Categorizing handwritten Chinese characters

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Abstract

The focus of this thesis is on the categorization of handwritten Chinese characters. The main question is, 'How can handwritten Chinese characters be categorized in order to make unknown characters findable?'. Handwritten Chinese characters differ from regular or printed Chinese characters. Learning to read handwritten Chinese is not part of any university curriculum and it is usually not taught in language schools. There are only a few sources that can be used to find the corresponding regular form of an unknown handwritten character. Four sources are reviewed in order to explore and judge various methods. This research is based on the methods used in *A Manual of Chinese Running-Hand Writing: Especially as it is Used in Japan* written by Groeneveldt and De Saint Aulaire (1861), *Dictionnaire des formes cursives des caractères chinois* (1909) by Stanislas Millot, *Sōsho Daijiten* (1936) by Sukeyuki Endō and *Chinese cursive script: An introduction to handwriting in Chinese* (1958) by Fang-yü Wang. The product of this research will be a set of guidelines of what a user-friendly dictionary would look like.
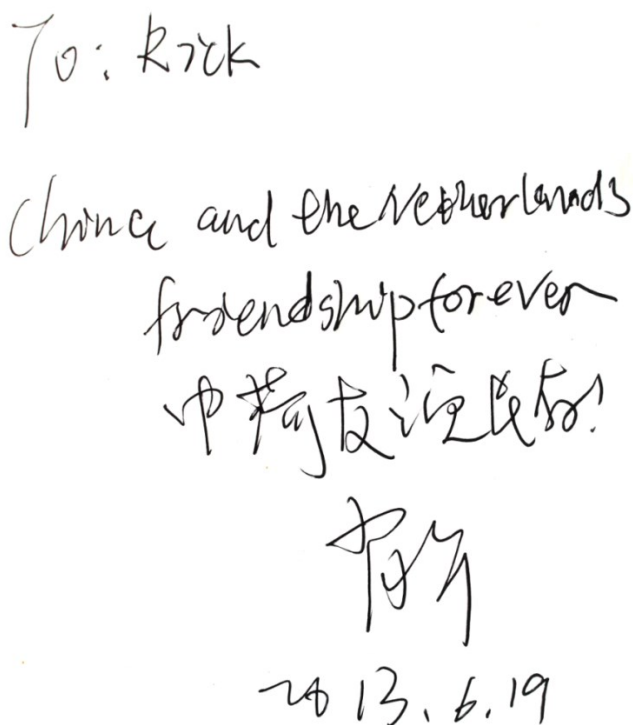
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Symbols, abbreviations and other conventions

/	in quoted text and translations, a forward slash represents a line break in the original
"text"	double quotation marks usually mark text as a citation
'text'	single quotation marks transcribe meanings
BCE	Before Common Era
CE	Common Era
Hànyǔ Pīnyīn	The Mandarin pronunciation of characters is spelled in the Hànyǔ Pīnyīn transcription, which is a transcription method to Romanize Chinese characters.
Hebon-shiki Rōmaji	The Japanese pronunciation of characters is spelled in Hebon-shiki Rōmaji, which is a transcription method to Romanize Japanese characters.
汉字	Character materials are rarely given Pinyin transcription or English glosses; Chinese characters are used only when relevant: - for most handwritten characters corresponding regular characters are <u>not</u> given for didactic reasons (see § 2.2)

1. Introduction

Chinese handwriting is difficult to read for second-language learners. In June 2013 I went to work in

Shēnzhèn as a football coach. I encountered Chinese handwriting the first week I arrived in China. As

a network activity, we often played matches against parents of the young players we coached. In the

first week I worked for the academy, we played a match against a team of parents. It turned out that

one of our opponents was an author called Xiāo Wǔ. After the match we exchanged gifts. All coaches

received Xiāo Wǔ's latest book with in which he wrote a personalized autograph after the match.

Figure 1. Autograph by Xiāo Wǔ

At the moment, I was only able to read the English parts of the note: *"To: Rick/China and the*

Netherlands/friendship forever", and the date "*13.6.19*" i.e. June 19th 2013, even though I had

already learned to read over 2,000 characters. To decipher this note, I started searching for manuals

and handwriting dictionaries. It seemed that there were only a few sources and that there is not one

standardized method for categorizing handwritten characters in order to easily look up handwritten

characters in a paper dictionary. This thesis will explore methods of categorizing handwritten Chinese

characters in order to make unknown handwritten characters findable in a paper dictionary.

This introduction will firstly show the structure of this thesis. Secondly, I will talk about the basis of the conducted research. Lastly I will talk about the main and sub questions that will be answered with this research.

In order to talk about handwritten characters, I need to throw a light on the types of characters. Regular characters and handwritten characters are usually distinguished. These types and the differences between these types are further explained in Chapter 2. Although most second-language learners are unable to read handwritten Chinese, there are only four known manuals to help decipher handwritten texts. Methods used in regular dictionaries will not work. Chapter 3 gives examples of regular methods and explains why these methods do not work for handwritten characters. The four manuals that do help deciphering handwritten Chinese use alternative methods to categorize handwritten characters. These four sources will be introduced briefly in Chapter 3 as well. The Chapters 4 to 7 will thoroughly study the four manuals and the used methods to categorize handwritten characters. Each chapter will introduce one manual and its author(s). Each of the Chapters 4 to 7 will also show the contents of one manual and gives examples of how characters are arranged. Subsequently, an overview of the categories in the manual is provided and will be explained. To illustrate how each manual works, an example is provided of how an unknown handwritten character can be found in the manual. Thereafter, a set of advantages and disadvantages for the used method of categorizing handwritten characters will be discussed. Eventually each manual will be used to translate the autograph of Xiāo Wǔ. This is a fixed structure which is used in the Chapters 4 to 7. The manuals will be discussed in chronological order. Therefore, Chapter 4 is on *A Manual of Chinese Running-Hand Writing: Especially as it is Used in Japan,* Chapter 5 on *Dictionnaire des formes cursives des caractères chinois,* chapter 6 on *Sōsho Daijiten* and Chapter 7 on *Chinese cursive script: An introduction to handwriting in Chinese.*

This research is based on the usage of four manuals on several handwritten texts. For a course in Chinese handwriting, I have translated seven handwritten texts. Besides the course in Chinese handwriting and its texts, I have studied the guiding texts of each manual and checked whether the handwritten characters fit the set characteristics. It becomes clear that the criteria are sometimes ambiguous and characters are categorized inconsistently. Ultimately, I will conclude this thesis by highlighting the most interesting findings. I will give guidelines of what a good handwriting dictionary in my opinion should look like and how characters would be arranged ideally.

The main question of this thesis is; 'How can Chinese handwritten characters be categorized in order to make them findable in a dictionary?' The sub questions that will be answered are; 'What methods are currently used to categorize handwritten characters?', 'What are the advantages and disadvantages of the researched methods?', 'What features should a user-friendly handwriting dictionary consist of?'.

2. Different types of characters

Before talking about handwritten Characers I will first explain what a regular character is and what it consists of. I will explain what a handwritten character is and what the difference is between a regular and a handwritten character.

It seemed that I could not read Xiāo Wǔ's autograph because handwritten Chinese characters look different from regular characters. Languages schools and universities only teach reading and writing regular characters. Books and study materials are printed in regular characters. The distinction between these two types of characters, regular characters and handwritten characters is clearly explained by Wang (Wang 1958: i). The figure below shows the two types of characters. On the pages to come, I will elaborate on the terms regular character (§ 2.1) and handwritten character (§ 2.2).

- Regular characters

- Handwritten characters

Figure 2. The two types of characters.

2.1 Regular characters

I will explain what a regular character is and what it consists of. Regular characters are also called standard characters (Wang 1972: xi). This character type evolved from previous character forms during the Chinese Hàn dynasty (206 BC-220 AD) and Three Kingdoms period (220-280). "From the Later Hàn dynasty until the present. It is has continued to be used for formal writings. It has also been customary for all publications up to the present time" (Wang 1972: xi). This is still true anno 2018.

We distinguish characters consisting of one single graphic constituent and characters consisting of more than one constituent. "Simple characters consist of one single graphic constituent that can only be analyzed into a certain number of strokes, like yǒng 永 'eternal', with 5 strokes forming no sub constituents". "Compound characters consist of two or more graphic constituents, 氵 'water' and yǒng 永 in yǒng 泳 'swim' " (Bottéro: 2015). These constituents are usually called components. "Depending on their position within a graph, the shape of the constituent may vary to a certain degree" (Bottéro: 2015).

One component or part of a component of a character is the radical. The radical can be used to categorize characters. Two examples of radicals are 艹 in 草 and 荷 讠 in 说 and 谊. A component is a part that is separate in a regular character. For example 弋 in 式 . There are some exceptions where the radical is part of a one-constituent character. The radical 丨 is a part of the characters 丫, 中 and 丰 and it is the part on which these characters are categorized in dictionaries. I would state that the stroke 丨 is merely a part and not a component of the characters 丫, 中 and 丰.

One widely used set of radicals is the 214-radical system, which "consists in 214 recurrent graphic elements selected to organise the classification of characters in dictionaries" (Bottéro: 2015-2). The method that has been used for a very long time is based on a set of radicals used in the 康熙字典 *the Kāngxī dictionary.*

Regular characters come in different fonts, like our alphabet. The most common regular fonts are now made into computer fonts. Below are the most seen fonts used in books, newspapers, and on television. Both Chinese children, as well as second-language learners, learn to read any form of regular characters. Some well-known computer fonts are Sòngtǐ, Fǎngsòngtǐ, Káitǐ and Hēitǐ.

宋体 Sòngtǐ

仿宋体 Fǎngsòngtǐ

楷体 Káitǐ

黑体 Hēitǐ

Figure 3. Different regular-characters fonts.

The corresponding characters in different fonts look very similar to each other and it is easy to recognize characters that are written in another regular-script font. Some horizontal lines are slightly tilted in Fǎngsòngtǐ and Kǎitǐ, but overall, the differences are minimal.

The fonts Sòngtǐ, of which is Fǎngsòngtǐ a variation, Hēitǐ and Kǎitǐ are commonly used in printing (Ho 2005: 25). Textbooks for second-language learners are also printed in regular character fonts similar to the fonts above. Chinese characters used in newspapers look like the above characters as well.

Regular characters are written with a standard stroke order. In principle, it goes from top to bottom, left to right, middle before the sides, horizontal before vertical, enclosures before content, close frames last and character spanning strokes last (tutuorming.com).

This introduction to regular characters shows briefly that regular character consist of one or more constituents. These constituents consist of components. Characters can be categorized and unknown characters can be found, because even in various fonts, components are recognizable.

2.2 Handwritten characters

The various regular-character components differ slightly when written in another font. This is not the case for handwritten Chinese characters. This paragraph shows that components in handwritten Chinese characters cannot easily be recognized and that there is more variety in the way characters are written.

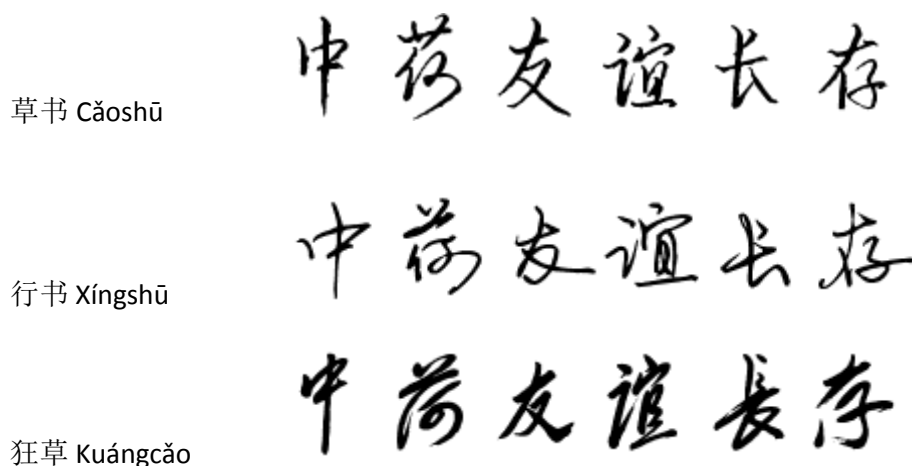Chinese handwriting is a mix of different calligraphic styles. There are many different calligraphic styles. Below are three examples of calligraphic styles.

