Death Consciousness in Germany, China and Japan by Association Method

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連想法による、ドイツ、中国、日本における死の意識

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Free association tests using the concept "death" were carried out at high schools and universities in 3 cultural areas. The results are: 1) Responses expressing feeling are less common in China. In the Asian cities feeling 'fear' ranks first among response words, as opposed to 'sorrow' in Germany. 2) Recalling words about ceremony is frequent in Germany, but not in Japan or China. 3) The cause of death, especially 'suicide', is frequent in Japan but less so in Germany. 4) Explanations about death are frequent in Germany, but less so in Japan. Cultural differences should be considered in death education.

Hypothesis

Thinking about death involves not only knowledge, but also feeling, memory and belief in total. Words expressing death are not only personal, but also collective in a culture. Defined conceptual relationships to explain the facts, poetic words to express feelings and inter-subjective understandings in a culture about death make up the total reflection about death in each person.

Talking about death in school consists of judgment, motivation and attitude, whereas in other subjects conceptual relations are dominant. Talking about death in ethics or moral education classes guides pupils and students in total reflection.

A free word association gathers total word responses, not only related to knowledge, but also feelings and cultural backgrounds. A concept is usually believed to belong to a person. However, people obtain concepts from their own culture. A culture prescribes meaning and usage of a concept, and meanings, usages and feelings between individuals confirm what that concept is. Thus, the collective analysis of a concept can reveal what that concept is in a culture.

Here I would like to compare associations concerning death between cultures, which relate to death education to pupils and students. To clarify the collective consciousness in a culture is useful in order to start learning and discussing about death. The consciousness of learners consists not only of already-learned attitudes, but also of total reflection. Furthermore, through talking and reflection in a lesson on death education, the structure of association can be changed. This change will be a result of death education.

Association

Association method here does not play an essential role in education as in Plato or Augustinus. It is not a philosophical explanation of recognition as in English Associationism. It does not measure a reaction time to find a hidden psychological sphere as described by Jung. The recalled words of the answerer are calculated here by means of information theory to make up an association map.

Kent and Rosanoff, and other psychologists, did not always measure a response time, but they kept gathering a response word from an answerer. The tradition of recording one response word of a testee from one stimulus concept by association research was followed by many psychologists, such as Jung, Kent and Rosanoff, Entwisle, and Umemoto.

Association maps here are different from the so called concept map, which is used as a learning method. White and Gunstone (1992, p.41 and p.156) for example, demonstrate the method to express conceptual relationships visibly. Many are using this type of conceptual mapping under different names: idea map, mind map or topic map.

In this paper I propose a new method to combine fragments of recollection of a group into an association map, in order to reveal collective consciousness by words. I would like to use a terminology of 'cue word', because the association method does not depend on a stimulus-response theory of Pavlovian association, nor does it aim at a universally applicable theory of association. Association method is intended for use in fields, especially in education, where clinical talk relating to both practice and theory is important.

An association map here also intends to visualize relations of words. In an association map all response words in total are shown. It intends to calculate collective recall from a cue word to assess consciousness of a group. When we want to know the consciousness of people, it is better to gather many words related to the cue word answered by people. Response words of association are not selected and sorted to a sentence, so that all the factors in mind remain as response words. And there appear approximately 4 times more information than written responses to a questionnaire (Kamizono, 1997a, pp.20-21). The volume of information is bigger by association in 30 seconds than by an answer responding by means of sentences in a free answering period.

Free association method in this paper draws out the following 3 points from words.

1. all recall of each person in a group, conscious or unconscious

2. social consciousness and private recall, with positive or negative feelings

3. relationship of words, either grammatical or relating to a matter

The method of association map here combines the recalled fragments by a method employing information theory. An association map clarifies the consciousness of a cue word within a group. A rough outline of this theory is as follows.

1. Response words resulting from association show the cognitive sphere of respondents, including knowledge, feeling and thinking.

2. A word, to which many subjects responded, comes near to a cue word in the cognitive sphere of respondents.

3. Association maps in different cultural areas can show differences in the way of response by words visually. Association maps reflect the consciousness of the cue word in each group.

Frequency of a response word is calculated as a probability to a cue word. Frequently appearing response words are considered as those which stand near to the cue word. Therefore frequently appearing response words are situated in the center of association map. One response word by one person at the edge, nearest to the outside of the whole circle, will be a personal recall, and can be a productive idea, which other people did not think of.

