QUALITATIVE METHODOLOGIES FOR QUESTIONNAIRE ASSESSMENT

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Development of a survey on Gender-based Violence

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INTRODUCTION

The topic of gender based violence is one of the priority areas at international as well as national level. The definition of gender based violence has been discussed and developed by several institutions and presented in several policy documents (e.g. Istanbul Convention[2], UN[3], EC[4]): gender based violence is understood as violence directed against a person because of that person's gender. This broad concept allows to put gender based violence in a wider social context and enables the interested parties to take into consideration the majority of violations against human rights.

According to the Istanbul Convention, countries should conduct population-based surveys at regular intervals to assess the prevalence and trends of GBV. However, the challenge for collecting the data on GBV is remained while those definitions are not possible to use directly in the questionnaire in order to collect harmonised data. Furthermore, the prevalence and disclosure rate might be connected with the extent to which violence is tolerated in the wider community[5]. The most recent EU-wide opinion survey[6]showed that there are significant differences between Member States at which level the gender based violence is accepted and justified at population level.

Survey data are only as meaningful as the answers the survey respondents provide. Therefore, in the developed EU questionnaire on GBV, the questions are focusing on measuring behaviour and specific acts, and their effects on personal physical, sexual and emotional wellbeing.

Nevertheless is important to make sure how the respondents understand the questions on gender based violence, the suitability of the instrument needs to be evaluated, both with a focus on the ease in understanding the questionnaire by respondents and in managing it by the interviewers. *"Good questionnaires impose low response burden and remain both respondent and interviewer-friendly. They ask relevant questions and permit data to be collected efficiently and with a minimum number of errors, while facilitating the coding and capture of data and minimizing the amount of editing and imputation that is required"* Statistics Canada, 2003.

The questionnaire is both a measuring and a communicating tool and for that reason it should be pre-tested. Pretesting allows to test operational concepts and definitions as well as questions or the questionnaire as whole; it is particularly important in cases where no pre-existing questionnaire or topic-specific survey exists and new survey tools have been developed or if pre-existing questionnaire has been adapted for a new culture/language (UN guidelines).

Pretesting play an essential role in identifying and potentially reducing measurement error that damages statistical estimates at the population level and thus endangers comparability across population in multinational, multiregional, and multicultural surveys.

A wide range of methods can be used to test and evaluate the questionnaire. The suitability and intensity of their use depend on various factors and circumstances. These include the type and size of the survey, the survey's content, utilization of previous survey questions, whether it is an ongoing collection or not, the method of data collection, the project schedule, the budget, and the availability of resources[7].

Qualitative testing should be used to provide insight into how respondents react to a questionnaire. Qualitative methods include focus groups and in-depth interviews, preferential witness meetings, experts revision, not participating observation, cognitive methods such as think-aloud interviews and paraphrasing, behaviour coding. Findings from these tasks can be used to elaborate and refine the instrument until a final questionnaire is created.

[2]https://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=090000168008482e
[3]http://www.who.int/topics/gender_based_violence/en/
[4]http://ec.europa.eu/justice/gender-equality/gender-violence/index_en.htm
5Waltermauer, E. (2012). Public justification of intimate partner violence: A review of the literature. *Trauma, Violence, & Abuse,* 13, 167-175.
6 EU-wide opinion survey - Special Eurobarometer 449 - November 2016, Gender-based violence. Report.6.
7 Statistics Canada, (1994)

SECTION A: PRE-TESTING THE QUESTIONNAIRE

Pre-testing stages

The pre-testing process can refer to different stages of the survey planning and of the survey's tools design[8].

The researchers can plan *test at the initial stage of the questionnaire development process*. At this stage concepts, definitions and knowledges about the topics of interest are evaluated.

Later, when a draft questionnaire already exists, *laboratory methods* (pre-field) can be used on sub sets of questions. Generally, they are mainly qualitative tests.

When an advanced version of the questionnaire is available, *field methods* can be used. These tests are carried out mainly in conditions that resemble the real conditions of investigation. Generally, they are quantitative tests. Pilot surveys are included.

For comparing alternative sequences or alternative wording of the questions, researchers can also conduct *experiments or experimental test* consisting of quantitative and qualitative analysis of the results obtained through different versions of the questionnaire.

1. Test at the initial stage of questionnaire development process

- *One-on-one in depth interviews*: represent the most common data collection method in qualitative research and are a familiar and flexible way of asking people about their opinions and experiences. Qualitative interviews are generally described as either being semi structured or in-depth. The former are based on a series of open-ended questions about a series of issues the researcher thinks are relevant to the topic. The latter may only include one or two topics but in much greater detail. The use of individual interview may be more appropriate when discussing sensitive issues or topics that require self-disclosure.

- *Focus groups (FG)*: are small gatherings of 6-12 people who meet with a trained moderator to talk about ideas and materials. FG is a type of in-depth interview accomplished in a group and the participants influence each other through their answers to the ideas and contributions during the discussion. The moderator stimulates discussion with comments or subjects. The information gathered can provide important clues to human attitudes and values as they relate to the topic. Focus groups are a useful method to quickly get a wide variety of information on the topic and get new ideas, suggestions, and recommendations while during the short period, a lot of different opinions could be heard. However, this method do not allow to research the question-and-answer process in detail and therefore, for a detailed evaluation of questions, other methods might be more useful. FG could be used in combination with other methods, for example, with focus group that could be more efficient identifying definitional problems while cognitive interviews could be used for evaluating specific question wording.

  Focus group method is discussed more in depth in Section B.

