Linking Chan/Seon/Zen Figures and Their Texts: Problems and Developments in the Construction of a Relational Database

Michel Mohr
Hanazono University, Japan

This paper discusses certain issues related to the construction of a database on Buddhist historical figures and their written legacy. I deliberately take the researcher's point of view, reviewing concrete examples rather than elaborating on technical issues. One part of the IRIZ "Zen Knowledge Base" project initiated by Urs App is to establish a unique ID number for each Chan/Seon/Zen figure, thereby enabling each author to be linked with the extant documents. The primary stages of this project having now been completed, I here present some initial results and working hypotheses, and reflect on wider issues related to the digitalization of Buddhist research materials.

1.0 Chan/Seon/Zen Figures

1.1 Case Study 1: The Lineage Charts of the *Zengaku daijiten*

Everyone involved in Buddhist research is familiar with the *Zengaku daijiten* ["Large Dictionary of Zen Studies"] compiled at Komazawa University. In many respects this dictionary is far from satisfactory, but it remains a major reference work. Among the materials included is a sequence of charts showing the main lineages of the Chan, Seon, and Zen traditions (*Zenshû hôkeifu*). Although these charts are based in part on legend rather than history, they nevertheless situate many of the major figures who contributed to the development of the Zen schools in China, Korea, and Japan. Another distinctive feature is that each page of these charts carries a line number to facilitate the location of each figure listed in the index.

The presentation of these lineage charts actually suggests a matrix, where each particular location can be mathematically defined by its

horizontal and vertical coordinates. This gave Urs App and Christian Wittern the idea of adding a number indicating the column. The digits for the page, line, and column would thus represent an ID number pointing to each Chan/Seon/Zen figure. The first section of these charts was included in *ZenBase CD 1*. For example, the Sixth Patriarch Caoxi Huineng could be identified with the sequence of characters "ZGD-C-04-01-01" where "ZGD" stands for *Zengaku daijiten* and "C" for China, "04" for page 4, "01" for line 1, and "01" for column 1.

If we think in terms of a relational database, one of the first requirements for linking different files (known as "tables" in the jargon of relational databases) is that each piece of information be identified by a unique set of characters (called a "key" or "primary key" in the jargon of relational databases). This unique set of characters serves as a common denominator between different types of information. A concrete example would be a database of proper names linked to another database of bibliographic references. For linking them, a field (or "column") shared by both databases is required, and it must be unique—that is, there should be only one record (or "row") containing this information. This functions as the "key" for establishing the relation between the different databases. In the case of the *Zengaku daijiten* charts, the attribution of a unique ID number to each figure obviously comes very close to meeting this requirement. There is only one minor obstacle: some figures appear more than once on the charts. This obstacle can easily be overcome by deciding in each case which occurrence will serve as the "main ID" (*shu aidi* ID) and which one will serve as the "secondary ID" (*niji aidi* ID), the latest occurrence usually being chosen as the main one. This choice is arbitrary, but please remember that the objective here is not historical accuracy but the establishment of a reference number that can function as a basis for relational purposes.

I would like to point out here that the requirement for a unique "key" exemplifies the gap that remains between information science and the humanities. Reality is always more complex than the schemes that attempt to describe it. For example, many texts include several layers of authorship, and it would be inaccurate to attribute them to a single author. The *Biyanlu* is a notorious illustration of such multiple

authorship, with a set of cases collected by Xuedou Zhongxian (980-1052) followed by capping phrases added by his disciple Yuanwu Keqin (1063-1135). This issue will have to be addressed when dealing more specifically with bibliographic data.

The first results achieved by this method include a set of Zen-related names from China, Korea, and Japan, with each name having a specific ID number. This first group of raw data will help clarify the possibilities and limitations involved in building a relational database. One of our first conclusions drawn from use of these data is that the key should be constructed on the basis of information related to the author, because the human factor always comes first. This excludes, however, the category of anonymous works. The following scheme might help in understanding this basic structure.

