

Design choices and issues in Likert-item questionnaires

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「アンケート」方式は、研究者たちが資料収集に用いる今日でもかなり一般的な方法である。そしてその「アンケート」結果は、議論の正に根拠となるのである。従ってそのデータの有効性は、「アンケート」の有効性にかかっている。故に、「アンケート」作成には、必要とされるすべての条件が満たされるよう十分な注意が必要である。日本人参加者を含む研究のための“Likert-item”の場合では、「アンケート」の有効性は、日本的な慣習に沿ったやり方の方がより有効であり、またその方がやり易い。そしてこの「やり易さ」は、正確で有意義なデータを得るよい方法のひとつなのだ。参加者が最も抵抗なく回答できることが大事だからである。このペーパーは、最近の応用言語学から得られた「マルチモダリティ」によるアンケート方法の選択および問題点を検討し、「ローカリゼーション」コンセプトに基づく解決法を提供するものである。

Designing a questionnaire as a part of a research study requires serious attention to a multitude of details. With the goal of procuring realistic information from the participants of any particular study, questions are typically written with a sharp focus to ensure the accuracy and validity of the answers and for triangulation of data (Richards, 2003; Duff, 2008). For times when research projects occur in multi-cultural settings the original questions are often written in one language and subsequently translated into the mother tongue of the participants. As normal practice, authors even ask a third party to *back-translate* the questions into the original language as a way to limit errors in the translation process (Dörnyei, 2007, 2010). It is also quite normal to pilot test the questionnaire before using it in a study. Paying attention to these details aligns with the wishes of the question writers to create an instrument that produces authentic data. In recent times, concepts from *multimodality* have led to a better understanding of not only the content and translation of the questions, but also the way in which they are presented to participants in terms of page design and layout.

Multimodality, the branch of applied linguistics that examines multiple modes of communication within one text, shows that communication occurs in combinations of modes (Kress, 2010). Here ‘mode’ is defined as a particular form of language expression comprised of a unique set of characteristics, e.g., speech or writing; and ‘text’ is defined as “complex semiotic entities which can project a complete (social) world, which can function as complete message-entities which cohere internally and with their environment” (Kress, *Ibid.*). A large number of modal encodings with meaning-potential occur during the creation of a questionnaire. Each mode can be subsequently examined to determine the effectiveness of the semiotic meaning produced.

The work that goes into the creating and piloting of questionnaires can be further enhanced through attention to elements of design. Design is a mode of communication. A well-designed page layout presents information to participants as a complete and coherent text that may make it easier for the elicitation of truthful answers. Available tools for this mode such as fonts, spacing, and letter size warrant consideration as part of the details involved in creating a questionnaire because these details coalesce in a multimodal document to produce meaning.

Problem encountered

As a part of the process of creating a questionnaire for a study I recently conducted involving Japanese university students, I learned of a design concept that I had never considered in the past. This concept has its roots in cultural differences that require careful consideration. In these kinds of multi-cultural cases design choices should be made that provide the most comfortable circumstances for the people answering the questionnaire because among things, they are volunteering their time and effort to generate data. The design should not interfere with the process of answering the questions. The problem I encountered is related to the concept of *localization* found in the area multimodality. The notion of localization indicates that the semiotic resources of a print document follow cultural norms of a particular region (Hiippala, 2007, 2012). For the design of a questionnaire to be given to Japanese students I wanted to answer the question: What is the culturally normal way to write the order of Likert-item choices in Japan?

Data collection, analysis and discussion

One important design element regarding localization appeared in an early draft of my questionnaire after I asked some Japanese colleagues to provide feedback on the document. I had written the Likert-items in the questionnaire to have their accompanying choices arranged as in Figure 1.0. The order of the choices appeared as an innocuous way to write the questionnaire, and it was even precisely modeled after a questionnaire that Dörnyei (2010) had translated into Japanese. A localization issue emerged related to the order of the choices and their corresponding numbers.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I like videos	1	2	3	4	5

Figure 1.0 Pattern of the original design of my Likert-items.

After asking a few Japanese colleagues about the questionnaire they informed me that Japanese questionnaires usually started with the order of the choices directly opposite to what I had written, i.e., with “Strongly Agree” as the leftmost choice. This information was news to me and in direct contradiction to the published research materials I had read, so I began further inquiry into the matter. As a part of this inquiry I asked six university professors from three campuses and two university students about how they expected questionnaires to be designed. All eight people revealed that they expected the choices to appear opposite to the way I had originally presented them. Figure 1.1 represents my interpretation of the Likert-item choices according to what I had been told.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like videos	1	2	3	4	5

Figure 1.1 Perception of the recommended pattern for Likert-item design based on the ideas of Japanese teachers and students.