- *Experts review*: this method includes individually based expert reviews to get expert opinions in the design step of the questionnaire, in the pretesting step or even on the operational step. It can be useful for evaluating draft questionnaire or subset of questions. The reviewers should be experienced survey methodologists with knowledge of the theoretical or practical aspects of questionnaire design, fieldwork issues, and of data processing. The number of expert reviewers tends to be small, from two or three to over 20 experts, depending on several factors such as complexity of the topic under investigation, level of expertise among question designers, time and resources available. Experts can be consulted independently or brought together in the form of an expert panel.

  Expert review method is discussed more in depth in Section C.

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[8] Bradburn, N. M., Sudman, S. (1991); *The current status of questionnaire design,* in "Measurement error in surveys", Biemer, Groves, Lyberg, Mattiowetz, Sudman (Eds.), John Wiley and Sons, NY, pp.29-40. ISTAT (1989); Manuali di tecniche di indagine, voll. 1-6, Istat, Collana Metodi e norme, Roma

2. Laboratory methods (pre-fields)

- *Pretesting of the questionnaire*: can be conducted as an informal test that helps identify poor question wording or ordering, errors in questionnaire layout or instructions, and problems caused by the respondent's inability or unwillingness to answer the questions. Pretesting can also be used to suggest additional response categories that can be pre-coded on the questionnaire, and to provide a preliminary indication of the interview length and refusal problems.

  At this stage the goal is not to draw a representative sample of the target population, but to assure that the instrument is tested in various difficult conditions to stress its reliability.

  Interviewers for the pre-test should be particularly able to help in identifying problematic areas of the questionnaire or of the interview. It is recommended to provide interviewers with a detailed list of the aspects of the questionnaire to be tested and the feedback of the interviewer should be recorded and analysed. Debriefing sessions with interviewers can take place following a pre-test in order to get their input into the (re)design process. It is advised, also, that the researchers responsible for the survey conduct some interviews for testing by themselves the suitability of the instrument. Pretesting can be iterative until the final version of the questionnaire is generated.

- *Cognitive interviewing*: Cognitive methods are used to examine respondents' thought processes as they answer the survey questions and to ascertain whether or not they understand what the questions mean and are able to provide accurate responses[9].

  Cognitive methods are discussed in depth in Section D.

3. Field test

- *Behaviour coding*[10]: provides a systematic and objective means of examining the effectiveness of the questionnaire by analysing the interviewer-respondent interaction. Can be a field test or a laboratory test. It requires medium sample size (30 interviews are considered sufficient to detect problems), well trained coders and consistent use of the coding scheme.

- *Interviewers debriefing:* discussion groups with interviewers with the aim at obtaining useful feedback on the performance of the questionnaire. Interviewers debriefing can be planned daily, soon after the data collection session, or after each interview. It is recommended to take notes during the meeting or audio-tape it.

- *Respondents debriefing:* respondent interview, soon after the survey interview, to get useful feedback on the issues of the questionnaire. This kind of interviews are very useful used together with quantitative test such as behaviour coding, and quantitative data such as non-response rates.

- *Follow-up interviews*: a second semi structured interview, following the initial interview and conducted by a different interviewer, with the aim of identifying issues with reference to the questionnaire content and questions. Respondent are led to remember how they interpreted and understood a subset of questions when answering to the first interview. It requires well trained interviewers. It is recommended to conduct the follow-up interviews shortly after the first interview and provide the interviewer with the answers already given by the respondent and a main topics outline.

- *Pilot survey*: is a survey that reproduces all the survey phases on a small number of survey units or respondents. It is not important that sample units or respondents are representative of the overall population. Rather, it is important that they represent the various ways respondent will be contacted so they can reveal any difficulties that may emerge during the actual survey. While a pre-test focus more on the questionnaire alone, a pilot study deals with the entire survey.

4. Experimental tests

- *Split sample test* (the alternative test): refer to controlled experimental testing of questionnaire variants or data collection modes to determine which one is "better" or to measure differences between them[11]. Split sample experiments may be conducted within a field or pilot test, or they may

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9 Forsyth B.H. and Lessler J.T. (1991) "Cognitive Laboratory Methods: a Taxonomy", in *Measurement errors in surveys*, Biemer et alt. (eds.), J. Wiley, N.Y.

10 Oksenberg, L., Cannell C., and Kalton, G. (1991). New Strategies for Pretesting Survey Questions. *Journal of Official Statistics vol.*7 (3): 349-394; Groves, R. M. et al. (2009). *Survey methodology* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

[11] Statistics Canada (1998): "Quality Guidelines". Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6

be embedded within production data collection for an ongoing periodic or recurring survey. When it is used as pre-testing method, it is necessary to prior define standard by which the different versions of questionnaire or questions can be judged. The sample size for each alternative should be designed to ensure that it has sufficient statistical power to detect real difference on the aspects under assessment. It is important to use a large sample and that the participants have been randomly assigned of the test versions. This type of pre-test is expensive, nevertheless it provide important information to compare survey questions, to assess the extent and direction of impact changes in question order, wording or layout.

For pre-testing the questionnaire of the EU GBV against women and men survey, split sample test may be conducted using, for example, different sequence of the violence screening (partner and non-partner) or different wording of the questions about sexual violence or different options for counting the number of episodes occurred. Split sample test can also be used for testing different interview modes.

SECTION B: FOCUS GROUP

Focus groups have a long history. Originally called focused interviews, had its origin in 1941 when the sociologist Robert Merton was invited by Paul Lazarsfeld to assist him in the evaluation of audience response to radio programs.

