Methodological issues in cross-cultural and interdisciplinary research on sustainable development

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Abstract:
One of the perspectives is to understand and place sustainable development within broader picture of globalization and paradigm shift. As long as we 'neatly' divide education, sustainable development and politics we can discuss them as separate 'fields' of work. Globalization is associated with processes, such as internationalization, international relationships, unification and diversity, local and global and similar. It 'occurs' in all areas of social life and from some points of view in all scientific disciplines.
The purpose of this article is to present methodological issues related to interdisciplinary and cross-cultural research and sustainable development. We can observe cross-cultural research in management, education, and in other disciplines of social sciences. Cross-cultural research, however, requires translation. If research is understood as a form of communication then cultural dimension play role in data collection stage as well as in other stages of research design. When questionnaires, tests and other instruments of data collection are used in different cultural and linguistic groups a question of equivalence becomes essential. Our consideration is that questionnaires like ours are subjected to double translations: from one field or discipline to other and from one language to other. In these double translations cultural equivalence basically cannot be ensured. Qualitative studies, however, can embrace cultural dimension.

Key words: cultural equivalence, cross-cultural research, education, interdisciplinary research

1 Introduction

There is ongoing debate how education, politics and sustainable development are interrelated. Gough and Scott (2006, 275) provide an overview on different definitions and perspectives used to discuss the topic (see Table 1).
One of the perspectives is to understand and place sustainable development within broader picture of globalization and paradigm shift. As long as we 'neatly' divide education, sustainable development and politics we can discuss them as separate 'fields' of work. However, if sustainable development is discussed in relation to politics and education then some major issues emerge. We can label them 'interdisciplinarity' which means that research on sustainable development is understood as interdisciplinary endeavour. However, sustainable development can also be seen as cross-cultural endeavour, especially in environmental and economic 'areas'. Sustainable development also relates to cross-cultural research. Both, interdisciplinary and cross-cultural research raise some methodological concerns.
The purpose of this article is to present methodological issues related to interdisciplinary and cross-cultural research focused on sustainable development. Firstly, we discuss globalization and

internalization; secondly we 'open up the space' to interdisciplinarity; thirdly, we raise some methodological issues related to interdisciplinary and cross-cultural research and fourthly, point to surveys and qualitative case study designs. We conclude by arguing that interdisciplinary and cross-cultural research on sustainable development requires both research designs to be employed because sustainable development is a complex, multi-perspective notion.

Table 1. Perspectives on politics, education and sustainable development

Perspective	View of politics, education and sustainable development
Segments	Focuses on understanding the nature of sustainable development. Holds that economic, social and environmental aspects of sustainable development are ultimately inseparable, and so must be addressed simultaneously. Education is seen as one political policy means to this end.
Technocratic	Focuses on specific problems of sustainable development that can be addressed piecemeal within existing political structures using appropriate technical expertise. Education and training can equip people with the necessary expertise to do this.
Paradigm shift	Focuses on a view of historical processes. Sustainable development requires nothing less than a revolution in the ways we think about, and live, our lives. Education can facilitate this (inescapably political) process.
Task-based	Focuses on continuing human action and how this relates to sustainable development. Such action may be environmental, social or educative, and may be encouraged or discouraged by political policy. It is important to note that many educators would seem to have a contrary view of their professional task according to which both sustainable development and politics are marginal to it. Nonetheless, there are strong policy initiatives in many countries that emphasize the potential of education to address such issues.
Globalization	Subsumes education and sustainable development within a wider political discourse. Education can make a contribution to debates and understanding.
Metaphorical	Conclusions about politics, education and sustainable development are reached on the basis of metaphorical understanding. This may well be tacit and/or unselfcritical. Education can help people appreciate the subtleties of such reasoning.
Pragmatic	Individuals who have no choice but to act in the here-and-now may be influenced primarily by expediency, indifference, opportunism and/or serendipity, or by commitment and enthusiasm. Their experiences may lead policy, rather than be led by it. Education can help people understand such processes.