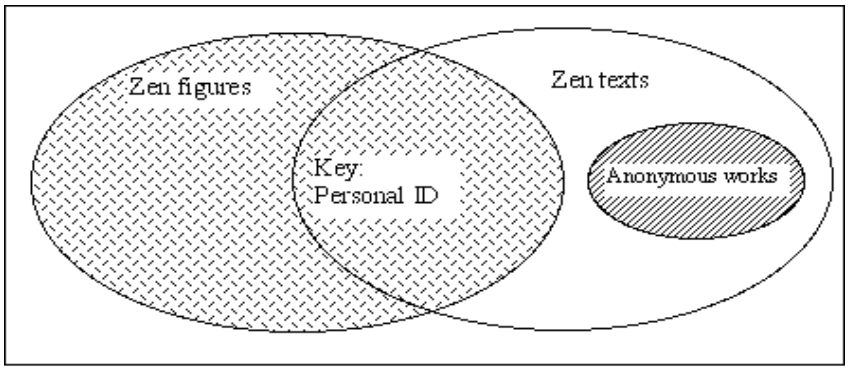

Figure 1: The key allowing to link Zen figures and their texts

1.2 Case Study 2: Biographies in the *Kinsei zenrin sôbôden*

Most Zen researchers are familiar with the *Kinsei zenrin sôbôden* (Biographies of Tokugawa period Zen monks), which remains a major resource in the study of Tokugawa and Meiji Zen figures. Compiled by Dokuon Jôshu (Ogino, 1819–1895), who recognized the need for material on masters coming after the period covered in the *Enpô dentôroku* (the previous comprehensive biography, published in 1706), the *Kinsei zenrin sôbôden* is readily available in the indexed facsimile

edition issued by Shibunkaku (Kyoto, 1973).

The original edition, printed in 1890, includes 119 main figures. In 1938 Gyokugen Buntei (OBATA 1870–1945) wrote a sequel, the *Zoku kinsei zenrin sôbôden* (Sequel to the *Kinsei zenrin sôbôden*), which includes 417 figures. This work too is included in the facsimile edition mentioned above.

Producing an electronic version of this text presented several difficulties, one of them being its frequent use of nonstandard forms of Chinese characters (*itaiji*). Using this electronic text, I began incorporating data into a database of proper names, aiming for the same results as with the *Zengaku daijiten* lineage charts.

However, the linear character of the biographies listed in the *Kinsei zenrin sôbôden* made it much more complicated to produce a unique ID number. This led to two decisions: 1) when a figure appears in the *Zengaku daijiten* lineage charts, this ID number takes precedence; 2) the attribution of a new ID number to Zen-related figures are to follow a systematic procedure beginning with the *Zengaku daijiten* lineage charts. ID numbers for figures not included in those charts are constructed on the basis of the page numbers of a biographical source, if possible the earliest.

Let us look at one example, the biography of Kansô Zentei (1624–1680). Kansô Zentei appears in *Kinsei zenrin sôbôden* vol. 2, pages 10–12, but is missing from the *Zengaku daijiten* lineage charts. We can thus attribute the ID number “KZS-2-010-012” to Kansô, with “KZS” indicating the *Kinsei zenrin sôbôden*, “2” the volume number, and “010-012” the page numbers.

Once this ID number has been established, it makes it possible to automatically produce HTML filenames or HTML links. A few examples are posted on our institute’s Website (http://www.iijnet.or.jp/iriz/), in the Japanese section.

1.3 Lunar Calendar and Solar Calendar: Date Calculation Issues

When dealing with the *Kinsei zenrin sôbôden* or other traditional Chinese, Korean, or Japanese sources, the dates of birth and death are often difficult to calculate. First, most dates are given according to imperial era names, which are based on the lunar calendar. In the case

of Japan, this calendar remained in use until 1872 (Meiji 5), when the 3rd day of the 12th month was declared to be 1 January of Meiji 6 (1873)[1].