In the time since Merton's pioneering work[12], focus group have become an important research tool for applied social scientists such as those who work in program evaluation, marketing, public policy, advertising, and communication. Focus groups may be useful at virtually any point in a research program, but they are particularly useful for exploratory research, where rather little is known about the phenomenon of interest, to acquire more knowledge about the topic of interest and to clarify the goals of the study. As a result, focus group tend to be used very early in a research project and are often followed by other types of research that provides more quantifiable data from larger groups of respondents. Focus groups also have been proven useful following the analysis of large-scale, quantitative surveys. In this latter use the focus group facilitates interpretation of quantitative results and adds depth to the responses obtained in the more structured survey.

Among the more common uses of focus group are the following:

1. Obtaining general background information about a topic of interest;
2. Generating research hypotheses that can be submitted to further research and testing using more quantitative methods;
3. Stimulating new ideas and creative concepts;
4. Learning how respondents talk about the phenomenon of interest. This, in turn, may facilitate the design of questionnaires, survey instruments, or other research tools that might be employed in more quantitative research;
5. Pre-testing an available preliminary questionnaire
6. Interpreting previously obtained quantitative results.

Box 1- Advantages and disadvantages of the Focus Group[13]

Advantages	Disadvantages
· It is comparatively easier to drive or conduct	· It is not based on a natural atmosphere
· It allows to explore topics and to generate hypotheses	· The researcher has less control over the data that are generated
· It generates opportunity to collect data from the group interaction, which concentrates on the topic of the researcher's interest	· It is not possible to know if the interaction in group he/she contemplates or not the individual behaviour
· It has high "face validity" (data)	· The data analysis are more difficult to be done. The interaction of the group forms a social atmosphere and the comments should be interpreted inside of this context
· It has low cost in relation to other methods	· It demands interviewers carefully trained
· It gives speed in the supply of the results (in terms of evidence of the meeting of the group)	· It takes effort to assemble the groups
· It allows the researcher to increase the size of the sample of the qualitative studies	· The discussion should be conducted in an atmosphere that facilitates the dialogue

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[12] Merton, R. K., Kendall, P. (1946). The Focused Interview. *The American Journal of Sociology*, Vol. 51, No. 6 (May, 1946), pp. 541-557. The University of Chicago Press

[13] Based on Kruger, R. A. (1994). *Focus groups: the practical guide goes applied research.* Thousand Oaks: SAGE Publications, 2nd. Ed., 1994. Morgan, D. L. (1988). *Focus group as qualitative research (2nd ed).* A Sage University Paper

When designing or pre-testing a questionnaire, focus group can be useful to[14]:
- to detect sensitive topics and domains to check
- to identify what potential respondents know about the subject, how they structure the subject and what they think about it
- to find out if people understand the terms and how they define them
- to learn from the respondents what issues of the topic are of relevance for the respondents' point of view in order to get in good communication with the respondents in a future survey
- to determine the feasibility of conducting the survey
- to develop survey objectives or data requirements
- to determine data availability and record keeping practices
- to explore and define concepts
- to clarify reference periods
- to evaluate respondent understanding of terminology
- to evaluate alternative question wording and formats
- to understand respondent burden.

To develop the European Gender Based Violence Survey, the method was used during the first meeting of the Task Force in order to collect the national experiences, define the topics to be included in the survey as well as map the most important indicators will be measured with this survey.

Statistics Canada researchers used the focus group method in developing the family violence module introduced in the General Social Survey in 1999. The participants were recruited from the general population and they took part in two-steps procedure: a telephone interview followed a few days later by participation in a focus group. Focus groups were organized with general population, only with male respondents, only with elderly and only with ethnic minority background. The moderators of the focus groups also monitored the telephone interviews (with the full knowledge of the respondents) to understand better the experiences of the respondents. The main findings from the focus group showed that respondents were very sensitive against interviewers' tone of voice and that interviewer took the time to ask more sensitive questions. While some respondents indicated that the questions were about painful experiences, others welcomed the opportunity to provide information about their situations because they wanted to tell their story. However, almost all respondents accepted a national crime survey that collected information on spousal violence and senior abuse and felt that Statistics Canada as a federal government agency should be gathering these data.

Focus group, preferential witness meetings and in depth interviews has been used by the researchers of the Italian Institute of Statistics (ISTAT) while planning new surveys on sensitive topics such as, for example, the Violence against Women Survey (2005) the survey on Discrimination based on gender, ethnicity and sexual orientation (2009), the survey on Life conditions of foreign citizens (2011-2012). For the Violence against women survey, focus groups have been carried out also after the pilot study (see Box 2).

Box 2 – Planning the Italian Violence against Women Survey (2005)

Focus Groups in the survey design phase with the aim of:
- going more in depth and learning more about the phenomenon of violence against women;
- planning a robust methodological structure, from the questionnaire to the choose of the interviewing mode, from the recruitment of the interviewers to the planning of the training program and all along the data collection phase

7 Focus Groups were conducted with:
- Workers in shelters for women victims of violence (4 groups)
- Women victims of domestic violence (1 group)
- Women from the community (1 group)
- Interviewers who have already had experience in victimisation surveys (1 group)

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[14] Groves, R.M. *et al.*, (2004). *Survey Methodology.* John Wiley & Sons.