Source: Gough & Scott (2006, 275)

2 Globalization and internationalization

" 'Globalization' is on everybody's lips; a fad word fast turning into a shibboleth, a magic incantation, a pass-key meant to unlock the gates to all present and future mysteries" (Bauman, 1998, 1). Globalization became 'a keyword' by which we try to explain major changes and processes in the world. However, Rosenberg (2000) does not take the mysterious nature of globalization for granted and points to scientific studies on globalization, reinterpretation of history, time and space dimensions and similar. Therefore, he argues, globalization is an explanatory scheme, a descriptive category that embraces geographical dimensions of social processes and intensification of social relationships across the world. For example, globalization is 'visible' through the rise of trans and supra national organizations which lead to multicultural working environments and international recruiting schemes. Lim, Winter and Chan (2006, 265) discuss the changing nature of workforce demography and argue that it "may result in a shift in people's work values, attitudes, and beliefs, which have important ramifications for the importance placed on certain work aspects". Globalization is associated with processes, such as internationalization, international relationships, unification and diversity, local and global and similar. It 'occurs' in all areas of social life and from some points of view in all scientific disciplines.

If globalization is to be understood as the most (mis)used, almost mysterious and rarely well-defined word (Beck, 2003, 37) [3], then internationalization, especially in higher education, is 'more operational concept' than globalization. Teichler (2004) argues that internationalization in higher education means increased activities beyond the borders of Nation-States and is closely related to the 'physical' mobility, exchange, and cooperation between higher education institutions, the 'harmonization' of higher education (Bologna processes) and the emergence of education(al) markets. Along with international 'exchanges' also transfer of constructs and concepts from one discipline to another occurs. If we, for example, look at education from pedagogical (instructional) and structural points of view then we can observe how internationalization has influenced the structure of programs and development and acquisition of instructional approaches, principles and methods in 'Bologna process'. Yet, if we look at governance and management (see Zadel, 2006) of educational organizations then we can observe transfer of concepts from management to education. So we no longer discuss

'harmonization' of specific area (as e.g. education) within EU only but also transfer and 'concepts and construct borrowing' from one scientific discipline to other.

These processes and trends gave among others rise to interdisciplinary research as well as cross-cultural research.

3 Interdisciplinary and cross-cultural research

There has been intense discussion as to what interdisciplinarity is. Manathunga, Lant and Mellick (2006) point to considerable confusion about its precise definition. They argue that interdisciplinarity

"is in danger of becoming an empty buzzword, bandied about by everyone but meaning very little. As Klein affirms, however, it is not meaningless, but saturated with meaning, carrying with it an 'overload of linguistic freight' (2001, 397). This is partly because interdisciplinarity is not a unified and clearly defined phenomenon" (Manathunga, Lant & Mellick, 2006, 366).

Szostak (2007, 2) states that

"while competing definitions exist in both cases, the literature has advanced to a degree where an interdisciplinary scholar can readily discuss the key elements of such definitions. In particular, the scholarship on interdisciplinarity generally, though not always, stresses the importance of integration*: the need to critique the insights of different disciplines and to seek common ground when these insights disagree. The insights of a discipline are the specific arguments it makes about the nature of a particular phenomenon (a society's income distribution, or attitude toward punctuality, or fertility rate, or a particular work of art), or how one phenomenon influences another. Such insights, as we shall see, need to be evaluated in the context of the discipline's favored theories, methods, and overall disciplinary perspective"*.

The question is not, however, only related to discipline –interdisciplinarity polarity which can be futile when researchers design their studies. One of major issues is how one can research and understand life around us. If this is one of the purposes of any research then interdisciplinarity is one of the 'options' to gain insights into research problems and to study how widely they are spread around population.

Szostak (2007, 3) also discusses disciplines and argues that

"One of the key characteristics of a discipline is the worldview or perspective that shapes research and teaching in the discipline. This embraces the four elements below, but also elements of ethics, aesthetics, and ideology (Klein, 1990; Salter & Hearn, 1996; Szostak, 2003):

(a) A set of phenomena that are the focus of study
(b) One or a few key theories
(c) One or a few key methods
(d) The "rules of the game" governing hiring, promotion, and publication decisions".

However, he does not 'exclude' interdisciplinarity. He refers to Klein and Newell (1996, 395) who define interdisciplinarity and its 'use' as

"a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession . . . Interdisciplinary studies draws on disciplinary perspectives and integrates their insights through construction of a more comprehensive perspective"(in Szostak, 2007, 6).