草书 Cǎoshū

行书 Xíngshū

狂草 Kuángcǎo

Figure 4. A few examples of calligraphic styles

Every calligrapher has his own style. It is an art to write the same characters in a different way each time written in one single piece of art. Cǎoshū is usually even more simplified or modified, as can be seen on the list of modifications (§ 2.3), than Xíngshū. Kuángcǎo also called wild script, is readable in the example above, but this is usually not the case.

There is not one standardized way to write cursively. Handwriting differs from person to person. People may have a preference for a particular calligraphic style or learn to write characters in a certain way. The different personal writing styles may derive from various calligraphic styles (Wang: xi). In one's handwriting, it is very likely that some handwritten characters look similar to the regular form of that character, while some handwritten characters do not. Because each personal style is a mix of multiple calligraphic styles it is hard to compile a full dictionary of all occurring handwritten characters.

Handwritten characters are mainly used in informal communication. It is currently used less, due to the extensive use of computers and telephones. From my own experience I can tell handwritten Chinese informal communication is predominantly written with a pen and you will be confronted with handwritten Chinese when living in China or working in a Chinese environment.

When the corresponding regular character is right next to a handwritten character it seems clear that a handwritten character consists of various components, without it, it is much harder to abstract the various components. Therefore I will only give the regular form if necessary.

There is another important thing that needs to be addressed. At the time when Groeneveldt and De Saint Aulaire wrote their manual, around 1860, there were not many people who were able to write. The only people who wrote, were educated in writing characters in a calligraphic style. Therefore I suppose that there was less variation between characters and personal styles than in present-day informal writing. Most writing was done with a brush. When more people started to write and when the pen came into use, new styles emerged out of calligraphic writing.

2.3 Difference between writing regular characters and handwritten characters

When writing characters cursively, characters may differ from regular characters in a few ways.

According to Wang, there are ten aspects in which handwritten characters differ from regular

characters (Wang 1958: XXV)

1. Strokes originally separate in regular form are represented by running strokes 三 to 丢

2. A stroke in regular form which begins from a position other than the end of the preceding stroke b

    begins from the said end in handwriting 口 to 亿

3. Two or more dots in regular form are represented by a line in handwriting 冫 to 𝓁

4. Straight lines in regular form are represented by curves; sharp corners without running strokes are

    represented by loops formed with rounded corners and running strokes 為 to 為.

5. Number of strokes in regular form is reduced as a result of the nonessential strokes being

    eliminated from 房 to 方.

6. Original lines in regular form are represented by shorter lines or are contracted into dots

    都 to 都

7. A complex element is represented by a simpler one or by a symbol; for example: 門 to 门.

8. Relative position of strokes or elements in regular form are changed 到 to 到

9. Stroke order of a regualar form is changed and connecting lines added, resulting in a

    new form 手 to 手

10. Starting point of a stroke is changed from 大 to 大. The writing order goes from 一 大 大

    to 大 大 大

    The difference between handwritten characters and regular characters is relevant in the

chapters to come.

3. Various methods of categorizing characters

There are various methods to categorize Chinese characters. The usual methods to categorize regular Chinese characters cannot be used to categorize handwritten characters. This chapter will talk about the most used methods of categorizing characters and will explain why these methods are not suitable for categorizing handwritten characters. At the end of the chapter, four sources with suitable methods will be introduced.

Handwritten characters need to be deciphered in order to read a handwritten text. Chinese dictionaries may use one of the following methods to categorize characters. For regular characters, there are mainly three ways to find its pronunciation and/or meaning.

From my own experience I can tell that the most used method is digital recognition. The character is rewritten by hand on an electronic device or even photographed. A digital dictionary gives the pronunciation and meaning of the character. Most programs give multiple possible corresponding regular characters. However, for handwritten characters it is still unclear whether the given regular character corresponds with the found handwritten character. I will not review any digital solution to the problem of being unable to read handwritten characters because I think that when people use a paper tool to decipher handwritten texts they will learn to read it without the paper tool faster than when they use a digital solution. Furthermore, there are already multiple studies on this topic.

The second most widely used method is looking up a character by pronunciation. As for unrecognizable characters, it is not possible to look up, since the pronunciation is unclear.

A third method is finding a character by its radical. For handwritten characters it is can be hard to find the corresponding character by radical. Because handwritten characters are written differently, it occurs that different components of handwritten characters look similar. For example, the radicals 冫 氵 讠 亻 look very similar when written by hand (§ 2.3 aspect 3).

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For handwritten characters, most calligraphy dictionaries cannot be used either. Calligraphy dictionaries usually give possible calligraphic forms of a corresponding regular character. However, we want to find the regular form of a handwritten character. Therefore the dictionary needs to be designed differently.

The few dictionaries which are designed to decipher handwritten character are listed below. The four manuals that have been used for this research are very diverse, but have one special thing in common. The books are designed to find the corresponding regular character of a handwritten character. The books are all arranged on the basis of the appearance of the handwritten character.

Willem Groeneveldt & Rutger de Saint Aulaire - *A manual of Chinese running-hand writing: Especially as it is used in Japan* (1861).

As Kuiper states, there was no guide or manual to learning running-hand writing available in about 1860, therefore Willem Groeneveldt and Rutger de Saint Aulaire compiled their own manual (Kuiper: 86). The manual gives around 3,500 handwritten characters written by brush and corresponding regular characters side by side. The handwritten characters are arranged on the basis of their first stroke, last stroke and number of strokes. This manual will be discussed in Chapter 4.

Stanislas Millot – *Dictionnaire des formes cursives des caractères chinois* (1909).

French Lieutenant Millot collected many handwritten characters and arranged them according to the first strokes. The dictionary contains about 7,200 different handwritten characters and corresponding regular characters. The handwritten characters are arranged by the first strokes only. The dictionary contains characters written with a nib pen. His method will be discussed in Chapter 5.

Sukeyuki Endō - *Sōsho Daijiten* (1936),

This dictionary consists of many calligraphies. It can be used to find handwritten characters, even though many handwritten characters are not calligraphic. For this reason many handwritten characters can probably not be found in this dictionary. The calligraphies in this dictionary are arranged by the first stroke of the character and subsequently by the second and the third stroke.

This dictionary is the topic of Chapter 6

Fang-yü Wang - *Chinese cursive script: An introduction to handwriting in Chinese* (1958).

Chinese Fang-yü Wang, who was Professor Chinese at Yale University and Seton Hall University wrote *Chinese Cursive Script: An Introduction to Handwriting in Chinese* (1958). This is a very useful book to learn reading handwritten Chinese. The dictionary part of this book only lists around 300 handwritten characters. It is hard to tell whether the method is usable for a larger number of characters. This booklet will be discussed in Chapter 7.

The reviews of the manuals methods are based on usage of the books on seven handwritten texts. These texts were provided by Professor Wiedenhof at a course in reading Chinese handwritten texts. In addition to the texts, this research is based two guides in writing Chinese with a fountain pen and the course by Professor Wiedenhof itself. The course gave knowledge of the great variety of handwritten characters that may represent only one single corresponding regular character. The questions I asked when reviewing the books are the following; 'Are the features of the book explained in the introduction of the book?', 'Are the guidelines of how to find a handwritten character clear?', 'Do the handwritten form in each division meet the set criteria?' and 'Can characters be searched reversely, from regular form to handwritten form?'.

This resulted in a clear overview of the advantages and disadvantages of each method. With the gained knowledge I will give a view on what a useful method would look like based on my research.

4. A manual of Chinese running-hand writing

An old manual which can be used to find the regular form of a handwritten character is *A manual of Chinese running-hand writing: especially as it is used in Japan*. The Dutch students Willem Groeneveldt (1841-1915) and Rutger de Saint Aulaire (1827-1864) were confronted with Chinese handwritten characters when studying Chinese and Japanese at Leiden University in 1859-1861 (Kuiper 2017: 46). They encountered the same problem as many students of Chinese and Japanese nowadays do. It was hard to read handwritten characters. A source to lookup handwritten characters was not available in the West (Kuiper 2017: 86). The difference between corresponding regular traditional Chinese and regular Japanese characters is relatively small, although it is not completely clear what the differences are between handwritten Chinese characters and handwritten Japanese characters. Though I found that many handwritten forms used in this manual are still used in Chinese handwriting nowadays.

Groeneveldt and De Saint Aulaire made a dictionary for themselves with the support of Prof. Dr. Hoffmann. The Japanese encyclopedias *Banpō setsuyō fukizō* 萬寶節用富貴藏 and *Bandai setsuyō jirin pōzō* 萬代節用字林寶藏 were used as the source of the handwritten characters. The two books belonged to the Von Siebold collection from Leiden University. Nowadays these dictionaries are still part of the Von Siebold collection and can be found in the Special Collections of the Asian Library Leiden.

The main source *Banpō setsuyō fukizō* 萬寶節用富貴藏 is an encyclopedia which consists of 45,000 characters (Groeneveldt & De Saint Aulaire: II). However, there are way less than 45,000 unique characters. Groeneveldt and De Saint Aulaire have only around 3,800 handwritten characters in the second part of their manual. To compare, Chinese students that have finished high school know about 4,500 characters. Many of the 3,800 characters are counted double since an unknown number is placed twice in the dictionary. The two books belonged to Professor Dr J. Hoffmann, who taught Groeneveldt and De Saint Aulaire the principles of character handwriting.

The manual consists of two parts, the first part consist of regular characters with their

corresponding handwritten characters. The second part consists of handwritten character with the

corresponding regular characters.

Figure 5. A part of a page of the first part of the manual of Groeneveldt and De Saint Aulaire.

The first part of the manual gives regular characters ordered on the number of strokes (1) of a regular character. In every group with the same number of strokes, the characters are ordered on the basis of the number of the radical (6). For every given regular character (2), there is at least one handwritten form (3). When this character is a component of a more complex character, the complex regular character is given (4) with the corresponding handwritten character (5). For the scope of this thesis, I will not go further into this order.

Figure 6. A part of a page of the second part of the manual of Groeneveldt and De Saint Aulaire.

The second part of the manual provides handwritten characters and their corresponding regular characters. Every new category starts with a symbol to indicate the first and last stroke of each character that falls in that category (1). Every page in the second part is labeled with the first category (2) and last category (3) on that page. The characters are then arranged based on the number of strokes (4). For every handwritten character (5) the corresponding regular character (6) is given.