Soon after the pilot study with the aim of:
- Developing and improving the questionnaire and the strategies for contacting and interviewing the respondents

3 Focus Groups were conducted with :
- Interviewers who carried out the pilot survey (1 group)
- Workers in shelters for women victims of violence (2 groups)

Each focus group was conducted by two moderators (at least one psychologist) and was video or audio recorded and then transcribed verbatim. According to the group, different questions were asked, with the aim of going more in depth about:
- questionnaire contents, structure and wording
- procedural methods

Some results about questionnaire contents
- What is domestic violence (especially psychological violence)
- Different expressions of violence (economic, psychological, physical and sexual violence)
- How women deal with violence, what is their perception
- Early precursors of DV, the violence cycle
- Risk factors
- Consequences of violence
- The way out of violence
- Prejudices and stereotypes about violence against women

Some results about wording, sequencing and procedures:
- Choose female interviewers
- Ask gradually about violence
  - *Ask questions about everyday life, leisure time, social networks, health conditions, before asking questions about violence*
  - *Insert questions on physical and sexual violence by the partner after questions about partner's background and psychological violence*
- No name it 'VIOLENCE'
- Use screening procedure which helps to focus the attention on both physical and sexual violence, on reference period and on all possible authors (partner and non-partners)
- Choose separated screening on violence by current and former partner.
- Use clear, simple wording. Avoid jargons

Basically, focus groups are interviews, but of 6-12 people at the same time in the same group.

Elements characterising FG are:

- the interactions of a small group of people
- the presence of one or more moderators
- the focus on a specific topic that researchers want to analyse in depth

Elements which could change are:

- homogeneous vs heterogeneous groups
- with or without incentives
- with structured or nonstructured interview

Types of Focus Group[15]

Group composition	- participants don't know each other and don't know the moderators
	- participants know each other and know the moderators
	- homogeneous group
	- heterogeneous group

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[15] Corrao, S. (2000). *Il focus group*, Franco Angeli, Milano.

Structuring degree	- self-managed groups (unstructured) - semistructured groups (with interview guide) - structured groups (with interview schedule)
Number of moderators	- 1 or 2: whenever FG is conducted by two moderators, one should have specific skills in the focus group process and the other should have expertise in the content area of the study or could have the role of non-participant or participant observer who takes notes and observes participants' non-verbal communication
Role of the moderator	- Negligible (only provides the topic for the discussion and the interactions rules) - Restricted (facilitates the discussion flow, promotes interchange and modulates conflict) - Directive (with a well structured interview guide …)
Length	- From 60 to 120 minutes maximum
Strategies to encourage participation	- Incentives (gadget, an honorarium, transportation, or light refreshments) - Raising awareness strategy - Recruitment of participants interested to the topic
Data collection strategies	- Notes by a non participant or participant observer - Audio-recording - Video-recording with or without a one way mirror
Strategies of analysis	- Content analysis - Matrix based on the study objectives and on the questions asked

Variants of focus groups include:

- Two-way focus group: one focus group watches another focus group and discusses the observed interactions and conclusion
- Dual moderator focus group: one moderator ensures the session progresses smoothly, while another ensures that all the topics are covered
- Duelling moderator focus group (fencing-moderator): two moderators deliberately take opposite sides on the issue under discussion
- Respondent moderator focus group: one and only one of the respondents is asked to act as the moderator temporarily
- Client participant focus groups: one or more client representatives participate in the discussion, either covertly or overtly
- Mini focus groups: groups are composed of four or five members rather than 6 to 12
- Teleconference focus groups: telephone network is used
- Online focus groups - computers connected via the internet are used

Planning a Focus Group

This paragraph presents, in more detail, characteristics to be considered in the planning phase of the Focus Group.

Numbers of FG: a minimum of 4 to 5. The marketing researchers, for example, vary the number of groups as a function of which meetings are or are not producing new ideas. If the moderator clearly can predict what will be said in the next group, then the research is concluded. This usually happens after the third or fourth session. More in general, FG can be iterative until the researchers reach their objectives, for example, until the final version of the questionnaire is generated.

*Numbers of participants***:** 8 to 12. Smaller groups may be dominated by one or two members, while larger groups are difficult to manage and inhibit participation by all members of the group.

Sample selection: who will participate in the study depends on the purpose of the research. People are usually segmented by demographic factors such as geographical location, age, size of the family, status, gender, etc. The choice between homogeneous or heterogeneous groups is somehow a function of the need to maintain a reasonable homogeneity inside the group in order to encourage discussion. The most general advice on that is each participant should have something to say on the topic and to feel comfortable speaking with the others even if this does not mean that participants should have the same perspective on the topic.

Length of FG: one to two hours

Number of moderators: 1 or 2.

Moderator role and characteristics: the moderator is the key to assuring that a group discussion goes smoothly. The focus group moderator should be well trained in group dynamics and interview skills. Depending on the intent of the research the moderator may be more or less directive with respect to the discussion. It is important to recognize that the amount of direction provided by the interviewer does influence the types and quality of the data obtained from the group. "*More structured groups answer to the researcher's questions; less structured groups help to reveal the perspective of the group participants*"[16]

Facilities: although FG can be conducted in a variety of sites ranging from home to offices and even by conference telephone, it is most common for focus group session to be held in facilities designed especially for focus group interviewing. Such facilities provide one- way mirrors and viewing rooms where observers unobtrusively may observe the interview in progress.

Focus group facilities include equipment for audio or video taping of the interview and perhaps a small transmitter for the moderator to wear (a "bug in the ear") so that observers may have input into the interviews.

Developing the Interview: essential to the FG is a careful development of an interview guide reflecting the research questions. It is important to begin with broad, open-ended questions and with low emotional intensity issues and then move to high emotional intensity issues. It is also important to have probes ready to prompt the focus group participants for further explanation or depth on the topics. The guide can represent just a map or can be a semistructured guide or a structured guide, it depends on the purposes of the study and on the researchers objectives.

Box 3 - Steps in the design and use of focus group[17]

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Preparing for the Session
1. Identify the major objective of the meeting.
2. Plan the session (see below).
3. Call potential members to invite them to the meeting. Send them a follow-up invitation with a proposed agenda, session time and list of questions the group will discuss.
4. Plan to provide a copy of the report from the session to each member and let them know you will do this.
5. About three days before the session, call each member to remind them to attend.