From this point of view, tensions between disciplines and interdisciplinarity are reduced however not eliminated. In addition, research on sustainable development tends to be cross-cultural. Many sustainable development curricula have been developed and evaluated nationally and internationally, environmental issues simply call for cross-cultural studies and politics (politicians) seek for policies that 'work' nationally but are also comparable and acceptable 'cross-culturally'.

Hence, beside interdisciplinarity also cross-cultural research is emphasized. Goldsmith (2004) states that research should be cross-cultural. We can observe cross-cultural research in management, education, and other disciplines of social sciences, and recently also in the field of sustainable development.

Researching sustainable development requires interdisciplinary studies as well as cross-cultural studies because dimensions of sustainable development are society, economy and environment, all bounded in cultural contexts yet 'world-wide' essential.
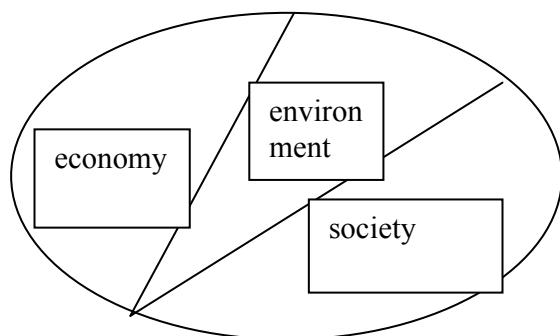

Figure 1: Dimensions of sustainable development

Different research methods and techniques are used across disciplines and instruments translated from one language (often English) to other languages. In using instruments that are designed in what could be called 'lingua franca' of the modern world (Trnavčevič, Logaj & Trunk Širca 2008, Kocbek, 2006) and subject to translations some major issues can be identified[i] and will be discussed later in the text.

In observing and researching social phenomena at least two research designs have been used frequently, namely surveys and qualitative case studies.

4 Survey

Surveys are commonly used by public and private organizations to collect information (Gray & Guppy, 1994, 5). Users of surveys require solid and reliable data. Very often gathered data serves as a ground for policy making and decision-making processes. As policies in different countries have a certain degree of similarity (e.g. environment protection policies, national education policies, and economic measures) and also some common goals the same questionnaires are used internationally in order to gather comparable and solid data (TIMSS and PISA

studies, for example). However, use of the same instrument requires translations. In order to achieve the goal – reliable and solid data, some procedures need to be undertaken when translations are in the process. One of them is related to ensuring equivalence in translations.

Cross-cultural research requires translation. And translation is often discussed and related mainly to instruments (questionnaires and interviews) that are used in linguistically different samples – different cultures ((Pena 2007; Lim, Winter & Chan 2007; Yamkovenko, Holton & Bates 2007; Shah 2004; Welch & Piekkari 2006), for example ability test, knowledge tests, attitude scales and similar are often used in cross-cultural comparative research. Kocbek (2006) in her discussion on lingua franca (neutral language used for communication between different language groups) argues that cultural element or 'corresponding culture' plays essential role in communication and is often neglected. Also questionnaires applied across different languages and cultural contexts could be understood as 'lingua franca' – the means of communication across cultures (Trnavčevič, Logaj, Trunk Širca 2008). Wil-Harzing et al. (2005) have done an analysis on the use of the English language in questionnaires in cross-national research and found that statistically speaking there is little evidence of a 'language barrier' in doing questionnaires across the countries in the English language. Although in this case we do not speak about translations we still have different cultural backgrounds which non-translation and the use of questionnaires in English language presumably reduce.

Surveys, if conducted in 'lingua franca' are based on transaction, on the exchange of 'something' that is to be taken home and on the 'law of quantity' (Derrida, 2001, p. 179), associated with economy.

Research is a form of communication therefore cultural dimensions play a role in data collection stage as well as in other stages of research design. When questionnaires, tests and other instruments of data collection are used in different cultural and linguistic groups a question of equivalence becomes essential. Pena discusses methodological considerations of translations in cross-cultural child development research and argues that beside

linguistic equivalence also functional, cultural and metric equivalence need to be addressed and achieved (Pena, 2007, 1262). In her view "the potential for cultural mismatch highlights the need to consider cultural equivalence in developing methods for cross-cultural research". Critics of surveys often argue for use of qualitative case studies or other forms of qualitative research in order to embrace cultural specifics.