Until recently, accurate conversion between the two calendars required careful calculations based on the *Japanese Chronological Tables*, but many scholars simply transposed the traditional dates into the Gregorian calendar with no adjustments whatsoever. This is why so many inaccuracies exist in Japanese reference works, beginning with the *Zengaku daijiten*. Let us take the well-known example of Hakuin Ekaku. Hakuin was born on the second year of the Jôkyô era, twelfth month, twenty-fifth day. Generally speaking the year Jôkyô 2 corresponds to 1685, but Hakuin's birth date is actually 19 January 1686, owing to the gap between the lunar and solar calendars. The situation is the same with the year of his death, which occurred on the eleventh day of the twelfth month of Meiwa 5. This corresponds to 18 January 1769 (Katô 1985: pp. 39 and 248).

Further problems can emerge when giving someone's age during any particular year. The ages given in Hakuin's biography, for example, follow the traditional system, in which a person is considered to be one year of age in the year of his or her birth. Thus we have a situation in which Hakuin is said to have been one year old in Jôkyô 2; if one automatically assumes Jôkyô 2 to correspond to 1685 in the Western solar calendar system, one can easily conclude that he was age one at a time when actually he had yet to be born. In 1695 his biography gives his age as eleven years old, although, again, by the solar calendar he would have been at most nine years old.

At Hanazono University, with which I am presently affiliated, I have tried to point out this lack of accuracy, but without success. To make the point clearer, I usually mention the case of Johann Sebastian Bach, whose year of birth, 1685, would generally be given as Jôkyô 2 in the traditional Japanese system. Who, then, was born first, Bach or Hakuin? Even without knowing the birthday of Bach, one can assert that he was

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[1] Tsuchihashi, Yachita. 1952. *Japanese Chronological Tables: From 601 to 1872 A.D., Monumenta Nipponica Monographs No. 11*. Tokyo: Sophia University Press, p. 4.

born prior to Hakuin if one is aware that, due to the discrepancies between the two calendars, Hakuin's birth actually occurred only in 1686.

This story is just one illustration of the fact that care must be taken even with details. When it comes to calculating traditional dates, there are two points to remember. First, one should be careful when dates of birth or death occur in the eleventh or twelfth month of the lunar year, because there is a strong probability that they occur in the following year according to the solar calendar. Second, when only the person's age and year of death are known, there are often two possibilities for the year of birth. Since, as explained above, a person's year of age is calculated in accordance with the traditional system that gives one year of age at the time of birth, there can be two possible birth years depending upon which month of the lunar year that person's birth took place. There is no way to avoid this problem if the month of birth is unknown.

Now, fortunately, there are convenient tools that spare the researcher the trouble of manually calculating the solar equivalents of traditional dates. The Japanese URL http://www.asahi-net.or.jp/~dd6t-sg/ provides an excellent DOS utility called WHEN.EXE that converts traditional dates into other systems. The conversion can also be done online.

1.4 Critical Assessment of Traditional Accounts

As in most fields that depend on historical sources, Buddhist studies is always confronted with the need to evaluate the reliability of written documents. In addition to dating sources, the researcher must always question the explicit or implicit agendas of those who composed these sources. This need is especially great in the case of biographies.

For example, the *Kinsei zenrin sôbôden* reflects, first of all, Dokuon Jôshu's and Gyokugen Buntei's criteria for choosing which figures should be included; each individual biography, furthermore, reveals which aspects of that person's life the compilers considered instructive for their readers. Such biographies therefore necessarily omit less prominent figures and leave out aspects of the biographies that appeared unimportant to the author. Although we cannot avoid using these accounts (often they are the only remaining documents), we

should treat them essentially as hagiographies and not take their contents at face value. This methodological remark is aimed only at underlining the fact that the digitalization of Buddhist material implies a certain amount of selection and evaluation, and cannot be considered a value-free mechanical task to be delegated to computer specialists.

2.0 CHAN/SEON/ZEN TEXTS

2.1 The Question of Sorting Sources

The first questions in sorting sources are "What is a Chan/Seon/Zen text?" and "Does this particular category of a Chan text have any relevance?"