4.1 Structure of the second part of the manual

The method Groeneveldt and De Saint Aulaire used to arrange the handwritten characters is based on the first stroke, the last stroke, and the number of strokes. They divided all the character's first strokes into six chief divisions. On the left side, you can see the division, on the right side provides various examples within that division.
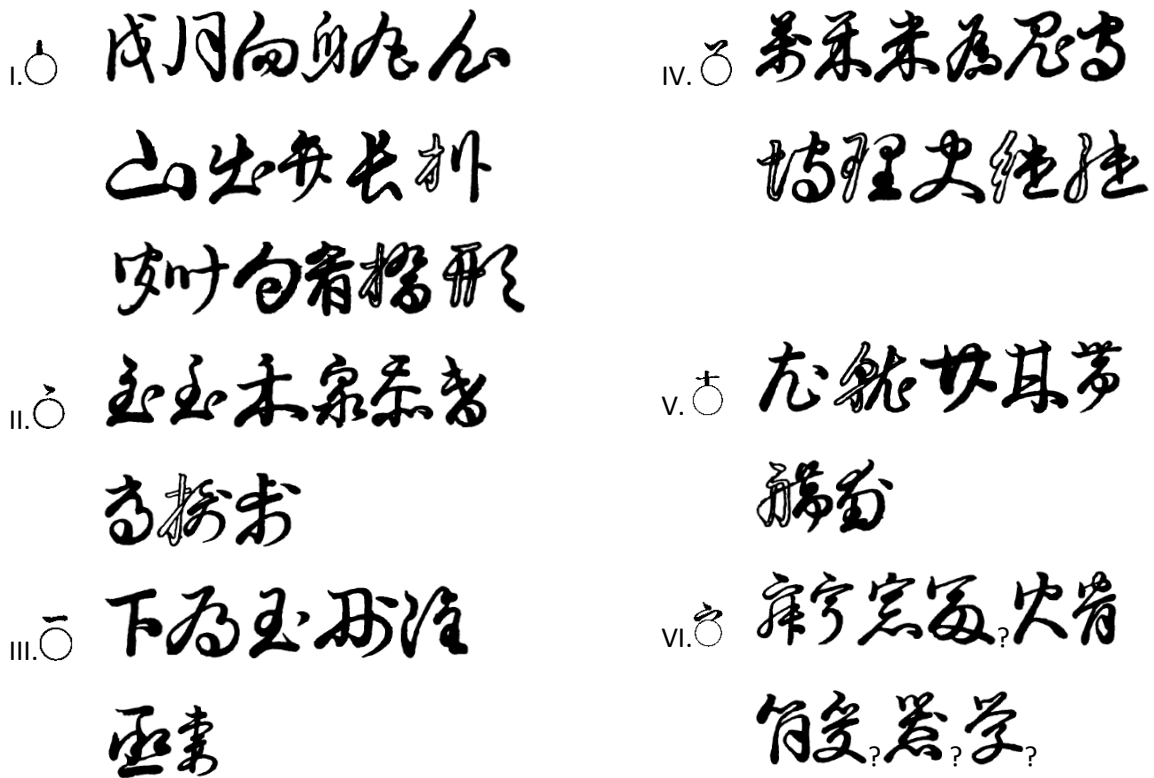
Figure 7. Overview of handwritten characters that fall in each Chief division

Groeneveldt and De Saint Aulaire divided each chief division into eleven subdivisions based on the last stroke of the handwritten character.

Figure 8. Overview of handwritten characters that fall in each subdivision.

A detailed overview of the boundaries of the classification can be found in Appendix 1.

This means that the second part of the manual is divided into 66 divisions in total; 6 Chief divisions each consisting of 11 Subdivisions, as Groeneveldt and De Saint Aulaire named it. I will use the following symbols to talk about a specific category.

Chief divisions I to VI   I. II. III. IV. V. VI.

Subdivisions 1 to 11   1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.

For a specific division, I will use combined symbols like I-1. or I-10. . These symbols are used by Groeneveldt and De Saint Aulaire as well. To indicate the number of strokes a character has, I will place the number of strokes inside the circle. For example, ④ or ⑤. This is my personal addition to the original symbols.

Groeneveldt and De Saint Aulaire look at the first stroke to determine in which Chief division a handwritten character belongs. Then they look at the last stroke of the character to determine the subdivision. In the introduction, they talk about a number of 45,000 handwritten characters (Groeneveldt & De Saint Aulaire: II). The second part I counted only roughly 3,800 characters, of which a few are counted twice because the same character is sometimes categorized into two different categories. The huge difference in number comes from the fact that the source is an encyclopaedia and not a dictionary, therefore characters oftentimes occur more frequent then once.

I have looked through the full dictionary and looked specifically if the characters were arranged in a consistent way. For all characters which this was not the case, I made a note in my writing block. This led to a list of findings. These findings are ordered into the following categories; How to look up a character (§ 4.2), hollow strokes (§ 4.3), dividing the characters (§ 4.4), stroke order (§ 4.5), counting the strokes (§ 4.6), Inconsistencies in the categories (§ 4.7) and cross-referencing (§ 4.8).

4.2 How to look up a character?

As an example of how the manual works, we will look up the unknown character.

To look up a character in the manual, you have to determine the category of the first stroke first.

There are six Chief categories to choose from; I. II. III. IV. V. VI. This character

falls in Chief category I. . The chart with similar-looking categories can be used to clarify each

category. One of the characters in the table illustrating the classification of characters is . This

confirms that the first stroke of our character belongs to I. .

Secondly, you have to determine what the last stroke of the character is and in which

Subdivision the handwritten character falls. The eleven Subdivisions to choose from are the

following; 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. . The last stroke of our

character looks like 3. .. When looking at the table illustrating the classification of the

characters, you can compare the last stroke with example character .

Lastly, you have to count the number of strokes. In this case it looks like the character has two

strokes. This is not as easy as it sounds, so I will come back on this (§ 4.6). When looking at the

characters at the page with characters from category I-3. .

The character is listed in this category, but consisting of three strokes.

Figure 9. Part of the page with character in category I-3. .

4.3 Hollow strokes

The index in the back of the manual gives an overview of examples for each Chief and Subdivision.

The introduction on the first pages of the manual tells you that the characters are categorized on the

basis of the first stroke, the last stroke and the number of strokes.

Some characters in the index have a component that is hollow. The manual does not explain

what this signifies.

The characters above are in ◌̆. I came to the conclusion that the hollow components do not

make part of the described component. If it was the case, then the characters would fall in ◌̇, ◌̄

and ◌̀.

This is also the case for the subdivisions, based on the last stroke. The characters above are in

⨮. The hollow component is not taken as part of the character, otherwise the characters would be

in 𝖵, ◌̲ and ⨮.

In the introduction, Groeneveldt and De Saint Aulaire explain that when the separateness of

a character is clear, they have taken them separately. If not, they have taken it entirely. The

separateness of the characters in the index is not clear to me. This is especially true for the last two

characters mentioned above.

4.4 Dividing the characters

Sometimes it seems that a certain character is put in the wrong place in the dictionary. However, when you count the strokes it seems that they only talk about a specific component of the character and leave one or more components out. Groeneveldt and De Saint Aulaire use the term "separateness". They say "when the separateness of the parts was clear, we have taken them separately" (Groeneveldt & De Saint Aulaire: III). It can only be guessed what they mean with a clear separateness. Based on the large number of characters taken separately, their definition has to be taken very broad. In my opinion too broad. I will show that one has to learn to divide the characters to work with this manual.

This character is placed in the category . However, if I would look up this character, I would look for it in category . I cannot split this character without knowing what the regular character is. In this case, the character is placed twice in the dictionary. This is the case for a large number of simple characters. A few examples of characters that are placed twice in the dictionary are listed below.

both in and .

both in and .

Most complex characters are only placed once in the dictionary.

this character for example, is only placed in and not in . This is confusing because initially, you will often look in the wrong section of the dictionary.
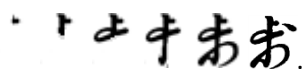
These are only few examples, it shows that characters are split in the manual. The basis of these splits is mostly due to the regular form of the characters. The regular form of above-mentioned character is 盛.
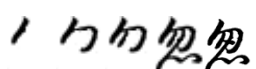
However, when you want to look up a character in the manual, you clearly do not know how to separate the character properly. Therefore, some characters, especially characters with a small number of strokes, are placed twice in the dictionary. More complex characters are also split, but the full character cannot be found by taking the first and the last stroke. Groeneveldt and De Saint Aulaire state that they only separated the characters when the separateness was clear. However, for many characters it is clear to them, but probably not to the user of their manual.

4.5 Stroke order

The stroke order for a handwritten character can be different from the regular stroke order (§ 2.3) This may lead to problems in finding a character in the manual. In order to find the first stroke, the user of the manual looks at the top-left component of the character. This is where a characters first stroke usually begins.

The first stroke is . The writing order of the regular character 上 is 丨 卜 上 . Since the top part looks similar to 上, you would expect the stroke order to be the same, but in handwriting it is not the same (§ 2.3 aspect 2). The writing order is .

It can also be hard to determine what the last stroke of a handwritten character is. Especially in the example below.
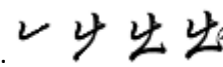
This character can be found in . This is because het last stroke is the stroke crossing the long stroke in the middle. .

In handwriting, it is usually harder to know what the first or last stroke is. However, this does not cause big problems when looking for a character in most cases.

4.6 Counting the strokes

Another issue can be that the number of strokes is hard to determine. However, you will get used to

counting the number of strokes in handwritten characters like Groeneveldt and De Saint Aulaire do,

when using the manual regularly. Furthermore, when you look at the categories with one stroke

more and one stroke less, you are probably already on the right page of the dictionary. The manual

puts it as follows; "They, [the handwritten characters] run for the most part, into one another, [thus]

must be counted by the tempos or touches of the pencil" (Groeneveldt & De Saint Aulaire: III).

In practice, this definition is useless. When using the manual, you will find that this means

that some strokes which have a sharp corner count for two strokes. Some strokes with a sharp corner

count as a single stroke.

this character consists of four strokes,. . The first stroke has a sharp corner,

but the fifth stroke in the following character is counted as two strokes.

You can see that this way of counting numbers or strokes needs to be learned by using the

dictionary, because it seems to have nothing to do with 'tempos or touches'. Groeneveldt and De

Saint Aulaire already address this problem, but claim that this is just a minor issue because characters

of one stroke more or one stroke less are near the found location in the manual (Groeneveldt & De

Saint Aulaire: III).

4.7 Inconsistencies in the categories

I have reviewed all Chief divisions and Subdivisions. Some categories are straightforward, other

categories are inconsistent and some even overlap with other categories. Groeneveldt and De Saint

Aulaire do not explain their categories other than giving sample characters in a specific category and

one table with similar-looking characters to contrast similar-looking categories.
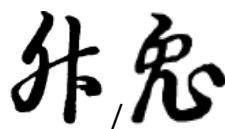
One example of these inconsistencies is a certain first stroke which looks like ⟍

I will first give the table with example characters of Chief division I ⊘ and Chief division II ⊘ as in

the back of the manual.

Chief division I ⊘

Chief division I is very clear. It is noteworthy that even the smallest vertical first stroke belongs to this

division. Also slanting left strokes belong to this division. Even curly lines which seem to begin with a

dot belong to ⊘.

 Many slanting strokes fall in ⊘, even vertical lines with a crinkle belong to ⊘.
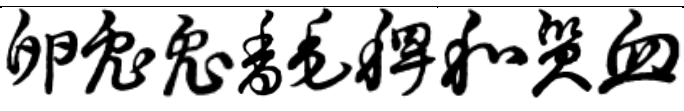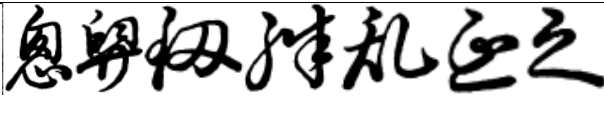
Chief division II ⟳

 These characters are in ⟳ , but characters with similar first strokes are in ⟳.

Below is a list of characters in each division. The first strokes look very similar.

As shown above, it is very hard to tell in which category you have to look for a specific character. This is not unique to this specific stroke. There are similar problems for almost every category.

4.8 Cross-referencing

A major disadvantage of the manual is that it does not contain cross-references. In other manuals there are references from a handwritten character to other similar-looking handwritten characters of to a list of regular characters with a similar component. It is not possible to see where a certain character comes from. It is clear that the characters in their manual are copied from *Banpō setsuyō fukizō* and *Bandai setsuyō jirin pōzō,* the main source for their handwritten characters. Since the characters have been copied by hand with much precision and care, cross-references are helpful because they show where to find related characters. It also makes it easier to see where they put which character and what the basis is for their classification. Other books that will be rieviwed have cross-references, which is very useful to quickly see, which other forms of the characters exist in

handwriting (p.13).