In an association map the distance of a response word from a cue word, or the distance from the center of a whole circle (Di) is calculated in the following way: $Di = -\log_2 Ppi$ (bit). Ppi means how many subjects had written a certain response word: number of a response word / number of all respondents. Volume of association (Ai) is used as the growth of a circle of one response word: $Ai^2 = -Ppi \log_2 Ppi / \pi$ (bit). This type of Ai was introduced in the year 2004. The radius of a response word (ri) is $ri^2 = Ai / \pi$.

Entropy is calculated in the following way: $H = -\Sigma Pwi \log_2 Pwi$ (bit). Pwi is the number of a response word in all the response words: number of a response word / number of all the response words.
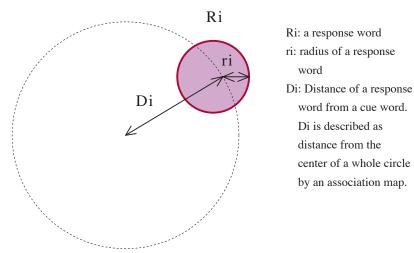

Ri: a response word

ri: radius of a response word

Di: Distance of a response word from a cue word. Di is described as distance from the center of a whole circle by an association map.

Figure 1. Structure of an Association Map

Death

I have chosen the word "death" as a cue word in this paper. Consciousness of death is central to a culture, which reflects a way of life as a mirror of a culture. The purpose of education, and especially of moral education, is to let a pupil or a student undertake to live.

The words relating to death and dying are the same in Chinese and similar in Japanese, but are different in Germany ('Tod' and 'sterben'). Therefore I chose a word that signifies death as a common noun in each culture.

The theme of death, together with sex, is a kind of taboo in modern society. This theme is rather avoided in school education, in spite of its importance. The theme of death is a keystone for deep

reflection of life and morality, especially if we want to give meaning to life.

In Japanese public education it is forbidden to teach religion, because of the negative experience during the Second World War. Furthermore, a major theme of moral education in Japan today is to teach the importance of life, because of the increase of suicide among children, and in Japanese society. The importance of life and keeping on living has been the theme of a conference to support teaching materials for moral education, provided by the Ministry of Culture and Science of Japan in the last several years.

Investigation

I chose 3 cultural areas: Germany, which is located in the center of Europe; China, which has a big population in East Asia and had traditional cultural influences; and Japan, which stands in mixed position. Japan belongs in tradition to East Asian culture but has already a westernized lifestyle.

I carried out surveys at cities in 3 cultural areas: Nagasaki and Hirado in Japan, Wuhan in China and Osnabrueck, Leipzig, Koblenz and Bonn in Germany. All are medium-size cities in their respective cultural areas, a main city in each province, where many kinds of students from a wide provincial area gather to attend universities, and can be said to represent the consciousness of each cultural area. In Germany, I particularly researched both the former east and west areas, because of the different ideological backgrounds in the past.

In each cultural area I carried out surveys for two kinds of respondent. Association tests were done for high school students aged 16 to 17 and university students aged 19 to 21. In total, the numbers of answerers were 165 in Nagasaki (89 university students in Nagasaki-city in the years 2002 and 2004, and 76 high school students in Hirado-city of Nagasaki prefecture in the year 2004), 149 in Germany (89 university students in Leipzig and Osnabrueck in the year 2003 and 60 high school students in Koblenz and Bonn in the year 2003) and 102 in Wuhan (50 university students in the year 2004 and 52 high school students in the year 2004). In this paper, the results of Nagasaki and Hirado are shown under the heading "Japan", the results of the 4 German cities as "Germany" and the results of Wuhan as "China". Within a cultural area, the consciousness of a concept was found to be not so different according to city, for example between Ishigaki-city (far south of Japan) and Nagasaki-city (west of Japan) (Kamizono, 1999).