5 Qualitative case studies

Qualitative research (in our case, the qualitative case study) is associated or emerges from the interpretivist, phenomenological, constructivist research traditions. The word "qualitative" indicates our – or the researcher's – standpoint/perspective about ontological, epistemological and methodological issues. Is the world out there objective? How can we get to know it? And, if we "approach" this world through the correct use of methods, can we gain "objective" reliable, valid, true evidence? As qualitative researchers we can take a perspective called 'constructed views'; we argue that there is no world "out-there"; it is the people who negotiate and create meanings, understandings, and therefore, we should not only measure the "objective world out-there" and look for simple causalities, but should also understand the meaning, how people construct the meaning, and how they "interpret" their lives.

When designing and planning qualitative case study, one of the central questions is: what are the sources of evidence and how can we collect the evidence? There are multiple sources of evidence. Yin (1994, 78) states that documentation, archival records, interviews, direct observation, participant observation, and physical artifacts are the sources of evidence. Furthermore, it is also useful to make a distinction between the sources of evidence, such as documentation, archival records, physical artifacts, and people – participants or informants who can "tell" about their views, perspectives, and attitudes about the topic of study. Different sources of data can be 'studied' through different methods and techniques. There are many data collection methods used in the qualitative case studies, such as interviews, observations, documentary analysis, and analysis of physical artifacts.

Participants/informants not only speak through spoken words, but also "speak" through their actions, behaviors, artifacts they have produced, and (in the case of ethnographic study) through their everyday life. Hence, sources of evidence are, in a way, always related to people/participants/informants.

Each method of data collection has its own advantages and weaknesses, which are not weaknesses or advantages per se. They are relational and what might be perceived as weakness for one case study can actually be an advantage for the other. With regard to "absolute" dimensions and categories, even terms such as weaknesses and advantages in the qualitative case studies are questionable. When we conduct a case study, we look at different possibilities – methods to collect data. Since we usually look for multiple sources of evidence to enhance the credibility of our case study, we also search for different methods to collect the data. Many researchers and research texts use the expression qualitative methods (vs. quantitative methods). We find this division very simplified and also grounded in understanding methods as a set of value-laden strategies, which the researchers use consistently with the "declared" nature of their study.

At this "stage," we can discuss the different paradigms; however, when it comes to data collection methods, this division between the qualitative and quantitative becomes vague. Methods per se are neither qualitative nor quantitative. We can conduct a survey and use the evidence gathered this way to inquiry our "case." It is, however, questionable whether it makes sense to conduct, for example, large-scale survey to gain the initial evidence for a case study. Decision with respect to this issue depends on many assumptions when the research design is planned: how large is the research? Is there only one researcher? Is our study designed as "mixed methods design" or do we want to gain an insight into the participants, constructs, perceptions, understandings, and meanings? However, this discussion leads us back to the question – what is the purpose of our study? What do we want to know? In the practice of qualitative researchers, interview and observation are the frequently used data collection methods and

hence, are also the center of our discussion in this study.

5.1 Interview

When a researcher designs a case study, the topic, the purpose of the study, aims, and research questions imply the possible methods of data collection. Interview from this point of view is not an "all-purpose" suitable method. Kvale (1996) specifically stressed the situations when the interviews are not the appropriate method. For example, if we want to study large sample and predict the behavior in elections, then survey is better than interview. However, if we want to gain insight into singularity (a person, a small group, an organization) then interview, observation, and critical incident method can best-suit the purpose. If we grounded the initial distinction on sample (large sample for survey, small sample for interview), then the decision on when to use the interview becomes simple. However, the basic decision gets more complicated when we go back to the purpose of the study. What do we want to study and how can we study it? For example, in management and education and hidden curricula on sustainable development very often the "case" is an organization. Fairly standardized research designs have been used to study the organizations, i.e., surveys have been used to study "soft dimensions" of the organizations as well; however, some issues emerged in these kind of endeavors, namely, what is the purpose of such studies and how can the management enhance the organizational performance operating on statistical data only. Interviews are now seen as a tool to increase performance. However, there is more than one type of interview with respect to the structure of the questions:

- Structured
- Semi-structured
- Unstructured

Structured interview is similar to questionnaire. The questions can be closed or open-ended, and during the interview the questions are asked in the same order. However, the researcher can encourage the participants to elaborate on interesting topics.