The delimitation of Chan/Seon/Zen texts is less straightforward than it might seem. One simplistic way to define a Chan text would be to say that, since the prototype of a "school" centered on Chan practice began to emerge during the Tang dynasty, texts produced by representatives of this school are "Chan texts." However, a serious examination of which texts were actually *used* by representatives of the Chan tradition shows that much importance was given to scriptures usually ascribed to so-called "traditional Buddhism." All sutras may to a certain extent fit into this category, not to speak of non-Buddhist classics.

It seems therefore more productive to avoid establishing a rigid sectarian label of "Chan/Seon/Zen text." One pragmatic approach would be to say that every document used by individuals who claim for themselves the designation "Chan monk," "Chan nun," or "Chan lay practitioner" is a Chan/Seon/Zen text.

If we accept this wide and unrestricted way of handling Chan texts, is it still relevant to make a distinction between Chan texts and Buddhist texts?

Although there are certain distinctively Chan genres of literature, such as "recorded sayings" (*yulu*) and "lamp histories" (*dengshi*), our broad definition clearly extends beyond these. If the premise is that what makes a category meaningful is its distinctiveness, then the question of whether a particular source material is a "Chan text" should perhaps be considered secondary. It might even be more productive to simply consider it as a "document," without precluding of its origins or

religious setting.

An alternative way of considering the issue is to regard all sectarian categories as fundamentally delusory, and as tending to prevent our correct understanding of specific phases in the "history of ideas." The discipline of religious studies is nevertheless required to respect claims made by the individuals who are the object of research; this means that self-proclaimed affiliations with such and such a branch of the Chan tradition can also be taken as valid information, as an indication that this person claims for him- or herself a link with a type of Buddhism that puts emphasis on meditation.

We are now increasingly aware that there is no homogeneous "Chan tradition," and that all serious research must take into account the complex maze of reciprocal influences between different schools of meditation such as Tiantai. The range of sources can therefore be considered extendable depending on the focus of the researcher and upon his or her willingness to cope with a variety of "external documents."

Let me give just one example from my own experience in studying Tôrei Enji (1721-1792), an important disciple of Hakuin affiliated with the Japanese Rinzai tradition. Tôrei's broad erudition is conspicuous in all of his writings, and he often quotes from what are generally regarded as Shinto sources. For instance, he frequently refers to the apocryphal *Sendai kuji hongi* (another name for the *Taiseikyô*). In his *Shûmon mujintôron*, Tôrei also quotes from the *Toyuke kôtaijin gochinza hongi* and the *Jingû gokuhi hôkihongi*, two texts belonging to the Five Scriptures of Ise (*Shintô gobusho*). Tôrei's familiarity with Shinto scriptures is, of course, rather exceptional among Zen people. Nevertheless, if our methodological rules are to be considered valid they must also apply to unusual cases. Here I would say that the study of Shinto scriptures is so important for the understanding of Tôrei's thought that these documents can, in a loose sense, be considered "Zen texts," not because of their content but because a prominent Zen figure like Tôrei employed them in his writings.

We are thus left with a very broad definition of "Chan/Seon/Zen texts." Now the problem is how to sort these texts in a way that would make them easily retrievable for researchers.

Widely used collections, such as the *Taishô shinshû daizôkyô* or the *Manji zokuzôkyô*, provide a simple means to classify texts according to the collections' volume numbers. The case of the *Manji zokuzôkyô* is a bit more complex due to its numerous printings, but the database recently published on our institute's website (http://www.iijnet.or.jp/iriz/) should help resolve this difficulty. Later I will give some practical examples using these collections.

The purely bibliographical aspect of these different texts will ultimately have to be resolved by librarians, but here I would like to share with you a simple "tip" on how to search texts in chronological order. The only requirement is to include date information in the name of the file to be searched. Certain texts cannot be accurately dated, but the completion dates of the major "lamp histories" are known. I would therefore have a folder including these texts, with filenames looking as follows:

missing 0790 Lidaifabaoji.TXT

0952 Zutangji.TXT

0961 Zongjinglu.TXT

1004 Jingde chuangdenglu.TXT

1036 Tiansheng guangdenglu.TXT

missing 1101 Jianzhong jingguo xudenglu

1107 Linjianlu.TXT

missing 1135 Zongmen tongyaoji

missing 1204 Jiatai pudenglu

and so on...