A 30-second free association test was carried out in 3 different cultural areas and in each of 2 groups for this research. Respondents wrote in 30 seconds what came to mind from the cue word "death" in each mother tongue. 30 seconds has a practical meaning: it is easy to concentrate and possible to collect all kinds of response words, including knowledge, feeling and thinking. A cue word is written in double speech marks (" ") in the following description, the response words of subjects are in single speech marks (' '), and category, names of groupings of response words, will be shown in square brackets [ ].
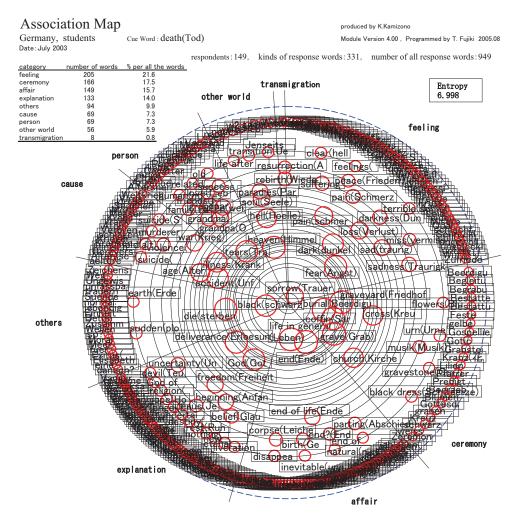
Figure 2. Categorized Association Map of German students by cue word "death (Tod)"

Results and discussion

　　The response words in each area are divided into 9 categories: [Feeling], [ceremony], [affair], [explanation], [cause,] [person], [other world], [transmigration] and [others]. The Association Map of German students, divided into 9 categories, is shown in Figure 2.

　　The first impression of this association map of German high school and university students is that it is filled with words at the center (Figure 2, in comparison with Figures 3 and 4). The average number of response words per an answerer is 6.37, which is the highest of the 3 association maps (China 5.51, Japan 4.70). German students are intensive and productive in recalling words. However, variations of response words of German students are not many; the average number of kinds of response words per subject in Germany is 2.22 (China 2.93, Japan 1.70). The most

frequent response word in Germany is 'sorrow (Trauer)' (at the center of Figure 2), recalled by 46.3% of the students. The most frequent response word in China and in Japan is 'fear' (near the center of Figures 3 and 4), accounting for 29.4% and 24.2% of students' responses. In Germany many students tend to recall the same words from the cue word "death". The second most frequent word in Germany is 'black (Schwarz)' (34.2% of respondents), whereas the second most frequently recalled word in China is 'life in general' (28.4%), and in Japan 'sad' (20.6%). The low figure for entropy in Germany (6.998) expresses these concentrated associations. Entropy of the association map in China is 7.507 and 7.109 in Japan.

The data of response words and entropy of Germany suggest that investigations in plural cities in a cultural area do not always bring variation of response words in comparison with other cultural areas. Moreover, the number of respondents is not always a definitive factor of size of entropy.

In China, the main response words are summed up by 3 words: 'fear' (29.4% of respondents), 'life in general' (28.4%) and 'existence' (20.6%) (Figure 3). Other response words are lower than 10.8%. These include 'departing', 'illness', 'grave' and 'pain' (Table 1).

In China and Japan 'life in general', 'existence', and 'daily life' are different words, which include the same ideogram. Chinese characters provide many variations for written expression, and this ideographic cultural background may be a reason for the high number of kinds of response words per subject (2.93) and entropy (7.507).
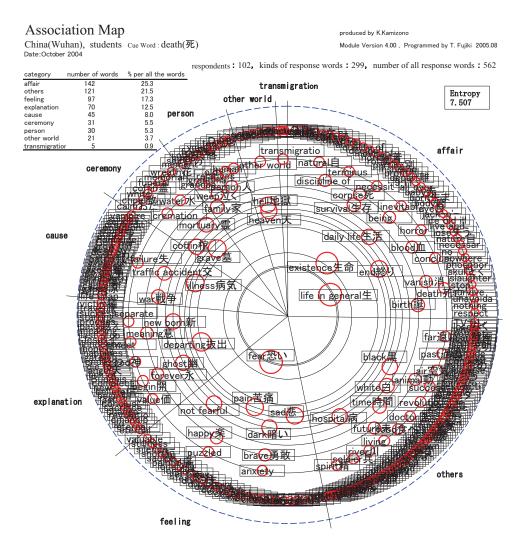
Association Map

China(Wuhan), students   Cue Word : death(死)
Date:October 2004

respondents：102, kinds of response words：299, number of all response words：562

category	number of words	% per all the words
affair	142	25.3
others	121	21.5
feeling	97	17.3
explanation	70	12.5
cause	45	8.0
ceremony	31	5.5
person	30	5.3
other world	21	3.7
transmigration	5	0.9

Entropy
7.507

Figure 3. Categorized Association Map of Chinese students by cue word "death"

In the Japanese association map, 2 emotional words against "death" come to the center (Figure 4): 'fear' (24.2% of respondents) and 'sad' (20.6%). These two negative feelings towards death are strong in the consciousness of Japanese students.