Semi-structured interviews are often used in qualitative case studies, where the researcher has some questions prepared in advance. However, there is a great flexibility in terms of ordering, omitting, and adding questions and most of all, in encouraging participants to "say more" about interesting topics and themes that emerge during the interview. The types of questions are extensively described by Kvale (1996). To gain in-depth insight into the participants' perceptions, the constructs and meaning that researchers assign to the topic under the study questions, such as 'are you…?' and 'do you…?' are not very useful. The researcher tends to phrase the questions with 'why', 'how' and 'what' which have the potential to lead to rich descriptions and complex answers.

Interviews can also be individual or group. A researcher can decide on the type of interview based on its benefits, for example, a group interview enables dynamic and vivid discussion between participants. However, group interview can also hinder some participants from participation, especially if there is a "strong" participant who leads the discussion.

5.2 Observation

In management as well as education, observation is a relatively "new" method. Not only managers, but many researchers also ask themselves what an observation can contribute to the scientific research. Nevertheless, observation is very useful when used in the organizational setting. When we study the organizational culture, atmosphere, behavior of the employees, and students in the classrooms, the data gathered by observation can reveal activities, processes, and behaviors that are even contradictory to what the participants "declare" in the interviews or other means of data collection. A very interesting example of the observational data was a case study about implementation of new approaches for children in kindergarten. The focus of the study was the teachers' communication with children. In the interviews, the teachers expressed their concerns and perceptions about new communication approaches and all participants emphasized their success in open, face-to-face, warm, and most of all "clear" communication with children. However, the observational data revealed just the opposite. Teachers still

communicated with the children in "old" ways, showing them their back, mumbling, formulating unclear sentences, and conveying different messages than those written in the curriculum. In another case of an organizational setting, the director claimed that they have a "bottom-up" approach to decision-making. He was proud that the middle managers cooperated and collaborated well with the top management, and that their decisions were "grounded" in expectations and suggestions of the "basis." However, observation revealed that the middle managers actually proposed many solutions, but very few, almost none, were taken into account by the top management. "Proposal setting" meetings appeared like "therapeutic session" where the middle managers talked, while the top management had already taken the decisions.

Observation can be used to collect data about physical evidence, activities and routines, and different stages of processes that take place in everyday's life or in an organizational setting. To provide solid data, the observation has to be systematic. It means that the field notes have to include both the observation sheet, where the researcher marks the observed behavior and comments that are written immediately after the observation. It is also worth considering the use of video-camera to record the physical evidence, meetings, and other activities in different settings.

5.3 Critical incident method

Thorpe, Esterby Smith, and Lowe (2005) argue that the critical incident method accompanies interviews. However, it can also be used as an independent method because of its potential to gather in-depth data about meanings and most of all critical "moments" as a part of the processes of the participants. Participants can be asked to identify (in spoken or written) "a critical moment" in their professional lives as a result of a process. These kinds of data contribute to the understanding of a process or activities as a part of reflexivity on past events, where participants reflect and illuminate their activity within the broader context.

6 Conclusion

Discussions around methods, their strengths, and weaknesses are often the central issues in any research project. However, a researcher has to consider the purpose of the study rather than focus on the methods themselves as being "independent" from the content of research. Therefore, questionnaires that many researchers assign to quantitative research can also (technically speaking) be used in qualitative case study; however, they cannot be the only method of data collection. When an extensive explorative case study is designed, a researcher might think of conducting a small-scale survey using questionnaire. Also, data from previously conducted surveys can serve as a standpoint for designing case studies. However, in management, education and sustainable development other methods are becoming more "useful", especially if an organization, a school or classroom activities and relationships are studied.

The rigor of the methods themselves is questionable; and rather, the discussion on the credibility and trustworthiness of the case study is significant.

Our consideration is that questionnaires in cross-cultural and interdisciplinary research are subjected to double translations: from one field or discipline to other (for example a questionnaire for managers is translated to questionnaire for school leaders) and from one language to other. In these double translations cultural equivalence basically cannot be ensured. And if we return to the remark of Pena (2007, 1262) that "the potential for cultural mismatch highlights the need to consider cultural equivalence in developing methods for cross-cultural research" we expand the 'potential cultural mismatch' into actual cultural mismatch. Although there is specific 'sameness' in structural elements of national policies across many countries, cultural (traditional) dimensions remain distinctive.