Developing Questions
1. Carefully develop five to six questions - Session should last about 1.5 hours -- in this time, one can ask at most five or six questions.
2. Always first ask yourself what problem or need will be addressed by the information gathered during the session, e.g., examine if a new service or idea will work, further understand how a program is failing, etc.
3. Focus groups are basically multiple interviews. Therefore, many of the same guidelines for conducting focus groups are similar to conducting interviews.

Planning the Session
1. **Scheduling** - Plan meetings to be one to 1.5 hours long
2. **Setting and Refreshments** - Hold sessions in a conference room, or other setting with adequate air flow and lighting. Configure chairs so that all members can see each other. Provide name tags for members, as well. Provide refreshments.
3. **Ground Rules** - It's critical that all members participate as much as possible, yet the session move along

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[16] Morgan, D. L. (1988). *Focus group as qualitative research (2nd ed).* A Sage University Paper
[17] Carter McNamara, MBA, PhD, Authenticity Consulting, LLC.

while generating useful information. Because the session is often a one-time occurrence, it's useful to have a few, short ground rules that sustain participation, yet do so with focus. Consider the following three ground rules: a) keep focused, b) maintain momentum and c) get closure on questions.

4. **Agenda** - Consider the following agenda: welcome, review of agenda, review of goal of the meeting, review of ground rules, introductions, questions and answers, wrap up.
5. **Membership** - Focus groups are usually conducted with 6-12 members who can have some similar nature, e.g., similar age group, status in a program, etc. Select members who are likely to be participative and reflective. Attempt to select members who don't know each other**.**
6. **Plan to record the session with either an audio or audio-video recorder.** Don't count on your memory. If this isn't practical, involve a co-facilitator who is there to take notes.

Facilitating the Session

1. Major goal of facilitation is collecting useful information to meet goal of meeting.
2. Introduce yourself and the co-facilitator, if used.
3. Explain the means to record the session.
4. Carry out the agenda - (See "agenda" above).
5. Carefully word each question before that question is addressed by the group. Allow the group a few minutes for each member to carefully record their answers. Then, facilitate discussion around the answers to each question, one at a time.
6. After each question is answered, carefully reflect back a summary of what you heard (the note taker may do this).
7. Ensure even participation. If one or two people are dominating the meeting, then call on others. Consider using a round- table approach, including going in one direction around the table, giving each person a minute to answer the question. If the domination persists, note it to the group and ask for ideas about how the participation can be increased.
8. Closing the session - Tell members that they will receive a copy of the report generated from their answers, thank them for coming, and adjourn the meeting.

Immediately After Session

1. Make any notes on your written notes, e.g., to clarify any scratching, ensure pages are numbered, fill out any notes that don't make senses,
2. Write down any observations made during the session. For example, where did the session occur and when, what was the nature of participation in the group? Were there any surprises during the session? Did the tape recorder break?

Analysis of the data[18]

Analysis Baseline: different analysis can be carried out using the collected information - from simple narrative descriptions based on the notes taken during focus group discussion, to more complex analysis of record transcripts. The type of analysis depends, in addition to the time and resources available, to the research goals and how the results are going to be used. For example, if the goal of a focus group is to get practical suggestions or ideas to be deepen later, a minimum level of analysis can be sufficient such as to compare impressions among participants; if, however, important decisions will be made on the basis of the results, a more rigorous analysis is needed. In this latter case before embarking on the analysis all the focus group need to be transcribed verbatim.

Analysis steps: in order to analysis the data collected during the focus group, it is necessary to:

a) to build a reading/analysis grid to be applied to the entire material (grid construction is facilitated by a semi-structured focus group);

b) identify the range of opinions that emerged.

You can also apply content analysis techniques to the full transcript of the discussion. Computer assisted content analysis techniques are now available and can facilitate the task.

Strategies of analysis:

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[18] Corrao, S. (2000). *Il focus group*, Franco Angeli, Milano.

a. classical Text Analysis Techniques;
b. encoding of the topics touched and transcribing the code map;
c. build a summary grid;
d. make comparisons between groups

SECTION C: EXPERTS REVIEW

Expert reviews are frequently used as a method of evaluating draft questionnaires or subsets of questions, either alone or in combination with other pre-testing methods. This is a relatively quick and inexpensive method (Presser S. & Blair J., 1994; Biemer P. & Lyberg L., 2003), where by experts identify potential sources of non-sample error and suggest ways to minimize/reduce potential errors. In their review, experts have to: (a) ensure that the questionnaire collects the information needed to meet the analytic objectives of the survey and (b) check the design and the questions themselves (Eurostat, 2006) identify ingany question problems, breakdowns in the question-answer process, and other potential measurement errors in survey reports that may undermine data quality (Olson K., 2010).

Expert reviews are usually conducted at the initial stage of the questionnaire development process, before the survey is either pretested or fielded, nevertheless they can also be done at later stages. Through the consultation with experts, the questionnaire designer receives feedback, which can help stimulate his own critical thinking, and can help generate hypotheses to be used with other testing methods; it is therefore recommended to adopt this method at a stage when suggested changes can still be enacted and an appropriate well-focused discussion with experts can be organized (Campanelli P., 2008). Willis (Willis G., 2005) stressed the importance to conduct the expert reviews early in the questionnaire development process so as to be able to identify the most obvious errors or pitfalls in a questionnaire right away and send researchers "back to the drawing board", if needed.

Once the issues have been addressed, the revised questionnaire may undergo another review process until the designer is satisfied that all the major problems raised by expert reviews have been solved or it may be subjected also to another pre-test method.