The dates above rely on Yanagida Seizan's "Zenseki kaidai," with "missing" indicating that there is no electronic version yet and that the text should be searched manually. The advantage is that we have thus a list that will report all occurrences of a particular expression in chronological order. This is much better than any dictionary, and even enables the linguist to trace the evolution of a particular expression. I use Matt Brunk's SpeedSearch (http://www.kagi.com/brunk) on a Macintosh, but the same thing can be done with Fgrep and a DOS

batchfile (with shorter filenames) or with an editor including Grep search options, such as Hidemaru (http://hidemaru.xaxon.co.jp/).

2.2 Basic Requirements for Philological Searches

This leads me to make a brief digression on a question no doubt familiar to everyone at this conference: What makes data truly useful for researchers? We now have a vast array of digitalized Chinese, Korean and Japanese texts, which have helped make textual searches completely different from what they were even just ten years ago. However, many of these digital texts are still far from meeting the basic conditions for use as research tools. One difficulty is in finding a "middle way" between "ready-made" applications that depend on one system and one specific type of software, and raw data that users with insufficient computer literacy have difficulty utilizing.

Among the data proliferating on the Web, many are not accurately searchable simply because the inputters are unaware that a line-feed character prevents accurate searches for Chinese compounds. Even in the case of good quality data, such as the electronic texts recently included in Tendai CD2, one finds that the files have no headers and that the characters missing in the JIS codes are uniformly replaced by a "black star" (*kuroboshi*) character. The fact that these problems, though identified many years ago, remain unaddressed leads me to believe that the EBTI should establish guidelines and adopt a more active role in promoting them.

It should also be stressed again that data depending on one platform (usually Windows) or one type of environment or application are unacceptable. Such data are not only unavailable to users of less-common systems, but are also in a position of long-term survival risk, since operating systems and even character encodings change very quickly. In other words, the *durability* of such data is in question.

To be truly useful for researchers, data should therefore be retrievable on any machine or any OS, and searchable with any search utility. In the case of Chinese texts, each line of the text files should end with a punctuation sign. Information about the sources used, the stage of correction, and the people in charge of the editing work should be clearly listed in the headers of each file. This seems obvious, but is

apparently not so much to many researchers, since data released even by respected institutions fail to meet any of these requirements.

2.3 How to Identify a Single Figure Having Various Names

One of the difficulties faced by researchers who deal with Chan/Seon/Zen figures is the multiplicity of their names. Since the direct mention of a cleric's personal name was considered a lack of respect, it was already customary in China to use a place name or a temple name to indicate the identity of a monk or a nun.

For instance, in the case of Shishuang Chuyuan (986-1039), "Shishuang" indicates the temple where he resided as abbot, the Shishuangshan Chongsheng chanyuan in Hunan Prefecture, while "Chuyuan" is his ordination name (*hui*). His other surname was Ciming. Since he resided at a number of temples at different times in his career, he came to be know variously as Ciming Chanshi, Xinghua Ciming, Nanyuan Chuyuan, and Xinghua Chuyuan. Inasmuch as he is a well-known figure in Chan history, one of the simplest ways to identify him would be to assign him the ID number ZGD-C-06-05-01, derived from the *Zengaku daijiten* lineage charts.

In Japan and Korea the matter has become even more complicated because of the widespread use of *shitsugô*, that is, names deriving from the Zen interview rooms of the respective teachers. Even today many Zen practitioners refer to their teacher by his *shitsugô*.

If we then add pre-ordination family names and imperially bestowed honorific names (*shigô*), it is not uncommon for the same person to be referred by ten different names. The assigning of IDs to these figures therefore appears a priority, especially if we think in terms of establishing links between these figures and other elements of information, such as bibliographic data. Let us see how this could be done.