Continuing the search, I collected a series of official questionnaires containing Likert-items that were given to students by university administrators. I found six different questionnaires used at public and private

universities throughout one prefecture in central Japan. Each of the six student questionnaires used for official university business had the “Strongly Agree” choice on the far left. Some of them included Arabic numbers affixed to the choices for the takers to select and each had the highest numeric value corresponding to the leftmost choice. In other words, the numbers were in descending order going from left to right with the higher number being aligned to the “Strongly Agree” choice. This pattern was also different from my original perception of how to design a questionnaire. Figure 1.2 shows a student questionnaire from one of the largest private universities in Japan designed with the numeric choices ordered 5-4-3-2-1.

II. 以下の項目について、5段階評価の該当する番号にマークしてください。

1. 教員は学生の理解度や反応に配慮して授業をした。

	強くそう 思う	そう思う	どちらとも 言えない	そう思わ ない	全くそう 思わない
1	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

Figure 1.2 Numeric choices in decending order from left to right found on an official questionnaire designed to be administered to students at a private university.

Although the completion process for the taker of the questionnaires varied somewhat from questionnaire to questionnaire by employing different tasks such as filling in ovals or circling choices, the design format of the questions did not. “Strongly Agree” appeared on the left and the highest number representing this choice was also on the left in *all* of the other samples I found. For example, figure 1.3 displays a portion of a form from a national university in Japan. On the form students are asked to pencil in the actual number from 5~1 for the corresponding Likert-item choice in an empty field for an Optical Character Recognition (OCR) reader.

以下の回答は、5段階評価(1-5)で記入してください。出席回数が少ないなど、正当な回答ができない場合は、回答不能(0)を記入してください。

5	4	3	2	1	0
とても そう思う	少し そう思う	どちらとも 言えない	あまりそう 思わない	全くそう 思わない	回答不能

2. 授業での自分自身の様子を教えてください。

- 設問 1 この授業の欠席回数を教えてください(数字を直接記入。5回以上は5を記入)。.....
- 設問 2 自分は、この授業のために、授業外の学習(予習・復習)を積極的に行なった。.....
- 設問 3 自分は、この授業の内容を、主体的に学ぶことができた。
(この授業について、関連資料を調べた、友人と議論した、図書館を活用した等)

Figure 1.3 Numeric choices in decending order from left to right found on an official questionnaire designed to be administered to students at a public university.

Intuitively, the knee-jerk supposition immediately arose that because Japanese traditionally read from right to left that the numeric ordering system found in figures 1.2 and 1.3 is the most localized way to create the Likert-item choices in Japan. Closer examination shows deeper complexities. Localization varies by culture and does not necessarily have to do with the direction in which text is traditionally read. For example, in Germany it would make the most logical sense for Likert-item questionnaires to use the number 1 for the ‘strongly agree’ choice because 1 is the highest grade Germans receive as a mark in school on report cards. Written German reads from left to right yet Likert-items are usually designed in Germany with ‘strongly agree’ as the leftmost choice and its corresponding number as 1 (Claudia Gremler, personal communication, September, 2011).

To further the investigation, I spoke with several more Japanese university professors about this ordering

of the Likert-item choices, and showed them the materials I had found. All agreed that the order should be done in a way that mimics the questionnaires found in the field. I finally did find one professor who did not agree. Following details in Akuto (1987) this professor stated the polar opposite strategy for the design of Likert-item choices compared to what I had found in the field. For questionnaire design in Japan, Akuto (1987) recommends that “Strongly Agree” and the higher number should be on the far right. With this new information, I could see a debate developing with regard to the order in which the Likert-item choices should be written.

Conclusion

I wanted to produce a questionnaire that would create the least possible cultural interference following the concept of localization. In the field I have yet to encounter a single example of a Japanese questionnaire written the way Akuto (1987) suggests. This real-world data convinced me that Likert-item questionnaires in Japanese should be written with “Strongly Agree” as the leftmost choice with the highest numeric value assigned to it. A document with this type of textual layout would most closely adhere to the multimodal concept of localization based on the evidence in this small-scale inquiry. Further research in this area of study is required before a more definitive conclusion can be reached. I continue to probe the issue by showing Japanese educational professionals and students the documents I have been able to locate so far and getting their ideas on the order of the Likert-item choices. Because the evidence I uncovered pointed overwhelmingly in one direction, a direction contradictory to published sources currently available in English, I determined the best way to produce a localized questionnaire for Japanese participants is as shown in figure 1.4.

Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
6	5	4	3	2	1

1. I like DVDs.	6	5	4	3	2	1
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Figure 1.4 A localized way to present Likert-items in Japan (English version).

The English version was then translated into Japanese for students in Japan. Figure 1.5 shows an example of how the final version appeared. Data from the questionnaires found in the field contain implications for anyone designing a questionnaire-based study in Japan. Figure 1.5 appears to be the most localized way to design Likert-items for Japan-based studies.

非常にそう思う	そう思う	ややそう思う	あまり そう思わない	そう思わない	全く そう思わない
6	5	4	3	2	1

	非常に そう思う	そう思う	やや そう思う	あまりそう 思わない	そう 思わない	全くそう 思わない
DVDはとても好きだ。	6	5	4	3	2	1

Figure 1.5 The preferred way to present Likert-items in Japan according to the concept of localization (Final Japanese version).

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