In Chinese response words, we can find the words 'not fearful' (5.9% of respondents), 'brave' (2.9%) and 'happy' (2.9%) (Figure 3 and Table 1). In contrast to these Chinese feelings, the Japanese response words among students tend towards a fearful feeling about death (Table 1).
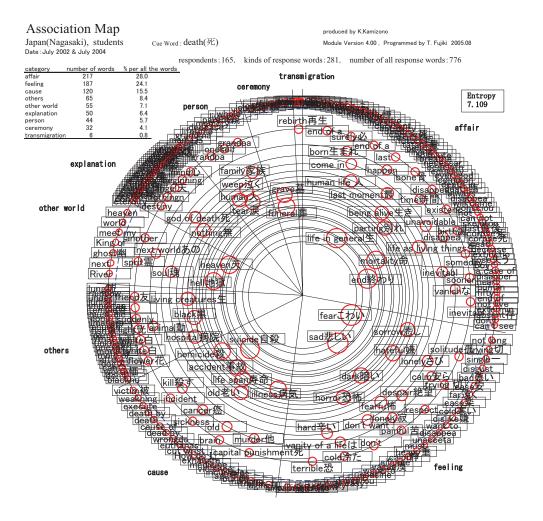
Figure 4. Categorized Association Map of Japanese students by cue word "death"

There are many kinds of response words, which include the Chinese character 'life', like 'life in general' (17.0% of respondents), 'being alive' (4.8%), 'human life' (3.6%) and 'existence' (3.6%) in the category [affair] (Figure 4 and Table 1).

These variations of words have brought many answers concerning [affair]. Or, on the other hand, because Japanese needs various words to talk about such affairs, there are many kinds of words using the same ideogram like 'life in general'.

It is remarkable, that 'suicide' (13.3% of respondents) comes at the top of category [cause] of death (Figure 4), which I will discuss later with reference to death education.