The reviewers should be experienced survey methodologists with knowledge of the theoretical or practical aspects of questionnaire design, fieldwork issues, and of data processing as well as 'experts' on subject matters and interviewers. The number of expert reviewers tends to be small, from two or three to over 20 experts, depending on several factors such as complexity of the topic under investigation, level of expertise among question designers, time and resources available.

Experts can be consulted independently or brought together in the form of an expert panel. Although logistically difficult to form, an expert panel is preferable in that it allows differences in recommendations to be debated.

As Grove (Grove R. at. al. 2009) underlined, all survey questions must meet three distinct standards - content, cognitive and usability –whose fulfilment can be assessed by expert reviews. Therefore, these generally focus specifically on: terms and wording of questions; structure of questions; order of questions; skip patterns/flow of the questionnaire; response alternatives; instructions to interviewers on questionnaire administration; confusing layout; typographical errors (Grove et. al., 2009; Biemer P. and Lyberg L., 2003).

In their appraisals, the experts can either rely exclusively on their own judgment, making informal assessments that typically yield open-ended comments about the survey items to be evaluated, or be guided by formal appraisal systems that provide a detailed set of potential problem codes (Willis G. et al. 1999).

Even though an informal review can be effective in identifying questionnaire problems, there is still a high risk of missing some important problems. Therefore, it is common practice to adopt a structured questionnaire review approach. This type of review provides more comprehensive data as each question is examined against a set of criteria coded to indicate the type of problem raised by each question; this helps the reviewer to identify potential problems in the wording or structure of questions that may lead to difficulties in question administration, interpretation, or cognitive processing (Biemer& Lyberg, 2003).

For example, Lessler and Forsyth (1996) developed a list of questions that identify more than 25 types of problems. This structured coding scheme (Questionnaire Appraisal Coding System)consists of seven main categories: (1) problems with reading, (2) problems with instructions, (3) problems with item clarity, (4) problems with assumptions, (5) problems with knowledge/memory, (6) problems with sensitivity/bias and (7) problems with response categories (see Biemer P. and Lyberg, L., 2003; Eurostat, 2006).

For each question, experts fill in the coding scheme and assign the relevant standardized coding category; then, the draft questionnaire is sent to the researcher. In completing the appraisal, the reviewer may also

record other comments on the item that do not fall under existing coding categories. The time needed by the expert to code the whole questionnaire varies depending on the complexity of the questionnaire itself.

There are several other checklists available generally called questionnaire appraisal system.

When expert reviews are organized as group sessions, the discussion is chaired by a moderator and for each question the debate may either follow a structured pattern using a standardized coding scheme, to be filled in before the meeting, or adopt a less structured, free-form approach without a standardized coding list (Eurostat, 2006).

However, even in the latter case when reviewers do not fill in any checklists, the moderator is asked to steer the discussion towards topics like wording, terms, skip instructions, instructions, layout, comprehension etc. and after the discussion, a report on results should be written.

It is recommended that the questionnaire designer also participate in the group discussion but with a receptive mindset, avoiding any aggressive or defensive behaviour; it is common practice to audio or video record the discussion in order to be able to double-check the minutes taken by the appointed note-taker. A detailed report on discussion results must follow.

The draft questionnaire and other information must be sent to the expert allowing for adequate time for him/her to respond (if consulted independently) or prepare for the expert panel. In particular, the questionnaire must be accompanied by a short note that clearly states the key aims and objectives of the survey, draws attention to the questionnaire design problems and issues on which advice is sought. Other relevant information includes any immovable constraints regarding the scope and design of the questionnaire (e.g., mode of administration, length, questions inserted for comparability with other surveys, etc.) (Campanelli P., 2008; Blake M. 2015) and the coding scheme if relevant.

The expert reviews area quick pre-testing method, cost and time effective, that aims to correct or remove obvious problems in the questionnaire without the respondent's involvement. Nevertheless, the lack of respondent input can be tricky because respondents' backgrounds and life circumstances vary a great deal, and it is difficult for experts to anticipate and understand all of these variables without information on how respondents will interpret and respond to the questions. Experts may differ regarding the number and types of problems they identify in the survey questions as well as in their change recommendations; problems identified may not occur in the actual survey or not in a way that would compromise survey data (Blake M., 2015).The use of a coding scheme is recommended but it requires experts in questionnaire design who know how and when to apply a particular code. Sometimes less experienced reviewers will identify issues in the questionnaire that may not have very serious consequences for data quality, but expert reviewers are not exempt from this risk either (BiemerP. & Lyberg L., 2003).Furthermore, when a group session with experts is planned, finding a meeting time that suits everybody is often challenging, and even though individual feedbacks can always be collected separately, this means forfeiting the added value of the discussion.

Questionnaire Appraisal Systems

Back in 1992, on the basis of question-and-answer process and informed through cognitive interviewing results, Lessler, Forsythand Hubbard (1992) developed a coding scheme for expert appraisal (Questionnaire Appraisal Coding System). This was very exhaustive[19] in indicating specific problem within a question; nevertheless the scheme does not indicate what the cause of the problem and how the question should be improved. It was also found by practitioners too detailed and extensive for effective and efficient use in assessing question errors (especially for long questionnaires used in social surveys).

Alternatives coding schemes have been proposed.