4.9 Reading the note
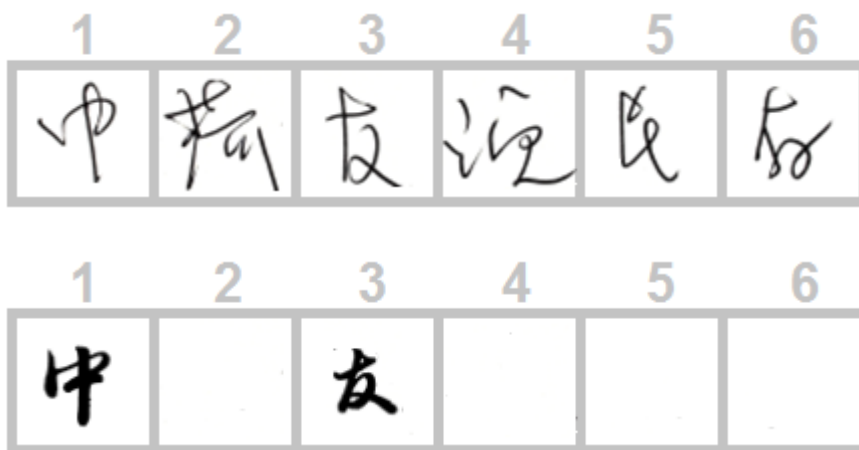
When using the manual to transcribe the note Xiāo Wǔ wrote in the book he gave me. The first

character cannot be found in . We can see that a handwritten character can be found when we

reverse-search it, it looks slightly different in the first part of the manual (Groeneveldt & De Saint

Aulaire: 6), but are unable to find it the proper way. The third character can be found in the first part

(Groeneveldt & De Saint Aulaire: 8), but not in the second part when looking for .

     The second, fourth and fifth character are not in the dictionary in the above handwritten

form. I doubt that anyone can decipher the last character with the help of this manual because it

looks different than the forms the manual contains and therefore it cannot be found. The character is

in the dictionary but the shape is different from the character Xiāo Wǔ wrote.

     So, the dictionary does not help us decipher the note since many characters are not in in the

dictionary or written in a different way.

5. Dictionnaire des formes cursives des caractères chinois.

The French Lieutenant Commander and Chinese palaeography specialist Stanislas Joseph Émile

Albert Millot (1875-1931) compiled a dictionary for handwritten Chinese characters. For this

dictionary, *Dictionnaire des formes cursives des caractères chinois* he received the Stanislas Julien

Award in 1910 and one year later, he was received into the Legion of Honour, the highest French

order of merit for military and civil merits (Bibliothèque nationale de France).

In the preface of the dictionary Millot gives an example of the problems he had encountered.

He went to Baku with the cruiser Le Pascal and encountered about 30 warships of different

nationalities, among them were ships from Tiānjīn and Běijīng. The French marines received a

handwritten Chinese letter addressed to a Chinese Admiral prisoner. With the help of the study they

had done, they were able to translate the letter (Millot: 5). Years before this encounter, he took part

of the China campaign of 1900 with the French navy. There he encountered a script he and his men

were unable to decipher. The dictionary he used did not help much since the characters were

unrecognizable.

The dictionary contains about 7,200 handwritten characters. Millot had used only two kinds

of sources for his *Dictionnaire des formes cursives des caractères chinois.* Namely, "Chinese books for

the study of cursive script: 草字汇, a dictionary containing 3559 forms and with which we have

corrected the many faults (lithographic edition of 1886), 千家诗草法, 千字文草法, etc;" (Millot: 5).

The second source were "various texts of which we possessed the transcription in cursive characters

and in regular characters; in drawings of illustrated novels for example, oftentimes the titles are

transcribed in cursive characters" (Millot: 5).

Millot arranged the 7,200 handwritten characters in 248 series. Each series is a group of

handwritten characters that look similar or have at least a similar top of the character. These series

are divided over 20 synoptic tables. The synoptic tables are two times ten categories. Each Synoptic

Table consists of characters that all have a similar character top. To find in which series an unknown

handwritten character falls, you need to follow a nine-step plan, of which I will give a summary on

page 37 (Millot: 122).

113

No.	Regular	Index	No.	Regular	Index	No.	Regular	Index	No.	Regular	Index
6792	舒	135-VI	6808	觀	147-XVIII	6825	慍	61-IX	6844	韭	179
6793	舒	135-VI	6809	觀	147-XVIII	6826	悍	61-VII	6845	恃	61-VI
			6810	觀	147-XVIII	6827	懌	61-XIII	6846	恃	61-VI
6794	竹	118	6811	觀	147-XVIII	6828	悒	61-VII	6847	怯	61-V
6795	分	18-II	6812	觀	147-XVIII	6829	將	41-VIII	6848	懷	61-XVI
6796	翮	124-V	6813	勁	19-VII	6830	將	41-VIII	6849	慎	61-X
6797	鶺	196-V	6814	皴	107-VII	6831	將	41-VIII	6850	裝	145-VII
6798	鶺	196-VII	6815	鯨	195-VIII	6832	醬	164-XI	6851	情	61-VIII
6799	鶹	196-VII	6816	乍	4-IV	6833	槳	75-XI	6852	情	61-VIII
6800	數	66-XI	6817	亡	8-I	6834	獎	37-XI	6853	情	61-VIII
6801	龢	214-V				6835	懍	61-X	6854	情	61-VIII
						6836	惶	61-IX			

Figure 10. Part of a page of the main part of the dictionary with handwritten characters.

The dictionary has numbered (1) all handwritten characters (2). Every handwritten character (2) has its corresponding regular character (3) right next to it and an index number (4) based on number of radical as in the 康熙字典 *the Kāngxī dictionary* and number of strokes of the regular character. Each horizontal black line (5) signifies the end of a series.

5.1 Structure of the dictionary

The characters in the dictionary are arranged based on 20 tables in which all characters have a

commonality. I will try to give the principal commonality, but due to wide variety within each table,

which is shown below, it is rather hard.

Table no. 1

The top of each character in this category has two vertical lines and one horizontal line which can be

curved. The horizontal line is in most characters between the two vertical lines, but not necessarily, it

is always the highest part of the character.

Table no. 2

The top of all characters in table no.2 have one horizontal line and one vertical line. These two lines

can be connected. In some cases even two vertical lines belong to this category.

Table no. 3

This category consists of characters as in Table no. 1, only with its top penetrated by a vertical line or

in which the vertical line is the highest point of the character.

Table no. 4

A dot on top of each character is present in each character in Table no. 4. Sometimes the dot is

connected to the rest of the character.

Table no. 5

Penetrated horizontal lines which are not running into any other line belong to Table no. 5
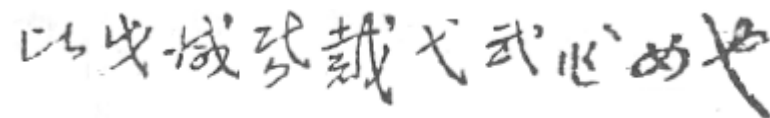
Table no. 6

The characters in Table no. 6 start with an oblique line which may run into a horizontal line.
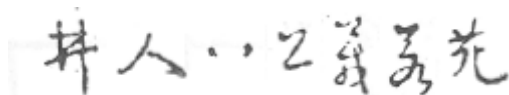
Table no. 7

At least one horizontal line which is cut by a line thatruns from top left to bottom right.
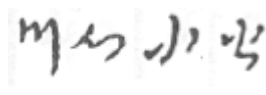
Table no. 8

Character with two vertical lines, accents or slanted lines in opposite direction on top of the

character belong to Table no. 8.
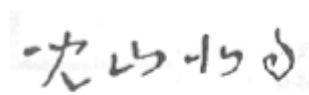
Table no. 9

Characters of which the top consists of three dots or vertical lines at more or less the same height.

Table no. 10

Any other character that does not fit the descriptions above.

Table no. 11 to table no. 20 consist of characters with a left and right side. Table no. 11 has characters with a component on the top-left side of the character that would otherwise be in Table no. 1. Table no. 12 is similar to Table no. 2 etcetera. A detailed overview of example character can be found in Appendix 2 of this thesis.

5.2 How to look up a character?
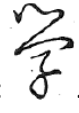
To show how this dictionary works, I will give an example of the unknown character: .

On page 122 of the dictionary is a list (the nine-step plan) of characteristics for all of the synoptic

tables (Millot: 122). Example forms can be found on page 124 of the dictionary (Millot: 124) When

looking at the top of the character and going through the nine-step plan, you can see the character

has two vertical lines with a broken horizontal line in between. The line is the highest part of the

character, so it qualifies for Table no. 1.

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
1		1 - 18	3136
2		19 - 22	S. 61 . S.180
3		23 - 63	
4		64 - 76	
5		77 - 90	
6		91 - 93	
7		94 - 95	
8		96 - 145	
9		146 - 152	
10		153 - 166	4614
11		167 - 170	
12		171 - 172	
13		173 - 178	
14		179 - 181	S. 34
15		182 - 200	
16		201 - 205	
17		206 - 225	S.48 . S.148 . S.176
18		226 - 247	S. 34 . S.37 .
19		248 - 256	

Figure 11. Table no. 1

A similar character cannot be found in Table no. 1. So we have to follow the nine-step plan to find other Tables with similar characteristics. The first Table with a similar top can be found in Table no. 9. Series 108. When looking at the example characters, the top part looks a little bit alike, but there is not yet a sample character that looks like the character we are looking for.

As I will show on the following page it can be a challenge to find the character. We have to go to characters 2936-3042 to see if our character is among these characters because the top part of the character looks similar to the characters example characters in series 108.

2947	無	86-VIII	2963	簾	118-XIII	2977	業	75-IX	2993	懟	61-XIV
2948	無	86-VIII	2964	簾	118-XIII	2978	巢	47-VIII	2994	簽	118-X
2949	無	86-VIII	2965	簾	118-XIII	2979	巢	47-VIII		叢	140-X
2950	無	86-VIII	2966	筵	118-VII	2980	巢	47-VIII	2995	農	161-VI
2951	無	86-VIII	2967	瑩	96-X	2981	纂	120-XIV	2996	鬮	191-VI
2952	無	86-VIII	2968	篇	118-IX	2982	榮	93-X	2997	筵	118-VII
2953	無	86-VIII	2969	帶	50-VIII	2983	簞	118-XII	2998	闥	169-XIII
2954	無	86-VIII	2970	帶	50-VIII	2984	簪	118-XIV	2999	蓬	118-XI
2955	無	86-VIII	2971	鬧	191-V	2985	籤	118-VIII	3000	閃	169-II
2956	譽	149-XIV	2972	耑	126-III	2986	學	39-XIII	3001	覺	147-XIII
2957	闇	169-VIII	2973	罩	68-VIII	2987	學	39-XIII	3002	覺	147-XIII
2958	營	86-XIII	2974	笋	118-IV	2988	學	39-XIII	3003	覺	147-XIII
2959	螢	142-X	2975	榮	75-X	2989	箭	118-IX	3004	覺	147-XIII
2960	蠱	205-XII	2976	策	118-VI	2990	對	41-XI	3005	覺	147-XIII
2961	簷	118-XIII				2991	對	41-XI	3006	貿	154-V
2962	簾	118-XIII				2992	對	41-XI	3007	貫	154-IV
									3008	贊	201-XIII

5.3 Dividing the characters

Due to the fact that it is not necessary to count the number of strokes to find a character in

Dictionnaire des formes cursives des caractères chinois and only divide the characters in a left and

right part, it is rather easy to find the corresponding series. I would say that it is for many characters

which consist of a left and right part, it is rather easy to see this divide.

5.4 Inconsistencies in the categories

Because there are more categories and the categories are better defined than in Groeneveldt and De

Saint Aulaire, there are less inconsistencies in the categories. I think that Millot has done a terrific job

in categorizing all the handwritten characters he found in the various sources he used.

5.5 Cross-referencing

A big accomplishment by Stanislas Millot is the way characters have cross-referencing. Every

handwritten character has an index number based on the number of the radical and the number of

strokes in the regular character (Millot: 9-119).

A list of all corresponding handwritten characters can be found for all regular characters that

are present in the dictionary (Millot: 143-172).

In the synoptic tables, various indications for similar series are given. This way it is possible to

find characters that seem to fall in a certain category but cannot be found because they belong to

another series (Millot: 124-135).

5.6 Other useful tables

There is a Table of equivalences of the characteristics (Millot: 137-142). If the top part of a handwritten character is unclear, this table can be used to find similar-looking tops or components and in which Synoptic table they can be found.