Table 1. Comparison of Response Words in Germany, China and Japan

Germany, high school and university students			Wuhan, high school and university students			Nagasaki, high school and university students		
Response Word	% of respondents	category	Response Word	% of respondents	category	Response Word	% of respondents	category
sorrow(Trauer)	46.3%	feeling	fear恐い	29.4%	feeling	fearこわい	24.2%	feeling
black(schwarz)	34.2%	others	life in general生	28.4%	affair	sad悲しい	20.6%	feeling
life in general(Leben)	24.2%	affair	existence生命	20.6%	affair	life in general生	17.0%	affair
burial(Beerdigung)	24.2%	ceremony	departing抜出す	10.8%	explanation	end終わり	16.4%	affair
end(Ende)	22.1%	affair	illness病気	8.8%	cause	suicide自殺	13.3%	cause
coffin(Sarg)	18.8%	ceremony	grave墓	8.8%	ceremony	heaven天国	12.1%	other world
graveyard(Friedhof)	16.1%	ceremony	pain苦痛	8.8%	feeling	mortality命	11.5%	affair
grave(Grab)	15.4%	ceremony	end終り	7.8%	affair	hell地獄	9.7%	other world
heaven(Himmel)	14.1%	other world	sad悲しい	7.8%	feeling	funeral葬式	9.1%	ceremony
fear(Angst)	13.4%	feeling	heaven天国	6.9%	other world	illness病気	7.9%	cause
deliverance(Erloesung)	12.8%	explanation	daily life生活	5.9%	affair	accident事故	7.9%	cause
die(sterben)	12.8%	others	coffin棺おけ	5.9%	ceremony	homicide殺人	7.9%	cause
God(Gott)	11.4%	explanation	ghost幽霊	5.9%	explanation	dark暗い	7.3%	feeling
tears(Traenen)	11.4%	person	new born新生	5.9%	explanation	life span寿命	6.7%	cause
accident(Unfall)	9.4%	cause	dark暗い	5.9%	feeling	grave墓	6.7%	ceremony
dark(dunkel)	9.4%	feeling	not fearful怖くない	5.9%	feeling	parting別れ	6.1%	affair
illness(Krankheit)	8.1%	cause	hell地獄	5.9%	other world	hateful嫌	6.1%	feeling
cross(Kreuz)	7.4%	ceremony	black黒い	5.9%	others	tear涙	6.1%	person
church(Kirche)	7.4%	ceremony	hospital病院	5.9%	others	sorrow悲しみ	5.5%	feeling
hell(Hoelle)	6.7%	other world	mortuary霊安室	4.9%	ceremony	horror恐怖	5.5%	feeling
age(Alter)	6.0%	cause	white白い	4.9%	others	black黒	5.5%	others
pain(schmerzen)	5.4%	feeling	survival生存	3.9%	affair	being alive生きる	4.8%	affair
loss(Verlust)	4.7%	feeling	birth誕生	3.9%	affair	old老い	4.8%	cause
war(Krieg)	4.0%	cause	war戦争	3.9%	cause	hospital病院	4.8%	others
freedom(Freiheit)	4.0%	explanation	traffic accident交通事故	3.9%	cause	living creatures生物	4.8%	others
sad(traurig)	4.0%	feeling	time時間	3.9%	others	human人間	4.8%	person
soul(Seele)	4.0%	other world	family家族	3.9%	person	nothing無	4.2%	explanation
grandpa(Opa)	4.0%	person	discipline of nature自然の規律	2.9%	affair	weep泣く	4.2%	person
end of life(Ende des Lebens)	3.4%	affair	corpse死体	2.9%	affair	human life人生	3.6%	affair
beginning(Anfang)	3.4%	explanation	being alive生きる	2.9%	affair	existence生命	3.6%	affair
paradise(Paradies)	3.4%	other world	blood血	2.9%	affair	last moment最後	3.0%	affair
grandma(Oma)	3.4%	person	vanish消える	2.9%	explanation	god of death死神	3.0%	explanation
weep(weinen)	3.4%	person	forever永遠	2.9%	explanation	fearful怖い	3.0%	feeling
belief(Glaube)	2.7%	explanation	meaning意義	2.9%	feeling	soul魂	3.0%	other world
uncertainty(Ungewissheit)	2.7%	explanation	brave勇敢	2.9%	feeling	family家族	3.0%	person
suffering(Leiden)	2.7%	feeling	happy楽しい	2.9%	others	come in timeいずれ来る	2.4%	affair
pain(Schmerz)	2.7%	feeling	animal動物	2.9%	others	unavoidable避けられない	2.4%	affair
darkness(Dunkelheit)	2.7%	feeling	future未来	2.9%	person	inevitable必ずくる	2.4%	affair
sadness(Traurigkeit)	2.7%	feeling	weep泣く	2.9%	person	lonelyさびしい	2.4%	feeling
grandparents(Grosseltern)	2.7%	person	person人	2.9%	person	despair絶望	2.4%	feeling
rebirth(Wiedergeburt)	2.7%	transmigration				don't want to die死にたくない	2.4%	feeling
						hard辛い	2.4%	feeling
under 3 response words are omitted			under 2 response words are omitted			under 3 response words are omitted		

Categorical differences in 3 cultural areas

As a category, [feeling] appears more in Japan, at 24.1% of response words (p<.05) and less in China at 17.1% (p<.01). The Japanese show a tendency to respond with emotional words against

"death", but Chinese do not. Response words are different in quality between the two Asian countries and Germany. In Japan and China 'fear' comes at the top of [feeling] (in Japan 24.2% of respondents, China 29.4%) but in Germany 'sorrow (Trauer)' (46.3% of respondents) comes at the top. In Japan 'sad' comes second of [feeling]. Japanese students respond emotionally by the feeling 'fear' and 'sad' against "death" in comparison with Germany and China.

The difference in opportunities for talking about the theme of death will be a reason for the difference of feeling. In Germany 51% of children and young people have experiences of listening to an explanation about death from adults. However, in Japan 74.6% answer that they have not heard any explanation about death from adults. This communication gap may be a reason for children and young people feeling 'fear' or 'sorrow' about death (Kamizono, 1995, pp.19-20)[1].

However the 'dark' image of "death" appears almost equally in the 3 cultural areas: 9.4% of respondents in Germany, 5.9% in China and 7.3% in Japan.

Differences of consciousness between the 3 cultural areas are clear in the categories [feeling], [ceremony], [affair], [explanation], [others], [cause], and [other world], that is in every category except [person] and [transmigration] (Table 2).