Qualitative case studies provide an opportunity to identify cultural issues and hence interpret results within cultural context. Data collection methods that are used in qualitative case studies, however, do not straightforwardly ensure equivalence (metric, functional and linguistic as they are required in questionnaires) and from this point of view comparison of results in statistical terms is not possible and also not the aim of qualitative case study design.

When interdisciplinary research on sustainable development is designed both research designs contribute to solid data basis for policy makers.

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i   An example: Marketing culture in Slovenian secondary schools

In 2006 a group of Slovenian researchers (Trnavcevic, Biloslavo, Snoj, Logaj, Kodric, 2007) conducted a survey on marketing culture in secondary schools [13], The idea to conduct such survey was based on two assumptions:

a) secondary schools in Slovenia are on the educational market
b) in order to survive in the market schools need to adjust their culture accordingly.
c)

We looked how schools operate and find out that they adopt business techniques and concepts. One of the organizational cultures that correspond with market philosophy is marketing culture. In order to measure/audit marketing culture in secondary schools we searched for measurement instruments. Webster (1990) developed an instrument for measuring the concept in service industry and refined it in 1993 [14]. She defined marketing culture as multidimensional concept.

Our translation of the questionnaire was twofold:

a) translation as applying concept from service/business/management discipline to educational management

b)   translation of the instrument

The questionnaire covered 7 dimensions and consisted of 59 Likert type items on the scale 1 to 5.

Marketing culture dimensions	Description
Service quality (KA)	Commitment of employees to high service quality.
Satisfaction(ZA)	Satisfaction of employees and focus on customers' satisfaction.
Interpersonal relationships (MO)	Focus on motivation of employees, HRM policies, etc.
Competitiveness (KO)	Knowledge about competitors and success in gaining new students.
Organization (ORG)	Focus on organizational issues of work process.
Internal communication (IK)	Focus on management – employees relationship, dialogue with parents, students, and others.
Inovativeness (IN)	Focus on extent of employees' involvement in implementing new programs, new ideas etc.

Table 1: Marketing culture dimensions

The sample was representative and based on probability sampling procedure. Beside other hypotheses we expected that also in our sample marketing culture will be multidimensional concept. However, on calculation of factor analysis (Graph 1) we found out that marketing culture is uni-dimensional concept.

Scree Plot
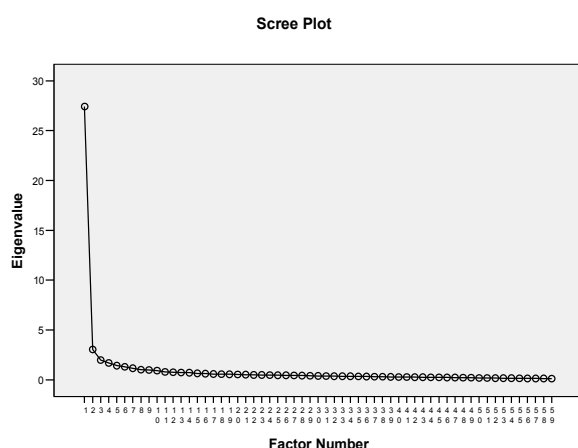
Graph 1: Factor analysis [13]

The analysis of what was done prior the questionnaire delivery in terms of ensuring equivalence(s) gives us space to hypothesize what could be one of significant reason(s) for different perception of marketing culture.

In our translation process basic attention was paid to linguistic equivalence. It was ensured by back-translations. From a group of researchers one translated into Slovenian language, others translated questions back to English and we compared the versions. However, in translating the questionnaire more than just a language was at stake. The translation of some notions was found irrelevant for schools. Therefore we used relevant notions or omitted a question (for example how good work relates to salary was irrelevant for schools since they operate under specific legislation). This is related to cultural equivalence which in our case meant also adjustment to culture – field or scientific discipline.

Another cultural dimension needs to be pointed out, namely the attitude toward questionnaires. This attitude can best be described a statement of school principal that "schools are overwhelmed with questionnaires".

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