There is also a list for the inferior bottom components (Millot 177-180) and right-hand components (Millot: 180-189). Unfortunately, this list goes from regular character to handwritten component.

A table of similar-looking handwritten characters can be found in the back of the dictionary (Millot: 189).

5.7 Reading the note
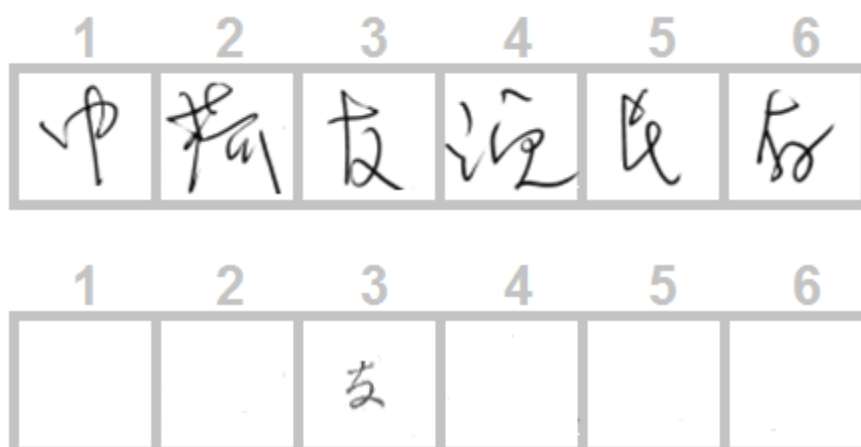
When we want to transcribe the note with Millots dictionary, we can see that the dictionary is not very useful nowadays. The third character can be found (Millot: 34), although it looks slightly different from the variant written by Xiāo Wǔ. The other characters are not in the dictionary in this handwritten form.

It is a fabulous work, the method is worked out consistent, clear and unambiguous, but the set of handwritten characters that is used is not up-to-date.

6. 草書大字典 Sōsho Daijiten.

The Sōsho Daijiten is a very large dictionary. The editor is the Japanese Sukeyuki Endō (1875-1951).

Endō wrote several books about Cǎoshū and compiled at least two dictionaries before his most

intriguing work, the Sōsho Daijiten of 1936 (Webcat Plus). This book is very unique, since it is made

to find the corresponding regular character and the author for calligraphies made by well-known

calligraphers of different eras. The dictionary is unique, even to the extent that a Taiwanese

publishing house reprinted the biggest part of the book without referencing to the original book of

Sukeyuki Endō. It is the only book known by Fang-yü Wang which gives the corresponding regular

form of a handwritten character and is (Wang: XXX).

The calligraphies in the dictionary come from nearly one thousand calligraphers. The oldest

calligraphies date back to the Late Han Dynasty (25-220) and the most recent calligraphies are

written during the Qing-dynasty (1644-1911). However, most calligraphers whose work is present in

this dictionary lived during the Ming-dynasty (1368-1644). The style of all characters is Cǎoshū.

Although it is one of the most used styles and a basis for present-day handwriting, it is unclear

whether a large number of handwritten characters written nowadays can be found in this dictionary.

The dictionary consists of thousands of different handwritten characters. For every

handwritten calligraphy the name of the calligrapher is provided. There is an index based on the 214

Kāngxī radicals. With the use of this list it is possible to find handwritten forms of 7,200 regular
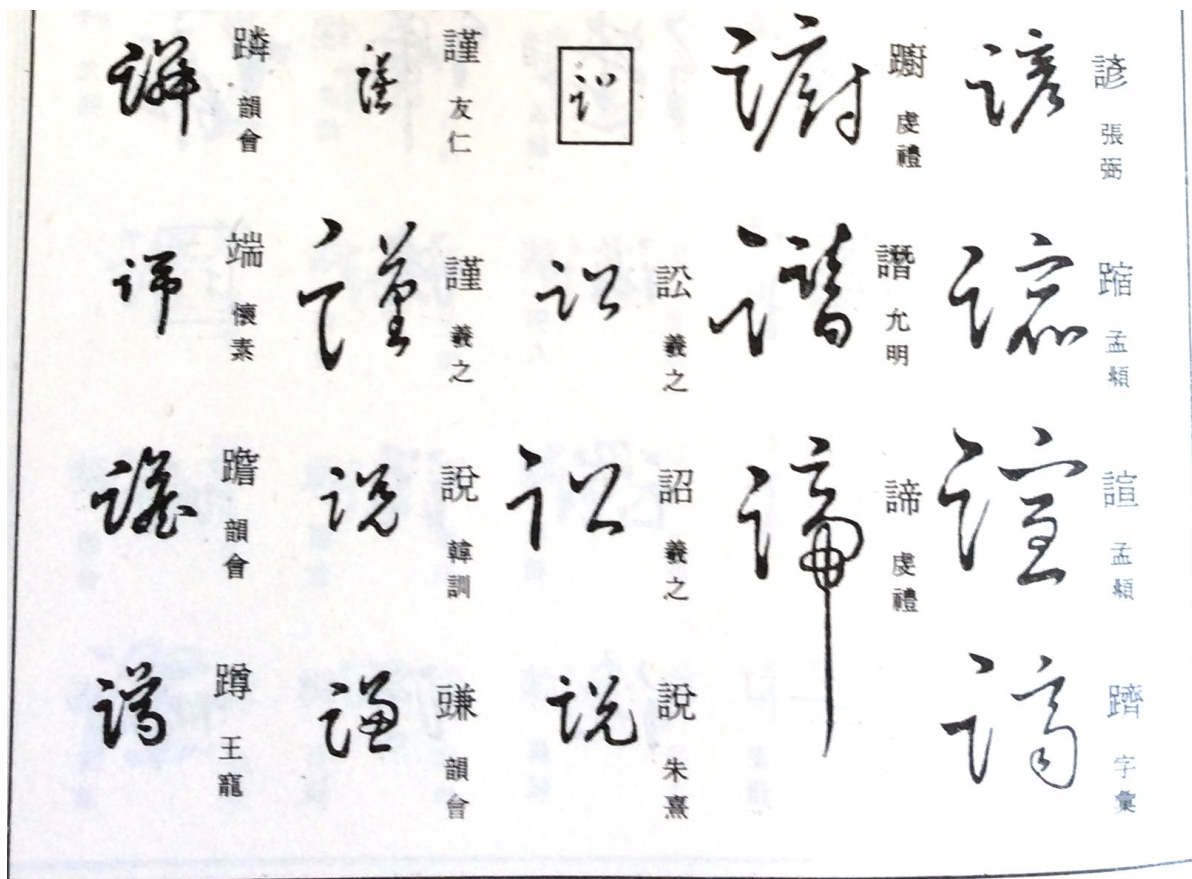
characters.

6.1 Structure of the dictionary

The dictionary divides all characters according to their first stroke. It is either a dot ⟋ (点 diǎn), a

horizontal stroke ⟋ (横 héng), a vertical stroke ⟋ (直 zhí) or a slanting left stroke ⟋ (撇 piě). The

dictionary has 54 subcategories as is shown below. The pages thereafter are divided into 364

subcategories.

点 **diǎn**

横 **héng**

直 **zhí**

撇 **piě**

6.2 How to look up a character?

To find a handwritten character in the dictionary, you have to determine what type of stroke the first stroke is. It is either a dot, horizontal stroke, vertical stroke or slanting stroke. We will show how to find a character using the following character 说.

In the index we first go to the list of 点 diǎn, because the first stroke is a dot. Subsequently, we look at the second stroke of the character, which is a horizontal stroke. It looks like it could be in this category 讠 or 讠. The first category we found consists of only five characters which do not look like the character we are looking for.

The second category 讠 gives characters of which the left side looks like the left side of the character we are looking for. Then, we have to determine the next stroke of the character, which is clearly a dot again. We can ultimately find our character in category 讠 (Endō: 79).

6.3 Stroke order

The stroke order is very important when finding a handwritten character in the dictionary. It is clear that one has to search stroke by stroke to find the corresponding category. However, it is not always clear what the first, second or third stroke of a character is.

6.4 Inconsistencies in the categories

Sometimes it is hard to tell whether the character is placed in the proper category. A few examples are shown below. The first character starts with a horizontal stroke according to the dictionary. The second is too, but both seem to start with a slanting stroke.

 (p.276)
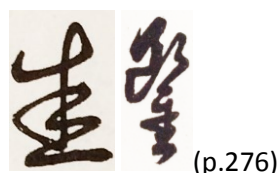
6.5 Recognizing elements

In some cases it is very hard to find a character in the dictionary. For example, the following characters are categorized under . Although the regular form of these characters consist of a horizontal stroke and two dots, the handwritten form does not clearly consists of those components. In case of the second character, even the regular form does not contain two dots, but a square. Although a square can be written cursively by two dots, I assume that many users of a dictionary like this are unlikely to identify the middle part of the handwritten character as dots.

 (平)　 (叵)
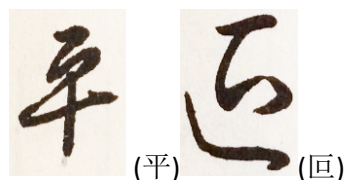
6.6 Reading the note
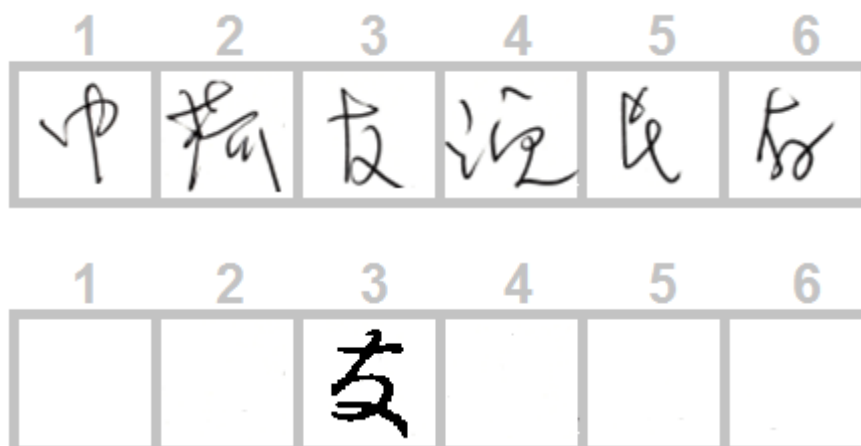
The first character was not easy to find. It starts with a vertical stroke but in this dictionary it can only be found without this first stroke (Endō: 583).

The second character has a horizontal stroke crossed by two vertical strokes on top. We have to skim over ten pages to come to the conclusion that we cannot find this character. Reversed search shows us that handwritten forms of the regular form of this character are written on different five pages. From these five characters, only one has a similar top but at all five, the bottom part looks very different. Obviously, the character usually cannot be found this way, because we look up the character since we do not know the regular form.

The third character is findable, but it is hard because in the dictionary the curl consists of two separate strokes. The fourth character is not in the dictionary. Even when we split the character ourselves and both halves are in the dictionary, the handwritten forms look different. The fifth character has a unique top, therefore it is hard to determine, where in the dictionary we need to look for the character. A similar-looking handwritten form of this character in the dictionary (Endō: 744), but I can hardly imagine that anyone would be able to find by using the index. Because it is not similar I did not include it in the table as a proper search result. The sixth handwritten character is not present in this dictionary, only other handwritten characters with the regular form.

We can say that only one character can be found, two other characters are in the dictionary

but cannot be found by using the index. Three handwritten characters are not in the dictionary in the

used handwritten form.

7. Chinese Cursive Script: An Introduction to Handwriting in Chinese.

One of the few course books in reading handwritten Chinese is *Chinese Cursive Script: An introduction to Handwriting in Chinese*. The manual is written by Fred Fang-yü Wang (1913-1997), who was a Beijing-born Professor in Chinese Language at Yale University and Seton Hall University (Dobrzynski). Wang wrote several course books and dictionaries, mainly for second-language learners, among them, *Mandarin Chinese dictionary: Chinese – English* and *Read Chinese: a beginning text in the Chinese character* (WorldCat).