Responding with words about [ceremony] is frequent in Germany (p<.01), but not in Japan (p<.01) and China (p<.01). German students recall many words related to funerals like 'burial (Beerdigung)' (24.2% of respondents), 'coffin (Sarg)' (18.8%), 'graveyard (Friedhof)' (16.1%), 'grave (Grab)' (15.4%), 'cross (Kreuz)' (8.1%), 'church (Kirche)' (7.4%) and so on. Japanese students respond only with 'funeral' (9.1% of respondents), 'grave' (6.7%) and the rest are one word per respondent. Chinese students call to mind words like 'grave' (8.8% of respondents), 'coffin' (5.9%), 'mortuary' (4.9%), 'cremation' (2.0%) and the rests are once-occurring words.

Table 2. Category and percentage of response words per all words

category	Germany % per words	China % per words	Japan % per words
feeling	21.6	17.3 ▽**	24.1 ▲*
ceremony	17.5 ▲**	5.5 ▽**	4.1 ▽**
affair	15.7 ▽**	25.3 ▲*	28.0 ▲**
explanation	14.0 ▲**	12.3	6.4 ▽**
others	9.9 ▽**	21.5 ▲**	8.4 ▽**
cause	7.3 ▽**	8.0 ▽*	15.5 ▲**
person	7.3	5.3	5.7
other world	5.9	3.7 ▽*	7.1
transmigration	0.8	1.1	0.8
total	100.0	100.0	100.0

▲significantly more ▽significantly less 　　　 *p<.05 **p<.01

Japanese students do not recall much about the Buddha or Buddhist temple: 1 person (0.6% of subjects) responds with 'Buddha', 1 person 'Temple' and 1 person 'church'. German students recall 'God' (11.4% of respondents) and 'Church' (7.4%). In China 1 person (1% of subjects) recalls

'church', and 1 person 'Buddhism'.

Religious background and religious funeral services are not recalled concretely in Japan or China. In China few students think about [other world] after death (p<.05). The fact will be a reflection of different religious background in each cultural area. 'Heaven' (14.1% of respondents in Germany, 6.9% in China and 12.1% in Japan) and 'hell' (6.7% in Germany, 5.9% in China and 9.7% in Japan) are frequent answers in this category.

'Heaven' and 'hell' may not relate directly to religious teaching, but have a religious background. Without a religious background, there is less likelihood of recalling [other world] after "death".

The dominance of the words related to [ceremony] in Germany may be understandable in the light of the religious background. However, Kooher suggests about American children, that they may have a coping mechanism: "If I know what is going to happen to me when I die, then I won't have to worry about it now" (Kooher, 1985, pp.267-268). The same psychological mechanism can be a hypothesis for a greater occurrence of the [ceremony] category in Germany.

Japanese students react by [feeling] to death, but also recall more about [affair] (p<.01) and [cause] (p<.01) of death. [Cause] is frequent in Japan (p<.01) but less so in Germany (p<.01) and China (p<.05). Japanese [cause] for death is characterized by 'suicide' (13.3% of respondents), which comes at the top of [cause] of death. 'Homicide', 'accident' and 'illness' are all at 7.9 % of respondents, and 'life span' accounts for 6.7% of Japanese students.

This consciousness about 'suicide' seems not to be a sound situation. This situation of consciousness seems to reflect an awareness of suicide caused by bullying in school, and the high rate of suicide in Japanese society in recent years. The suicide rate in Japan is 24.1/100,000, in China 13.9/100,000, in Germany 13.5/100,000 and in U.S.A. 10.4/100,000 according to WHO data in the latest available year 2004.

In Germany 'accident' is top (9.4% of respondents), followed by 'illness' (8.1%), 'age' (6.0%) and 'war' (4.0%). In China 'illness' is 8.8% of respondents, 'traffic accident' and 'war' are 3.9%.

[Affair] is also a dominant category in Japan in comparison to German students. In contrast to death, 'life in general' is the most frequently recalled word in every cultural area: in Germany 24.2% of respondents, in China 28.4% and in Japan 17.0%. 'End' is also a frequent response in every area: in Germany 22.1%, in China 8.9% and in Japan 16.4%. In Japan the word 'mortality' (11.5%) and 'existence' (3.6%) are also recalled together with 'life in general'. In China 'existence' (20.6%) is also frequently recalled. These contrast words to death in the category [affair], like 'mortality', are especially frequent in Japan (p<.05) and in China (p<.01) and not frequent in Germany (p<.01).

Chinese students recall more [others] (p<.01) about death. German students do not remember so much about [affair] (p<.01), [cause] (p<.01) and [others] (p<.01). [Others] in China is not comprised of any special response words but consists of various words including time-related, like 'time' (3.9% of respondents) and 'future' (2.9%) and about color such as 'black' (5.9%) and 'white' (4.9%).