2.4 Case Study 1: The *Zenseki kaidai*

The *Zenseki kaidai*, a reference work by Yanagida Seizan (1976), remains a convenient introduction to 329 essential texts related to the Chan tradition. An early electronic version was included in the *ZenBase CD1* (App 1995), with a revised version in database format recently

added to the IRIZ website. Among the texts included, 110 have at least one author or compiler whose ID is included in the lineage charts of the *Zengaku daijiten* and has already been input. This provides the necessary key to establish a link between the texts and their authors, enabling a researcher to go back and forth between this bibliographical database and the lineage charts described above. If one author has several works in the *Zenseki kaidai,* all of these texts will be accessible from the lineage charts.

One important feature in this case is that the relation is bidirectional, but not equivalent. On the lineage-chart side we have both individuals with texts and individuals without texts, and on the *Zenseki kaidai* side we have texts with multiple authors as well as texts whose authors are unknown.

2.5 Case Study 2: The *Taishô shinshû daizôkyô*

The *Taishô shinshû daizôkyô* is probably the most commonly used reference work in Sino-Japanese Buddhist studies. Despite numerous defects in punctuation and other areas, its status of a standard edition makes it fit for the exchange of information between scholars. For example, even if there are better editions of a text, it often remains more convenient to identify it using the *Taishô shinshû daizôkyô* volume and page number, allowing other researchers to check the source.

The titles of the 3,118 texts included in this collection provide a good example of how it is possible to codify classical texts and to attribute them unique ID numbers. For example, the Chinese translation of the Lotus Sutra, usually identified as the *Miaofa lianhuajing* T. 9 No. 262, could be codified using the first letters of the title *Taishô shinshû daizôkyô* followed by the volume number and text number: TSD_09_0265. Since such arrays can be produced automatically, this system is quite convenient for naming HTML files or tagging.

2.6 Case Study 3: The Works of Tôrei Enji

Let us now examine a more complicated case. I have already mentioned Tôrei Enji above, in section 2.1. I am presently involved in the task of preparing the collected works of Tôrei for publication, in

electronic and/or printed form. Except for two publications of his included in the *Taishô shinshû daizôkyô* (T. 81 No. 2575 and No. 2576), most of his works remain in the form either of manuscripts or woodblock print documents. There was thus a need to codify his writings in a way that would make them easily identifiable even if unpublished.

Following the basic idea of categorizing bibliographic data according to author, I started with the simple hypothesis that even the most prolific author would hardly produce more than 899 works in a lifetime. I thus added 100 to the record number automatically produced when creating a new entry, so that the result is always a number of three digits between 101 and 999. For example, record #1 for Tôrei is his *Bumo onnanpôkyô chûge* [Annotated Commentary to *The Sutra on the Difficulty of Repaying One's Debt of Gratitude to One's Parents*], composed in 1770. Adding 100 to 1 gives the ID 101, which is appended to Tôrei's lineage-chart ID (ZGD-J-49-01-02). We thus obtain for this text the unique number ZGD-J-49-01-02/101, which codifies the meaning "Tôrei's text no. 1."

2.7 Creating the equivalent of an ISBN Number for Classics

The procedure followed for Tôrei's works can easily be extended to almost every writer of a Chan/Seon/Zen text, the only requirement being the assignment of an ID number. For example, the Korean monk Kihwa (or Hamho Tukt'ong, 1376–1433) is found in our database under the name Deuk-tong I-hwa, with the ID ZGD-K-23-04-20. His *Commentary on the Sutra of Perfect Enlightenment* could accordingly be identified as ZGD-K-23-04-20/101, and this number could in turn serve as basis for linking this text with Charles Muller's English translation (Muller 1999).

The advantages of assigning a unique ID number to important Chan/Seon/Zen texts are obvious, and can be compared to the usefulness of having an ISBN number for modern books. I believe that building such a databank of ISBN numbers for classics could be of tremendous value not only to scholars but to general readers as well. However, care should be taken to account for textual variants, which are often important for their bearing on the contents of the work. For

instance, the *Platform Sutra* should have at least half a dozen different numbers to reflect the variants. This means that the codification cannot be done mechanically—specialists on the scriptures must decide if different editions of a similar text should be handled under one label or should bear different identifications.