Willis and Lesser (1999) proposed another shorter coding scheme "Question Appraisal System (QAS)", based on several previous questions appraisal systems and, in part, from a method developed to examine and classify the cognitive processes inherent in the question-answering process (Lessler and Forsyth, 1996).The expert is expected to examine each question by considering specific categories of question characteristics step by step, at each step, to decide whether the question exhibits features that are likely to cause problems. In completing the appraisal, the expert is expected not only to indicate whether a problem occurs but also the

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[19]See Forsyth, Lessler and Hubbard (1992) for details.

reason if it occurs. The expert in examining the question should follow some steps and indicate type of problems, as presented in below table:

The Question Appraisal System (QAS-2009)		
STEP 1 READING: Determine whether it is difficult for the interviewers to read the question uniformly to all respondents		
1a. **WHAT TO READ**: Interviewer may have difficulty determining what *parts* of the question should be read.	Yes	No
1b. **MISSING INFORMATION**: Information the interviewer needs to administer the question is *not* contained in the question.	Yes	No
1c. **HOW TO READ**: Question is *not* fully scripted and therefore difficult to read.	Yes	No
STEP 2 INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the *respondent's* point of view.		
2a. **CONFLICTING OR INACCURATE INSTRUCTIONS**, introductions, or explanations	Yes	No
2b. **COMPLICATED INSTRUCTIONS**, introductions, or explanations.	Yes	No
STEP 3 CLARITY: Identify problems related to communicating the *intent or meaning* of the question to the respondent.		
3a. **WORDING**: Question is lengthy, awkward, ungrammatical, or contains complicated syntax.	Yes	No
3b. **TECHNICAL TERM(S)** are undefined, unclear, or complex.	Yes	No
3c. **VAGUE:** There are multiple ways to interpret the question or to decide what is to be included or excluded.	Yes	No
3d. **REFERENCE PERIODS** are missing, not well specified, or in conflict.	Yes	No
STEP 4 ASSUMPTIONS: Determine whether there are problems with assumptions made or the underlying logic.		
4a. **INAPPROPRIATE ASSUMPTIONS** are made about the respondent or about his/her living situation.	Yes	No
4b. **ASSUMES CONSTANT BEHAVIOR** or experience for situations that vary.	Yes	No
4c. **DOUBLE-BARRELED**: Contains more than one implicit question.	Yes	No
STEP 5 KNOWLEDGE/MEMORY: Check whether respondents are likely to *not know* or have trouble *remembering* information.		
5a. **KNOWLEDGE** may not exist: Respondent is unlikely to *know* the answer to a factual question.	Yes	No
5b. **ATTITUDE** may not exist: Respondent is unlikely to have formed the attitude being asked about.	Yes	No

5c. **RECALL** failure: Respondent may not *remember* the information asked for.	Yes	No
5d. **COMPUTATION** problem: The question requires a difficult mental calculation.	Yes	No
STEP 6 SENSITIVITY/BIAS: **Assess questions for sensitive nature or wording, and for bias.**		
6a. **SENSITIVE CONTENT** (general): The question asks about a topic that is embarrassing, very private, or that involves illegal behavior.	Yes	No
6b. **SENSITIVE WORDING** (specific): Given that the general topic is sensitive, the wording should be improved to minimize sensitivity.	Yes	No
6c. **SOCIALLY ACCEPTABLE** response is implied by the question.	Yes	No
STEP 7 RESPONSE CATEGORIES: **Assess the adequacy of the range of responses to be recorded.**		
7a. **OPEN-ENDED QUESTION** that is inappropriate or difficult.	Yes	No
7b. **MISMATCH** between question and response categories.	Yes	No
7c. **TECHNICAL TERM(S)** are undefined, unclear, or complex.	Yes	No
7d. **VAGUE** response categories are subject to multiple interpretations.	Yes	No
7e. **OVERLAPPING** response categories.	Yes	No
7f. **MISSING** eligible responses in response categories.	Yes	No
7g. **ILLOGICAL ORDER** of response categories.	Yes	No
STEP 8 OTHER PROBLEMS: **Look for problems not identified in Steps 1–7.**		
8. Other problems not previously identified.	Yes	No

For more information see Questionnaire Appraisal System QAS-99 Research Triangle Institute

To conclude, using the QAS, experts are expected to give well-structured feedback which allows to code the problems and find solutions. When assessing the questions, experts are asked to think that respondents vary by age and different levels of education or income and life experience and that may affect the understanding the question. For example, if the question focuses on particular health problem, respondents having and not having the problem should be able to give the response (Willis G. & Lesser J., 1999).

Another coding scheme is the one developed by staff at Statistics Netherlands Condensed Expert Questionnaire Appraisal Coding System (Snijkers G., 2002):

Example:

Problems in questionnaire with regard to:		
Comprehension of question	Information processing	Reporting

o Difficult wording =>	o Retrieval task =>	o Difficult wording in answering categories =>
o Unclear wording =>	o Long period of recall	o Unclear wording =>
o Difficult syntax =>	o Much information needed to answer question	o Boundary problems =>
o Long question with list of items	o Proxy reporting	o Overlapping categories =>
o Double-barrelled questions	o Judgement task =>	o Missing categories =>
o Double-negative questions	o Difficult task (complex calculation, estimation) =>	o ….
o Question/answer mismatch	o Social desirability	
o Reference set (perspective) change =>	o ….	
o Response task =>		
o ….		

=> Indicates a description of problem in question, and suggestions for improvement.

Only most common possible errors have been listed in the table. Experts were expected to code the possible problems as well as to refer to the parts of the questions that are problematic according to their opinion and additionally to present suggestions for improvements.

The Use of the Questionnaire Appraisal Systems in pre-testing the GBV questionnaire.

The national experts could be asked to review the GBV questionnaire and give their opinion and suggestions/recommendations based on open form or based on structured form of evaluation (recommended). The feedback could be individual or could be filled during the follow-up discussion including all experts after individual reviewing in order to present common feedback and make sure that problems identified are common.

It is important to: a) properly select the expert to be invited, b) selected the select the questions to be appraisal, 3) prepare a short introductory note that clearly states the key aims and objectives of the survey and questions, target population and other relevant information and 4) a code scheme.