Wang made a course in reading Chinese handwriting for beginners. Therefore he chose to use the three hundred characters from *Read Chinese: Book one.* He gattered various handwritten forms of these three hundred characters from friends who contributed samples of their own handwriting (Wang: acknowledgements).

The result of his research is *Chinese Cursive Script: An introduction to Handwriting in Chinese* with an index that can be used as a dictionary. The index counts around eight hundred handwritten characters. This is a very small number of characters and the characters that are part of this selection are the first characters students learn. Therefore complex characters are rare in his manual. The course book is obviously more than the dictionary-like index in the back of the book.   The book is very informative. The book gives an introduction to Chinese handwriting and its origin. It gives an overview of the types of characters that were used at different times. From ancient graphs about 2000 B.C. until the modern script, which is still in use nowadays (Wang: I-XXIV). Wang clearly describes the effects on the appearance of the characters when they are written without lifting the tip of the pen (Wang: XXV).

Then 20 lessons in reading handwritten characters follow. These lessons are based on another reader he wrote, *Read Chinese, book one.* Within these 20 lessons, 300 characters are taught. The 300 characters, which are the same 300 characters as in *Book one* come in different styles, from similar to regular to very cursive (Wang: 1-188).

Each lesson consists of three parts, an overview of handwritten characters and their corresponding regular character, a set of sentences in handwritten script to transcribe and list of notes on the various handwritten characters and the parts of which it consists.

INTRODUCTION TO CHINESE CURSIVE SCRIPT

LESSON 1

行草 [1]		楷字 [2]	行草		楷字
1	**2**	**3**			
㇀		一	㇔ ㇒		八
二		二	九		九
三		三	�	千	十
勹	勿	四 四	彡	月	月
丟	亙	五	彳	個	

Figure 12. A part of a character-overview page, each lesson starts this way.
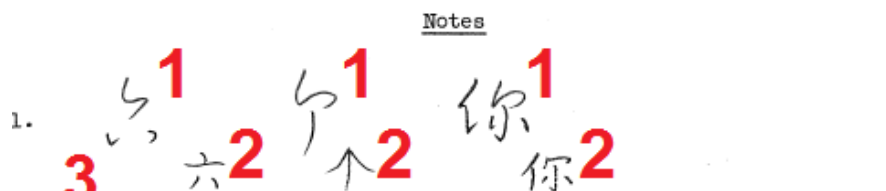
Each lesson starts with a list with handwritten characters, which occur in that corresponding lesson (1). Each character may come in different forms, so variations are given (2). For each handwritten form, the corresponding regular form is given (3). The list is simple and straightforward.

Figure 13. A list of sentences to practise reading handwritten characters.

The sentences are written from top to bottom, from right to left. Currently most documents are written from left to right, from top to bottom. Each sentence may contain multiple handwritten forms of the same character. Characters from previous lessons occur in later lessons in order to prevent forgetting how to read certain characters.
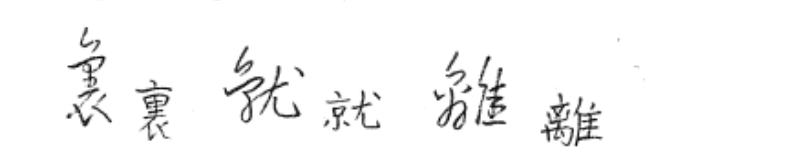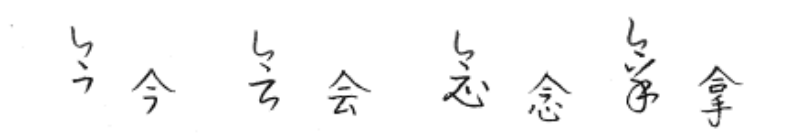
Figure 14. An example of a note at the end of each lesson

Each lesson closes with a list of notes. Each note gives various handwritten characters with a similar component (1) and its corresponding regular character (2). The component is given separately (3) and Wang clarifies where this element in a character may occur and which regular components it represent. For some characters further examples are given (4). Lastly Wang gives some references to later lessons in which the particular component occurs (5).

The book has two appendices. In Appendix 1, Wang gives various handwritten components and example characters in which these components occur (Wang: 189-207). Appendix 2 lists handwritten characters which can be easily confused (Wang 208-211). The book closes with the index, which is the most interesting part of the book for this research. (Wang: 213-240). It will be discussed in the following paragraph.

7.1 Structure of the index

Wang states in his references that the only dictionary available to find a the regular form of a handwritten character is 草书大字典 Sōsho Daijiten by Sukeyuki Endō (Wang: XXX). This means that Wang was not familiar with the books of Groeneveldt & De Saint Aulaire and Millot. When looking at the structure of the index, it seems clear that Wang used the Sōsho Daijiten by Sukeyuki Endō as a basis for his index. He created some new dictionary-heads and divided the characters on more than only the basis of the first stroke(s).

Fang-yü Wang divided handwritten characters in his index in 16 categories, based on the first stroke of each character. The only method to rely on, according to the references in his book, was *Sōsho Daijiten* by Sukeyuki Endō. In contrast with the 364 subcategories Endō distinguishes, Wang distinguishes only 113 subcategories (Wang: 212). This might be the case because his work only arranges about a total of 800 different handwritten forms from 300 different characters (Wang: 216–240) . Actually the difference is even bigger. Wang gives only 34 Top categories, with a total of 170 characters. To me this confirms that, with a bigger database, the model of Wang needs to be extended with more dictionary-heads.

The index starts by describing five steps to find a certain handwritten character. The first step is to split the character in two halves when possible.

Figure 15. Most handwritten characters can be split "horizontally or vertically according to Wang, if not they are taken as "Wholes".

Wang states that most handwritten characters can be split. When a character is split horizontally, it is divided into a "top" and a "bottom". If the character has a clear "left" and "right" it is split vertically. If a character cannot be split, it will be taken as a "whole". Characters which can be split diagonally are taken as a "top" and "bottom" rather than "left" and "right" (Wang: 214).

Then, characters are arranged in a similar way like in Sōsho Daijiten, "dot", "horizontal line", "vertical line" and "slanting line".

7.2 How to look up a character?

The index gives an explanation of how to find the regular form of, for example, the handwritten character $\vec{\omega}$. Firstly the character needs to be split horizontally or vertically when possible. When there is no clear 'Top' and 'Bottom' or 'Left' and 'Right', the character is arranged in the category 'Wholes'. Each of these five categories are further divided into four sub-groups, as Wang calls them, namely, 'Dot' (diǎn), 'Horizontal line' (héng), 'Vertical line' (shù) and 'Slanting line' (piě) (Wang: 213). The Chinese translations given between brackets in Wang's index, match the four main categories in *Sōsho Daijiten*.

The character above can be split into a left and a right side. The second step is to choose the simpler part of the two. In this case, the left side is the simplest, therefore it is categorized as ´Left´. Then you have to determine what the first stroke of the simplest part is. In this case it is a dot, so we have to look for this component within the category ´Left Dot´. An overview of key elements, as Wang calls them, is provided (Wang: 212). This overview tells us to go to page 228.

Figure 16. A part of a page of the Index of Chinese Cursive Script.

7.3 Small number of characters used

Because only a small number of characters is used in the index, it is unclear if the method of Wang is still usable for a bigger number of characters. What we can see, is that there are more subcategories needed.

7.4 Unclear categories

Some categories are suitable for finding the characters, the way they are written in Wang's book. However some characters look different when they occur in handwriting. For example these characters.

They are usually written without the first horizontal stroke.

When looking in the Top Slanting part of the index, there are no such characters. With a larger number of characters, as in Endō's dictionary. It is highly unlikely that the regular form of the character will be found.

7.5 Large number of wholes

Wang groups all the characters which cannot be split easily under the header Wholes. After looking at a large number of handwritten characters, I came to the conclusion that many characters would fall in the category Wholes. Especially characters that are enclosed and characters which contain only one ór more than two components.

7.6 Dividing the characters

There are, even though only a small number of characters is used, some inconsistencies in the index. One example is, when to divide a character. The characters below can be optically split in a left and right side. One of the two comparable characters is split, the other one is taken as a whole.

This is probably due to the regular form of the characters 外 and 水 respectively.

Another problem is that characters will be placed twice in the dictionary. It is inevitable to put different handwritten forms at multiple places in the dictionary, but the problem would be more severe when splitting characters. The former would be a Top Bottom, the latter a Whole.

7.7 Determining what the easiest part of a character is

Some character need to be split in order to find the regular form in the index. The characters are placed in the dictionary on the basis of the easiest part of a character that consists of more than one constituent. It is often hard to see what part is the easiest. So you have to search for both parts. In some cases it is taken as a Whole and you have to look for the handwritten character in three different places.

7.8 Reading the note

1	2	3	4	5	6
		友			
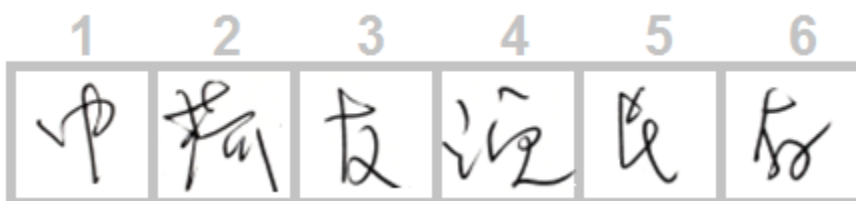
The first character cannot be found in this form. The second, fourth and sixth character are not part of the 300 characters Wang used. The third character can be found, but has a different top. The first stroke is Top Horizontal. The fifth character is in the dictionary, but written in a different handwritten form.

It is already mentioned that the number of characters in this booklet is very small and it is a course book, not a dictionary. Therefore it cannot be used as such.

8. Conclusions

This conclusion will once more explain why a method for categorizing handwritten characters is necessary. It will conclude that with the help of the four manuals, we are still unable to translate a simple autograph. The methods of the four manuals are thoroughly reviewed and the findings will be noted shortly once more. Lastly, an overview of the findings will be given of what features a user-friendly method of categorizing handwritten Chinese characters would consist of.

It is clear that anyone who wants to read handwritten Chinese has to learn to read cursive script because you cannot solely depend on a dictionary. I think that it is important that when learning to read handwritten Chinese, one has to learn to work with a specific handwriting dictionary because every dictionary has a different way to arrange its characters. Because every writer has his or her own unique handwriting style, it is impossible to include all variations of handwriting. When a reader has learnt to recognize uncommon oddly-written variants of the first strokes of a character, he will be able to find the character he has been looking for.

The demand for a dictionary to find the regular form of a handwritten character is evident. It is acknowledged by scholars Groeneveldt and De Saint Aulaire when they prepared their travels to China and Japan. They translated documents for the Dutch government and thought it was useful to compile a manual. Stanislas Millot felt the need to study Chinese handwriting for intelligence purposes and seemed not to be aware of the manual of Groeneveldt and De Saint Aulaire. Sukeyuki Endō compiled a dictionary to make calligraphies readable. When Fangü Wang wrote his course book in reading Chinese handwriting, he was only aware of the existence of the dictionary of Sukeyuki Endō, and made it very clear that it is necessary for students of a Chinese language to learn to read handwritten Chinese. I agree with the authors of the books that it is not only useful, but also a necesity to learn to read handwritten Chinese. It is puzzling that there is only a handful of sources to consult. The available sources contain characters that got into disuse or in case of Wangs booklet, only contain a very limited number of handwritten characters.

The shortcommings of the books becomes clear when using it on a present-day handwritten note. Translating this single note written by Xiāo Wǔ is just a small example, but it represents the issues that occur when using it on a bigger text. The extent of the shortcommings need further study. The result of using the manuals to read the note in the introduction provides us the following overview.

Figure 17. Overview of the characters found in the manual in order to transalte the autograph.

A manual of Chinese running-hand writing: especially as it is used in Japan is an exceptional work because it is the first of its kind. It is a pioneering work written by two Dutch students from Leiden University over 150 years ago. Wim Groeneveldt and Rutger de Saint Aulaire put an enormous amount of effort in compiling this manual. It is a very useful work to look up a regular character or component of a handwritten character.