One alternative would be to leave space for subsets of particular IDs. The *Platform Sutra* is an especially intricate case, because its author(s) is/are difficult to ascertain, with most scholars now believing that it contains several layers with different authorship. Nevertheless, one could assign a number for the purpose of categorization, without any pretension to historical accuracy, that would identify the work as the first text under the ID of Caoxi Huineng. Thus we would have ZGD-C-04-01-01/101. Each variant would then be indicated with supplementary letters or numbers indicating its provenance. For example, we could choose ZGD-C-04-01-01/101/DHG1 to indicate the Dunhuang edition included in the *Taishô shinshû daizôkyô* (T. 48 No. 2007; Stein manuscript No. 5475). The final word on such matters should, of course, be given to librarians and archive specialists, such as the scholars involved in the Dunhuang project; my aim here is only to underline the utility of such encoding.

Of course, another matter to consider is the need for standardization. As with modern ISBN numbers, a single institution would need to centralize and standardize the information. Since this idea is presently limited to texts belonging to the cultural area influenced by the Chinese language, one institution in the CJK area could probably assume the task, but it would need considerable resources.

2.8 The Need to Account for Nontextual Sources

After putting so much emphasis on the need to differentiate between various texts, a remark on the limitations of textual sources appears necessary. Thanks in particular to the efforts of Bernard Faure (1991, 1993), the field of Buddhist studies is now more conversant with the one-sidedness of historical approaches, and is increasingly receptive to methodological alternatives. In addition to structuralist or hermeneutical approaches, the application of anthropological or sociological methods often helps to perceive this field from a larger

perspective. This is even more significant in the case of the different Chan/Seon/Zen traditions, with their strong oral tradition based upon use of the koans. Archeological sources or documents highlighted by art history frequently reveal information that is lacking from written accounts. There is no need to overstress this aspect here, but the work of Gregory Schopen (1997) is a telling example of how archaeology or epigraphy can help overcome preconceptions about Buddhist teachings and practice.

3.0 Linking Chan/Seon/Zen Figures and Their Texts

3.1 Simple Links and Their Limits

The above discussion on Chan/Seon/Zen figures and their texts suggests the complexity of the relationships involved. Disentangling this nexus of relationships to express the relevant data in mathematical terms necessarily involves simplification. The problem is to convey the necessity of distinguishing between precise biographical or bibliographical research and simplified reconstructions of reality that serve as tools.

Drawing sketches with arrows, writing manuscript annotations, or dog-earing books are common ways to note connections that occur in our brain and coincide, so to speak, with the exchanges of electric current between our synapses. Hyperlinks were devised to imitate this natural way of synthesizing distinct pieces of information, but they remain essentially uni- or bidirectional. If we were to represent what happens in our minds regarding, say, Hakuin's *Yasenkanna* [Idle Talks in a Night Boat][2], the associations might look like this:

[2] For those not familiar with this text, please see Mohr 1999 (pp. 310-11).

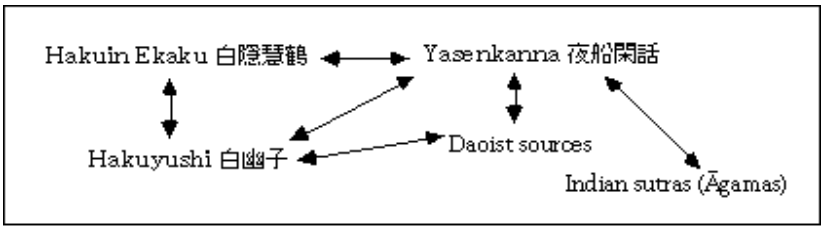

Figure 2: Illustration of mental associations

Each reader would, of course, have different associations depending on his or her background. The fact is, however, that even the relatively simple associations illustrated in the above figure would be extremely difficult to express either with hyperlinks or with the relational features of a database. The reasons are many, among them being the vagueness of "Daoist sources" or "Indian sutras." We are, in other words, in the realm of "fuzzy logic" here, but this is the way the human mind works.

