusicus *change is good*.

[over voorbereidingsfilmpje]

Caryn: Je bent een soort persvoorlichter. In die zin. Ik vind dat ze daar voor moeten

waken. Daarom heb ik ook liever dat je een talk van zo'n Shou-En misschien iets te moeilijk vindt, dan dat je denkt dat je aan je woonkamer gaat denken. Dat wetenschappelijke gehalte moet kloppen.

Ave: Chris Anderson heeft ook gereageerd op die oversimplificatie.

Caryn: Serieus probleem van TED zijn twee dingen: eerste is dat ik vind dat we over het algemeen te veel witte mannen op het podium hadden en ik vind dat we – en te veel witte mannen in de zaal – en ik vind ook dat we te veel relatief rijke mensen hebben – ook wel veel studentenkaartjes – maar zij zijn ook de elite van de toekomst. Maar ik wilde meer diversiteit op het podium, al was het maar in mannen en vrouwen en in kleurtjes. Nu ben ik daarin geslaagd, maar dat was wel toeval. Vanuit feministische hoek heb ik complimenten gekregen dat het mij gelukt was om het 50/50 te doen. Maar de vrouwen hadden de emotionele onderwerpen en de mannen waren de hoogleraren met de heupbotten. Die vrouwen zijn niet niet te vinden, maar in de generatie die er iets over te melden heeft, is het nog iets minder. Ik probeer dat te veranderen. En ik ben er ook mee bezig, ik wil dat, kaartjes goedkoper maken kan haast niet, maar ik zit nog te denken van... ik wil iets van naar draagkracht. Dat is heel ingewikkeld. Maar ik wil dat wel. En ik wil ook meer diversiteit aan de alle kanten. Maar dat gaat wel aardig.

Jaap: De sfeer van het positieve denken.

Caryn: Het is gewoon een leuke dag.

Ave: De vraag is: is dat erg?

Caryn: Ik zou het ook wel vet vinden als je een paar vragen uit de zaal krijgt. Dat weet ik ook niet hoor. Dat slaat ook dood soms. Maar een paar vragen door de host. Of misschien weer een nieuw filmpje achteraf.

Jaap: Maar je vindt dat niet erg? Dat positivo?

Caryn: Dat is ook wel cultureel. In Amerika is de sfeer meer dat alles geweldig is. En wij als Hollanders kijken daar natuurlijk ook graag een beetje zo tegenaan: is dat nou wel zo geweldig? Zo krijgt iedere TED zijn eigen sfeer. En zo lang wij maar goed blijven programmeren, krijgen die mensen niet zo veel ruimte. Geen yogaleraren die reclame maken voor hun eigen yogaschool.