Looking more closely at the manual, there are a few conclusions that can be drawn. The index has hollow strokes of which the significance is not explained in the manual. The characters are

divided into parts when the separateness is clear. There are no clear indications given for when this unclarified separateness is present in a character. The stroke order in handwritten characters is different from regular characters and it depends on the writer. Therefore it is sometimes hard to determine what the first and the last strokes are of a character. Counting the number of strokes in a handwritten character is also hard. Groeneveldt and De Saint Aulaire do not explain how they count strokes, but it becomes clear that it is harder than just "count the tempos or touches of the pencil" (Groeneveldt & De Saint Aulaire: III). It is also unclear what they mean with tempos or touches of the pencil. Furthermore the dictionary is oftentimes inconsistent in which category a certain first or last strokes belongs to. This is problematic when trying to find a character, even when using the index in the back of the manual. It would also be an advantage to use cross-references to quickly look for other corresponding handwritten characters.

The question remains, how many of the characters are still in use today and thus, whether the method is still usable. After critically reviewing the methods used in the before-mentioned books (p.13) as well. I believe that the categories are too broad. Categorizing characters on the basis of the last stroke is also harder than on the basis of the first strokes.

Dictionnaire des formes cursives des caractères chinois uses a method that is my personal favourite among the four reviewed books. The characters seem to be organized in a very clear and unambiguous way. There are many cross-references and the characters are written in different styles.

Sōsho Daijiten is as plainly organized as Millot's dictionary. It is a pity that it only contains calligraphies from the imperial period. Although modern handwriting shares a lot of characters, it is unclear how useful it is to decipher for example, a letter from a Chinese colleague.

Chinese Cursive Script: An introduction to Handwriting in Chinese is one of its kind, a course book with reading exercises. Wang intended to improve the method he knew, used by Sukeyuki Endō. I personally think that he made it easier for a part of the characters, but made it harder for many other characters to be found. The method works for the small number of characters he uses, but for a large number, it would give many problems. Many characters are hard to split into left and right or

top and bottom, therefore there will be many characters to be taken as a whole.

I would suggest to use a method that is solely based on the appearance of handwritten characters. The database should include characters that are written in the past 30 or 40 years because writers of these characters grew up with simplified characters. Every character that is written in a different way should be included in the dictionary as a separate entry. The categorization of Millot and Endō can be used as a basis for dictionary-heads, but on the basis of a full database a decision needs to be made which dictionary-heads are able to divide the dictionary into reasonable sized parts. In the main part of the dictionary I would take characters as Wholes and not divide them in any way.

In order to learn how the dictionary works, a student needs to work with it. When the dictionary comes with a course it is likely that the followers of the course continue using the dictionary because they learned how to use it.

Although the main part of the dictionary consists of Whole characters, it would be an advantage when characters can be found by handwritten components. Therefore I would recommend to reference to or list characters that have a specific handwritten component in it. Of course this would be a major challenge to do. Extensive lists would be necessary to refer to all characters with a specific component.

What I also should include is a list of disyllabic words, so it is not necessary to look for two characters, but rather one.

The four works are all very unique and special. They have worked for the authors shortly after being written. However, to use it to decipher a present day note, the dictionaries contain too many outdated characters. There are more variants today which are not part of any of these four dictionaries. A new dictionary based on present day handwritten sources would benefit everyone who encounters handwritten Chinese.

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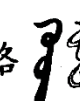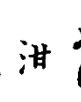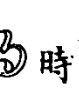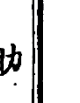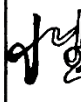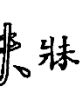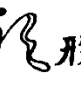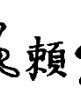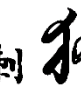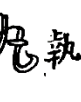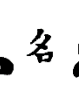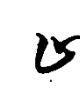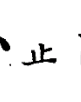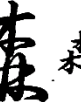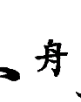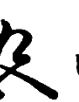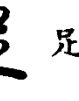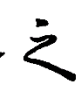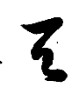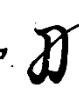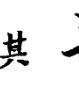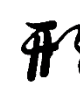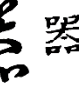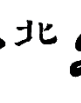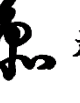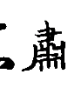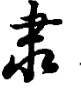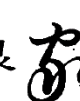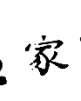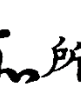
Appendix 1

Table illustrating the classification of the second part.

V.	⊖	尤	尤	就	就	廿	廿	其	其	甘	甘	夢	帶	蕭	肅	肅
VI.	⊝	庰	寂	宁	宇	宛	窓	寫	富	尖	火	寶	聞	骨	骨	
	肖	筒	受	受	罟	器	学	學								
1.	○	尐	少	出	出	屵	山	屰	山	外	外	尨	尢	岬	岬	
	路	路	聲	聲	楚	楚										
2.	ℰ	烟	期	皆	皆	日	日	卯	卯	釣	釣	勺	句	晨	晨	
3.	ℚ	文	文	夂	多	奎	奎	田	田	坂	後	後	後	学	學	
	予	千	劃	劇	メ	乂	夕	夕	而	耳						
4.	ℰ	妙	女	哥	哥	事	事	市	市	師	師	初	初	惠	惠	
5.	ℚ	个	个	肝	肝	水	水	步	步	牛	牛	辨	辨	牙	牙	
	弟	第	宅	宅	才	才	戶	尸								
6.	ℚ	竹	竹	手	手	万	万	方	方	牙	牙	多	多	飢	飢	

	訪	海	路		黙	鉗											
7.	○	洱	泔		斷	時		胡		類	好		助				
	性	忙	妹	形		形		頼	刺	執							
8.	○	則	鷄	顚	即												
9.	○	失	久	長	長	六	名	和									
	向	向	向	止	止	固	宗	靜	尔								
	木	森	舟	焉	牛	表	色	長									
10.	○	近	生	足	之	自	尢	元									
	今	天	天	口	那	窄	即	籠									
	作	幸	餘	其	其	形	形	著									
11.	○	急	石	器	北	系	肅	肅									
	泉	泉	泉	家	家	所											

Examples of the most noticeable alterations of beginning and final strokes.

Appendix 2

124

Tableau N° 1

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
1	口 只 呈 莫 莫	1 - 18	3136
2	吳 鱼	19 - 22	S. 61 . S.180
3	四 旪 日 且 昌 是	23 - 63	
4	四 囬 四 罡	64 - 76	
5	囲 囘 罜	77 - 90	
6	遇 過 退	91 - 93	
7	毋 母	94 - 95	
8	冏 冏 囸 用 思	96 - 145	
9	最 見 具 丹 臣	146 - 152	
10	门 门 向 闲 閤	153 - 166	4614
11	累 羅	167 - 170	
12	旦 暑	171 - 172	
13	巨 長 昆 垦	173 - 178	
14	黑 里 墨	179 - 181	S. 34
15	九 凡 風 咎 空	182 - 200	
16	夕 冂 月	201 - 205	
17	丁 乃 扔 日 弔 乃 字 東 及 頁 良 两 帅	206 - 225	S.48.S.148. S.176
18	刃 刀 尺 屈 艮 尹 艮 良 丑 丑 罗 思 墨	226 - 247	S. 34.S.37.
19	局 屡 展 眉	248 - 256	

Tableau N° 2

Remarques. Dans les premières séries du tableau N°2, le trait horizontal se continue par un trait, crochet ou courbure vers la gauche ; à partir de la 37° série, le 2° trait (ou partie infléchie du 1ᵉʳ) est vertical ; à partir de la 43° série, le trait horizontal est isolé des autres traits. Le trait horizontal résulte souvent d'une modification du point (dans les séries 25, 43 et suivantes, en particulier) ou de la réunion de deux accents par un trait de liaison (séries 28 et 33, par exemple) ; on pourra donc, en cas d'insuccès par l'emploi du tableau N°2, se reporter aux tableaux N°ˢ 4 et 8.

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Séries	Exemples de formes cursives	Limites des séries	Indications diverses
20	厭歴厠	257-262	
21	又兀远禾原丙逝万灰琴旂桌受肖老	263-340	
22	石延石爱逼通丙再雨西面百互函画	341-383	S.32
23	雪電零面壺雷寄	384-416	S.38
24	禾壬瓦岳雲丞昬丙甸	417-430	
25	力才	431-432	S.45
26	反查	433-439	
27	毛電磊秦羕孝聾	440-466	
28	了子弓马夃甬弱乑亟丙	467-529	
29	丙兩曼垩勾兆壺亮宇亜亟夃骨変泵玉	530-600	S.31. S.24
30	孛逗変謎	601-609	
31	平乑乑乑雱	610-625	S.29. S.24. S.40
32	第亜两乑子乑甬再囟義	626-653	S.22
33	口三字互互牙	654-696	S.35. S.32
34	乑果電	697-701	S.14. S.18
35	つマ弓马乙亖	702-713	S.32. S.33
36	卪刁叒弓牙垔第狗	714-762	
37	弱帚叒习牙乙垔乚乚下贵丁乒聖互亭垔乐	763-810	
38	雨 兩雲霣受壼雪電更	811-848	S.23
39	民長印屈匹豆亟迤匝	849-863	
40	弟牙匹	864-866	S.31
41	乙延瓩兎龟	867-880	
42	悪霝零琴	881-887	
43	一乁咼の所磊貫	888-903	
44	二云面至亭変	904-912	
45	下承牙	913-915	S.25
46	衣稠盾元豸吾	916-927	
47	亖亭廥三棄	928-932	

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Tableau N° 3

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
48	力 骨 自 息 進 八 九 扨 吧	933-973	S. 85. S. 17
49	兜 兜 白 的 迫 自 四 魚	974-989	
50	由 中 曳 冊 曲 也	990-1008	
51	孖 翁 瓦 斤 巨 旬 適	1009-1036	2058 . T. 16 . S. 84
52	巾 聿 肖	1037-1054	
53	巾 巾 巾 巾 忠 次 煮	1055-1082	
54	尤 考 寄 岽 友 岙	1083-1114	S. 56
55	宍 寄 宅 宐	1115-1150	S. 56

Tableau N° 4

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
56	宜 宪 宝 束 变 孬	1151-1245	S. 55. 1664 . S. 57
57	亏 宝 亨 室 亯 府 寙	1246-1336	S. 56
58	宸 庒 庵	1337-1345	
59	旁 彁 瘞 庄 馟 宥 瘦	1346-1470	
60	こ ㇏ ㇒ ㇏ い ら て ふ る 色 鱼 変 寻 扇 复	1471-1528	

Tableau N° 5

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
61	㇐ ㇒ 卤 矣 言 宛	1529-1549	S. 2 . S. 180
62	高 禹 禹 萵	1550-1581	
63	左 叏 叏 束	1582-1609	
64	左 古 古 㞢 㞢 七 壴 㝨	1610-1679	

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
65		1680-1711	
66		1712-1753	S.70 . 1823
67		1754-1770	S.68 . S.69
68		1771-1785	S.67 . S.69
69		1786-1825	S.67 . S.68
70		1826-1840	S.66 . S.72
71		1841-1846	
72		1847-1852	
73		1853-1862	S.188
74		1863-1878	
75		1879-1884	
76		1885-1898	

Tableau N° 6

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
77		1899-1904	
78		1905-1938	
79		1939-1941	
80		1942-1946	
81		1947-1952	
82		1953-1956	
83		1957-2005	
84		2006-2058	S.51
85		2059-2074	
86		2075-2103	
87		2104-2289	
88		2290-2313	
89		2314-2375	
90		2376-2384	

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Tableau N° 7

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
91		2385-2407	S. 71
92		2408-2417	
93		2418-2419	
94		2420-2434	
95		2435-2436	
96		2437-2470	S. 71
97		2471-2479	
98		2480-2483	
99		2484-2489	S. 177. S. 233
100		2490-2495	S. 71

Tableau N° 8

Remarques. La série 103 diffère des suivantes en ce que les deux accents ne sont pas immédiatement suivis d'un trait horizontal. Dans la série 107, les caractères sont divisés en deux parties distinctes au-dessous du trait horizontal. Dans les séries 104, 105, 106, qui auraient pu ne constituer qu'une seule série très nombreuse, le classement a été fait en tenant compte, par exception, des finales comme des débuts de caractères.