The provisional conclusion that I draw from this is that the very attempt to codify every element and relation into a database is an illusion. The scope of a database *is* limited, and those limitations must be clearly expressed from the outset.

3.2 Intertextuality as a Parameter of Religious Practice

When studying Chan/Seon/Zen figures one soon notices strong relations between the texts and the meditation practice, especially in schools using koans. The recent book on the koan edited by Steven Heine and Dale S. Wright (2000) illustrates from various perspectives the cardinal importance of intertextuality. For instance, in the Japanese monastic context a practitioner who reaches an insight into a specific koan is asked to find a verse in the *Zenrinkushû* [Anthology from the Zen Forest] that relates to his or her understanding. This can be seen as a "literary exercise" or a "pedagogical device," but it also demonstrates that patterns of understanding follow certain tracks that are not purely accidental, and that can to a certain extent be mapped. Much about these patterns might be revealed by a systematic analysis of the metaphors contained in collections such as the *Zenrinkushû*. In this case too, proper digitalization of the text could provide a tool aiding in-depth research.

3.3 Translations: How to Codify the Quality Criterion

A few decades ago there were so few modern-language translations of Chan/Seon/Zen texts that researchers could easily keep track of the quality of those that existed. However, the recent proliferation of new translations has created a growing need for some means of evaluating the quality of the various renditions. The task of building a database that includes translations of Chan/Seon/Zen texts can thus be seen as involving three steps:

1) establishing an ID for the original text;
2) establishing a derived ID for the translation, including a code representing the language;
3) establishing criteria to assist readers in choosing the appropriate translation (the first obvious criterion being whether a translation is partial or comprehensive)[3].

The third step runs the risk of becoming quite subjective if it is limited to the kind of rating used for giving stars to hotels. Since the work of reading a translation and checking it against the original is equivalent to writing a book review, it might be best to establish links to the actual book reviews.

3.4 Classify or Not? Parallel Treatment of Analog and Digital Information

Researchers often spend far more time collecting and storing information than they do analyzing it and using it to formulate new hypotheses. In the humanities figures indicate that as much as eighty percent of our time is dedicated to mechanical tasks, among them being the classification of documents.

Noguchi Yukio argues that for the individual researcher classification is an endless and fruitless task (1993, 1995, 1999, 2000), and proposes that library-type classification by subject be discarded in favor of chronological ordering (that is, ordering on the basis of what document

[3] The first steps in the direction of listing translations of Chan texts have appeared in a rather unknown Chinese translation of Yanagida's "Zenseki kaidai" with additions (Yanagida 1995, 1996, and 1998).

has last been used). I will not go into the details of his method, which basically involves putting all material into A4 envelopes and placing the most recently used envelope at the end of the row, but I will say that having applied it to my own work for the past two years I am completely free of the "lost child syndrome" ("Now where did I put that piece of paper!").

Noguchi's ideas are largely inspired by discoveries related to the use of computers. He argues that although we have entered the age of digital information, our thinking is still largely conditioned by habits inherited from our long dependence on paper. We have been led by force of habit to believe that if information is not properly labeled or classified then it will be impossible to find when needed. Noguchi shows, however, that this is not necessarily the case

Nevertheless, when building a database there seems to be no way to avoid using fields, which amounts to classifying. Similarly, the entire process of tagging, be it in SGML or XML format, involves labeling items of knowledge, often for commercial purposes. The digitalization of data in itself does not necessitate classifying, but the use of database applications compels it to a certain extent. As soon as categories are used, even the most sophisticated ones, they necessarily reflect the limits of our vocabulary and conceptual horizon.

Studying the history of religions implies the willingness to take on the viewpoint of the object of study. When the objects of study are Chan/Seon/Zen figures, this may sometimes demand that we, like Zen monks, impose silence upon our discursive minds and employ our more wholistic abilities in order to grasp relationships which are difficult to codify. This should not be misconstrued as a negation of rational ways of thinking, but as an augmentation of them. In Buddhism, after all, the logic of equality precedes the logic of differentiation without invalidating it.

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