[Explanation] about death reflects each culture. In Japan 'nothing' (4.2% of respondents) comes at the top of [explanation], in Germany 'deliverance (Erloesung)' (12.8%) and in China

'departing' (10.8%) come at the top. [Explanation] is common in Germany (p<.01), which reflects an interpretation of death and a religious way of thinking, like 'God (Gott)' (11.4%), 'freedom (Freiheit)' (4.0%), 'beginning (Anfang)' (3.4%) and 'belief (Glaube)' (2.7%). In contrast with Germany, there is little religious background in Japan, and so interpretation and explanation of "death" could be uncommon.

No categorical differences

Differences of consciousness between Germany, China and Japan were clear in almost every category except [transmigration] and [person] (Table 2).

Transmigration here means that one appears once again in another form in this world after the end of one's life. Response words about [transmigration] appear in every cultural area between 0.8% and 1.1% per response words, and there is no statistical difference. The average figure for [transmigration] per answerers is between 3.6% and 5.9% (Germany 5.4%, China 5.9% and Japan 3.6%).

Koocher reports that 4% of American children refer to reincarnation (Kooher, 1985, p.265). Koocher surveyed 75 children aged from 6 to 15 in a Midwestern University community in USA. In Nagasaki 2.9% of 577 Children from age 9 to 11 refer to transmigration, according to research by Kamizono (1993, p.30) [2]. Therefore we may say that the way of thinking about transmigration depends neither on age group nor on cultural differences. Furthermore we may say that the way of thinking about rebirth to this world appears almost equally in every culture, despite the difference of theoretical and religious explanation about transmigration.

There was no statistical difference relating to the category [person] in the 3 cultural areas. [Person] appears between 5.3% and 5.8% per response words. 27.3% of Japanese students recall [person], compared with 45.6% in Germany and 29.4%in China. A response word 'family' in category [person] was given equally at 2.7% in Germany, 3.9% in China and 3.0% in Japan.

The frequency of the response word 'tears (Traenen)' was relatively high in Germany (11.4% of respondents, 'weep (weinen)' is 3.4%) and in Japan 'tears' is 6.1% ('weep' is 4.2%), but in China 'weep' is 2.9% and 'tears' is 1.0%.

This tendency of 'tears' and 'weep' could be understood in the context of the tendency of [feeling] in each cultural area. Where the [feeling] is frequent, 'tears' and 'weep' are also frequent.

High school students and university students

There is no statistical difference between high school students and university students of each cultural area in each category. German high school students and university students, Chinese high school students and Chinese university students, as well as Japanese high school students and university students, do not differ in their tendency of response words in each category. Tendency of death consciousness is identical in each cultural area in the age range of 16 to 21.

Furthermore, this fact enables us to recognize a stability of association to explain consciousness in a culture. The fact suggests that the structure of category by response words and structure of frequent response words are stable within a cultural area.

Application to death education

　　Association maps reveal characteristics of death consciousness in each cultural area. We can use association maps as an assessment of a group and find a suitable way of carrying out death education. As an example I will take up 'suicide' in Japanese death consciousness.
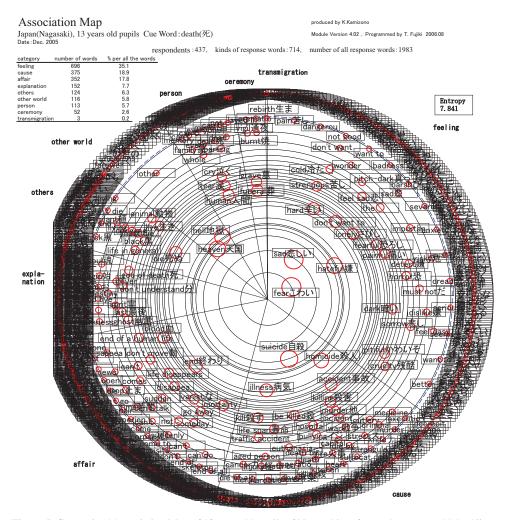

Figure 5. Categorized Association Map of 13 year old pupils of Nagasaki prefecture by cue word "death"

　　Category [cause] was frequent in Japan in comparison to Germany and China, and 'suicide' was the top response word in [cause] of death. The response word 'suicide' accounts for 13.3% of subjects. Based on the result of the association map of high school students in Nagasaki, 'suicide' is the third most frequently occurring in all response words, and occupies 14.5% frequency per subjects. Second [cause] of "death" in Figure 4 is 'homicide' (8.9% of respondents). This situation of death consciousness by high school students and university students seems troubling.