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
101		2496-2512	
102		2513-2539	
103		2540-2574	
104		2575-2712	
105		2713-2802	
106		2803-2878	
107		2879-2935	

Tableau N°9

Remarques. Dans les séries 110 et 111 le trait vertical oblique souvent à droite, ce qui expose à entrer dans le tableau N°7, et les deux points peuvent être réunis de façon à simuler un trait horizontal, ce qui expose à entrer dans le tableau N°5.

Dans la série 110, le tracé de chaque caractère débute par le trait vertical pour continuer par le point de gauche, de sorte que le trait vertical n'a pas, comme dans la série 111, de continuation dans la partie inférieure du caractère.

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
108		2936 – 3042	
109		3043 – 3088	
110		3089 – 3153	S. 97
111		3154 – 3195	

Tableau N°10

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
112		3196 – 3220	
113		3221 – 3267	
114		3268 – 3276	S. 178 . S. 179
115		3277 – 3294	S. 175 . S. 218

Tableau N°11

Remarques. Les formes cursives admises dans ce tableau ne sont pas toujours nettement d'accord avec la définition des caractéristiques, de sorte que l'on pourrait parfois être tenté de les chercher dans d'autres tableaux, le 13°, par exemple.

Ces anomalies se rencontrent principalement dans la série 117 et nous les avons tolérées en raison de ce que la physionomie générale des formes qui composent cette série est assez remarquable pour qu'elle soit immédiatement reconnue par ceux qui l'auront déjà rencontrée une première fois; presque toutes les formes de la série ont comme équivalents corrects des caractères dont le radical est 口, ce qui nous a décidé à placer cette série dans le tableau N°11.

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Séries	Exemples de formes cursives	Limites des séries	Indications diverses
116	戠 豹 躍	3295-3307	
117	咀 唑 哭 唈 噴 嗛 吶	3308-3435	
118	眊 監 盼 鹭 哓	3436-3513	3519
119	蜀 明 睡 眪 眅 眠 睡	3514-3547	3490. S.120
120	賒 賸 影 刿 賊 賊 題 豞 骷 虬	3548-3569	
121	川易 町 彤 唧 曘 瞳 睡 瞪 睡 鴨	3570-3587	
122	刿 罰	3588-3589	
123	册刀	3590	
124	刀古 帥 膭 胃 翠 脾	3591-3604	
125	陟 阷 印 邌	3605-3615	S.147
126	阪 飽	3616-3620	
127	跟 約	3621-3626	
128	叱 虺 颱 颱	3627-3631	
129	那 舭 翠	3632-3635	
130	肘 肸 腹	3636-3642	
131	慇 刷 殿	3643-3645	

Tableau N° 12

Nota. le classement est analogue à celui du tableau N°2 dont on pourra lire les notes.

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
132	不甲 礴 砺 殍 硬 鹍 碼 瞪 墅 遮 挓	3646-3705	
133	处 敨 翻 雉 敔 那	3706-3719	
134	丽 硪 醋 卿 醒 酼	3720-3731	
135	丕 舺 那 聖	3732-3737	
136	劏	3738	
137	屯 敔 鼛 夆 氋	3739-3745	
138	彊 彊 項 弪 引 弪 叚 引	3746-3759	

139	孩 程 孤 社 孫 弓	3760-3910	
140	毵 豸 蚼 甜 融 豿	3911-3917	
141	痫 弱 龍 駝	3918-3921	
142	戰 形 乘 翹 彰 彩 軺	3922-3931	
143	破 形 發 刊 形 軺 孤 雅 補 孫 詩 紀	3932-3968	S.153. S.154
144	剝 形 預 形 欼 形 叔 騹 弱 翺 聆	3969-3993	4057
145	骷 葃	3994-3996	
146	弓 璡 程 剝 鄧 形 點	3997-4014	S.150
147	到 到 弱 孔 覵 殇 陌 路 殇 改 己	4015-4050	S.125
148	項 攺 項 巧 墷 築 ヱ 瓺 昰	4051-4156	S.94. S.165. S.166. S.247
149	抒 霎 暗 塑 毅 抒 聲 趄 尅	4157-4175	
150	瑪 碧 取 珠	4176-4212	S.146
151	取 肥 駆	4213-4216	
152	駝 驅	4217-4220	
153	语 诵 诚 德	4221-4236	S.143. S.167. S.172. S.174. S.247
154	神 社 移 祾	4237-4246	S.143. S.168. S.169. S.170
155	移 祛 稽 稀 鷺 鸞 孔 便 醒 甄 肦 印	4247-4271	S.144. T.14

Tableau №13

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
156	嗥 峆 彸 婉 帥 候	4272-4278	S.117. S.124. S.247
157	吋 肦 喤 皚 皈 肦 鮈	4279-4290	S.118. S.119. S.120. S.121
158	舩 舩 鮮 鲜	4291-4297	S.210. S.211. S.212. S.213. S.214
159	舩 舩	4298-4299	
160	鳰	4300	
161	舩 賀 架	4301-4307	
162	帽 帖 幛 悂 帔	4308-4340	S.241
163	忚 婞 娷 拝	4341-4352	S.242
164	輝 娲 舩 頴 書	4353-4358	S.243

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Tableau N° 14

Remarques. Dans les séries 165 et 166 la caractéristique est une succession verticale de points plus ou moins reliés entre eux (deux pour la série 166). Dans la série 175, on rencontre une disposition spéciale des points à l'angle supérieur gauche de chaque caractère cursif. Dans les séries 176, 177 et 178, la caractéristique contient un point placé à gauche d'un trait vertical ou oblique.

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
165	泥 得 泅 汩 沔 江 湦 潰 汐 納 洝諫	4666 - 4959	S.166. S.148. S.247
166	况 望 涤	4960 - 4982	S.165. S.148. S.247
167	许 诗 译 红 裡 词	4983 - 5068	S.153. S.143. S.174
168	初 経 稝 狗 狛	5069 - 5080	S.154
169	祝 视 襟 衫	5081 - 5110	S.154. S.143
170	初 祁 祁 辞 初	5111 - 5120	S.143
171	記 緩 彩 彩 敘	5121 - 5148	S.144. S.215
172	緩 䉤 猪 強 敨 貓 耪	5149 - 5158	
173	視 鶸 就 新 新 辮 剕	5159 - 5168	
174	龍 敥 劾 妙 親 競 韶 䩨 皷 衫 飠 彭 細 軋 詞	5169 - 5224	
175	斗 萱 兜 羑	5225 - 5231	S.115. S.218
176	技 沬 捣 陌 埽 埽 陰 添 稀	5232 - 5248	S.200
177	揮 姑 牧 將	5249 - 5258	S.233
178	恨 恨 艺 紫	5259 - 5273	S.179. S.114. S.222

Tableau N° 15

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
179	忧 抴 捝 契 屵 芺 埁 㚤	5274 - 5295	S.178. S.114. S.222
180	山 望 犇 敦 智 頍 箂	5296 - 5312	S.2. S.61
181	埕 坦 堌 搭 德 莛 㻳 塔 宅	5313 - 5418	S.222. S.223. S.224. S.241

Séries	Formes	Limites
182	〔cursive forms〕	5419 – 5446
183	〔cursive forms〕	5447 – 5466
184	〔cursive forms〕	5467 – 5478
185	〔cursive forms〕	5479 – 5485
186	〔cursive forms〕	5486 – 5498
187	〔cursive forms〕	5499 – 5510
188	〔cursive forms〕	5511 – 5978
189	〔cursive forms〕	5979 – 5989
190	〔cursive forms〕	5990 – 6012
191	〔cursive forms〕	6013 – 6027
192	〔cursive forms〕	6028 – 6041
193	〔cursive forms〕	6042 – 6044
194	〔cursive forms〕	6045 – 6047
195	〔cursive forms〕	6048 – 6050
196	〔cursive forms〕	6051 – 6057
197	〔cursive forms〕	6058 – 6059

Tableau N° 16

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
198	〔cursive forms〕	6060 – 6297	
199	〔cursive forms〕	6298 – 6380	
200	〔cursive forms〕	6381 – 6454	S.139. S.51. S.176.
201	〔cursive forms〕	6455 – 6531	
202	〔cursive forms〕	6532 – 6566	
203	〔cursive forms〕	6567 – 6571	
204	〔cursive forms〕	6572 – 6586	
205	〔cursive forms〕	6587 – 6597	
206	〔cursive form〕	6598	
207	〔cursive forms〕	6599 – 6615	

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208	孙 兔 雑 雉 乳 孰 乳 哉 雞	6616 - 6628	
209	列	6629	
210	氊 氊 殳 毬 牧	6630 - 6641	
211	睡 留 純 话 烙 饯	6642 - 6660	S.158
212	飯 饭 钯 钯 饱 饥 铋 饰 将	6661 - 6671	
213	執 勢 殄 豺	6672 - 6678	
214	撣 豺 豺 豸 豹 豺 豺 豺 斃 豺 魁	6679 - 6701	
215	乿 轳 豺 豺 豺 犁 發 鹄	6702 - 6717	S.171. S.144. S.174
216	铜 铦 钯 钆 知 钿 鍵 鑌 铥 铑 鋱 錤	6718 - 6772	
217	镁 鯀 豺	6773 - 6775	
218	怠 髪 触 筀 筀	6776 - 6780	S.175. S.115
219	筀 抶 虯 虯 舳 绶 舳 料 料 豺	6781 - 6793	
220	竹 犭 锏 鸽 鹄 知 豺 鉝 鉄 雜 豺 钆 鄀	6794 - 6815	
221	旦 屾	6816 - 6817	
222	笙 坭 恒 坭 憬 愽 茜	6818 - 6891	S.178. S.179. S.241
223	坦 煳 煳 煳 牡	6892 - 6927	S.241
224	萳 篭	6928 - 6930	
225	練 煙 墿	6931 - 6954	S.242
226	牧 犁	6955 - 6956	
227	牲 牧 牲 物	6957 - 6974	
228	兌 祝 精 緊	6975 - 6984	S.243
229	牪 锡 豺 豺	6985 - 6989	
230	煙 煉 均 燈	6990 - 6993	S.225. S.242
231	豺 翱	6994 - 6995	

Tableau N° 17

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
232	簪 籾 郬	6996 - 6998	
233	好 姉 絮 妏 妏 絮	6999 - 7061	S.177. S.48. S.99

Tableau N° 18

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
234	鈴 鉰 釰 锁 钞	7062 - 7066	
235	觐 勖 斟	7067 - 7069	
236	孫 孖 矜 孙	7070 - 7083	S.139.S.200
237	矜 矜	7084 - 7086	
238	鸡 矜 敫 澉 敖 槃 矜 矜 難 難 顈 靯	7087 - 7117	S.117
239	敨 敫 鼙 敫 鞽 矜 鞋 散	7118 - 7130	S.117

Tableau N° 19

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
240	歡 矜 劉	7131 - 7133	
241	切 矜 矜 矜 保	7134 - 7162	S.222.S.223.S.178.S.179
242	煌 忆 矜 矯 頍	7163 - 7196	S.225.S.230
243	粗 粗 糍 糈 矜 矜 料	7197 - 7220	S.228.S.164
244	翔 矜 矜 輝 頰 矜 數	7221 - 7238	

Tableau N° 20

Séries	Exemples de formes cursives	Limites des séries	Indications diverses
245	戴 蒲 鵲	7239 - 7241	
246	岠 嶠 時 嵺 嵺	7242 - 7256	
247	旧 阻 阻 矜 矜 筆 矜 矜 廄 矜 嗅 興	4359 - 4665	S.148.S.165.S.166.S.156
248	矜 矜 矜	7257 - 7259	

Abréviations :

S. = série   T. = tableau N°