The result of new research on 13-year old pupils in Nagasaki prefecture in December 2005 tells us the situation is more critical, as is seen in the association map Figure 5. This association map is made by a longer (50 second) time span. In a longer time span more social recollections are gathered, and emotional response words tend to appear at the beginning of the association process. (Kamizono, 2005, p.7). Therefore, the percentage for the category [feeling] should be less than the data of 30 seconds. However, the result shows the pupils reacted to death more by [feeling] compared with the association of high school and university students in 2002 and 2004.

The response words that come first and second (Figure 5) are the same as the research of students in 2002 and 2004 in Nagasaki prefecture (Figure 4 and Table 1). Negative feelings 'fear' (45.5% of respondents) and 'sad' (23.8%) remain the top two. Fearful feeling against death is increased. As a category, [feeling] (35.1% per response words) comes at the top of categories and [cause] (18.9%) comes second. Furthermore, the response word 'suicide' (15.1%) stands third of all response words.

Statistics from the Ministry of Health, Labour and Welfare of Japan in 2005 show that suicide is still increasing in Japan, and is the second cause of death between the ages 15 and 19. In the age group 20 to 39, suicide was the most common cause of death in 2005. Consciousness seen in Figure 5 is interpreted as a reflection of this critical situation of suicide in Japan.

Wass suggests perspectives of death education for school-age children in three ways (Wass, 2004, p.301). Two of them relate to the idea that death education should be embedded in larger curricular contexts of cultural education, and also that suicide prevention is a necessary theme.

In the process of embodiment of cultural education, cultural characteristics in each area should be considered. Moreover, consciousness of learners should also be considered within the framework of death and moral education, in order to effectively prevent suicide.

Suicide prevention is an urgent topic in Japan, not only because of the facts shown in statistics, but also because of the consciousness of pupils and students. The situation of consciousness recalling negative and fearful feelings and 'suicide' will not prevent inclination towards suicide. The way of thinking of Japanese pupils and students tends more to [feeling], knows more [cause] of death, but gives few words for [explanation] (7.7% of response words) of death in comparison to the other cultural areas.

In Japan death should be explained more rationally and intensively, despite taboo and negative feeling towards death. When pupils and students obtain rational words about death, word reactions by associations can be changed. Death education, considered on the basis of cultural backgrounds, should be developed clinically and urgently in Japan in order to achieve a more healthy way of thinking about death.

Conclusion

Death consciousness is different in each cultural area in various categories. Japanese students have a tendency to react more by feeling compared to Chinese. Nevertheless, Japanese and Chinese students show the same feeling of 'fear' of "death", whereas German students feel rather 'sorrow' about "death". [Cause] of "death" in Japan is characterized by 'suicide', which appears to be a reflection of the Japanese educational and social situation. German students recall [ceremony] of

death and [explanation] about death in both ways: by the word 'deliverance' and religiously. The category [affair] is dominant in Japan, and the most frequently recalled word in this category is 'life in general' in all 3 cultural areas. [Other world] is not frequently recalled in China.

There is little difference of death consciousness in each category between high school students and university students within the same cultural area.

This fact suggests similarity of death consciousness in high school students and university students, and a stability of structures of association within a cultural area.

Results of association tests suggest some themes in death and moral education. Discussion about suicide is a theme of education especially in Japan. The differences of explaining words and way of feeling in the 3 cultural areas are interesting, and this is useful for comparison and reflection of one's cultural way of thinking and for education concerning death.

This method of association test is 1) easy to use, 2) provides numerically analyzed data and 3) creates a visible map of a cue word.

A free association test can gather total response to a cue word by response words. It reveals different responses on 3 levels: (1) level of knowledge about a cue word, (2) level of feeling aroused by a word, and (3) level of structure of consciousness concerning a word. The association map can show inter-subjective understanding of a concept in a cultural area. Comparing association maps with other cultural groups, we can see characteristics of consciousness in total between them.

Notes

1) The age of children and young people is from 8 to 18 years old. Mother is the most frequent source of explanation among adults about death (29.4% of children and young people in Germany and 10.2% in Japan heard it from a mother).

2) The referred data was reconstructed from the data of Kamizono, 1993, p.30. In the process of development about death consciousness, realistic consciousness of death can be seen from the age of about 9, so the data from 9 years old is used here.

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