Here an example of code scheme for GBV survey

Question:			
Assess following:	Might be a problem?	If yes:	
		Why?	How to improve?
1. Difficult wording (difficult to read, too long, not clear what needs to be read out, etc.)	1 No 2 Yes ⇨		

2. Not clear (too technical text, meaning not understandable, explaining missing, reference period not clear, etc.)	1 No 2 Yes ⇨		
3. Problems with response categories (mismatch, missing, overlapping, unclear, illogical order, etc.)	1 No 2 Yes ⇨		
4. Respondent might have knowledge/memory problems (knowledge might not exist, recall failure, computation problems, etc.)	1 No 2 Yes ⇨		
5. Other problems	1 No 2 Yes ⇨		
6 …			

National experts should be asked to think that respondents are in different age groups and with different life experience. National experts should also think how respondents could understand the question and does it match with the expectations of the questions. Finally, the national experts are expected to describe clearly why they see that possible problem and propose possible solutions and recommendations.

It is recommended to select the list of questions from the questionnaire to be evaluated by national experts and provide national experts with some examples how to assess the questions and fill in the appraisal form.

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SECTION D: COGNITIVE INTERVIEW
Introduction

Among the pre-testing techniques aimed at improving the survey instrument and consequently data quality, cognitive interviewing has emerged as one of the prominent pre-testing methods for identifying and correcting problems in survey questions. Indeed, more than any other question evaluation method, cognitive interviewing offers a detailed depiction of meanings and processes used by respondents to answer questions, providing a wide range of information to the researcher about sources of response error. In particular, it can identify sources of response error that the interviewer and the survey practitioner usually fail to see, which have to be eliminated/reduced to ensure accuracy of survey instruments and high quality of data collected.

By cognitive interviewing it is possible to determine whether the wording of a specific question fully conveys its meaning and to quickly identify problems such as redundancy, missing skip instructions and awkward wording.

The origins of cognitive interviewing are rooted at the intersection of survey methodology and cognitive psychology; in particular the interest for cognitive testing originated from an interdisciplinary seminar on Cognitive Aspects of Survey Methodology (CASM), when cognitive psychologists and survey researchers met to study the cognitive factors that may influence survey responses and the ways in which survey questions should be designed to take such factors into account.

The CASM movement not only brought attention to the issue of measurement error, but it also established the idea that individual processes, especially respondents' thought processes, must be understood to assess the validity and potential sources of error (Schwarz N., 2007).

Cognitive interviewing relies on the cognitive model introduced by Tourangeau (1984). This model explains that the "question answering process" is divided into four stages: comprehension of the question, retrieval from memory of relevant information, judgement/estimation process and response process. As the cognitive process leading to question answering is a universal process that occurs in the mind of each and every respondent, each respondent, regardless of demographic or personal background, will go through those four steps to formulate his/her answer.

The CASM approach relies on the assumption that, when a survey question fails, this is due to problems occurring at one (or more) of these stages that cause the incorrect answers. Thus, the main purpose of a cognitive test is to identify potential problems that may occur at each stage of the answering process; and actually listing the goals of the cognitive test for each stage, as in the following table, may also prove useful:

Cognitive stage	Definition	Aims of Cognitive test / Possible problems to be detected
1. Comprehension	Respondents understand and interpret the question	To test whether respondents understand the question as intended by the researcher who designed it (what does the respondent believe the question is asking and what do specific words and phrases in the question mean)
		Unknown terms, ambiguous concepts, long and complex questions.
2. Retrieval	Respondents search memory for relevant information to answer	To establish whether the information needed can actually be recalled by the respondents (recall ability of information and what type of information does the respondent need to recall), and to check the strategy used by respondents to retrieve information.
		Recall difficulty, no prior knowledge or experience, perceived irrelevance of topic

3. *Judgement/ Estimation*	Respondents evaluate and/ or estimate while deciding on an answer	To evaluate how much mental effort is dedicated by respondents to answering the question and to assess their degree of interest in the subject of the survey. To check whether the question wording could lead to more "socially desirable" answers. To identify questions that could cause embarrassment or defensive behaviors.
		Biased or sensitive question, estimation difficulty, impact of social deliverability on judgement.
4. Responses process	Respondents provide information in the requested format	To test whether respondents correctly interpret the answer categories provided, and whether such categories match those spontaneously generated by respondents. In particular, the presence of incomplete and/ or ambiguous response options needs to be verified.
		Incomplete response options, response options don't fit with understanding or judgement of question, response influenced by social desirability, unwilling to answer.

To recap, the cognitive interview lead to improve data collection instrument by providing evidence on whether respondents understand questions in the intended way, are able and willing to provide the requested information and an respond using the answer options provided.

The Cognitive interviewing has also emerged as a key qualitative method for the pre-testing and evaluation of survey questionnaire to be used in in cross-national researches. It is recognized that individual life circumstances and personal perspectives (clearly influenced by socio-economic status, level of education, age, etc.) but also social-cultural factors country specific determine how respondents interpret and elaborate survey questions. How a respondent goes about the four stages of the question-answer process (comprehension, recall, judgment and response) is informed by the socio-cultural context in which he/she lives. Through a comparative analysis of cognitive interviews it is possible to identify patterns of interpretation and patterns of error across groups and countries due to these types of socio-cultural differences.

 "The ultimate goal of cognitive interviewing studies is to better understand question performance. Again, this includes not only identifying respondent difficulties, but also identifying the interpretative value of a question and the way in which that question may or may not be consistent with its intent – across particular groups and in different contexts" (Miller K., 2014 page 4).

Furthermore, the cognitive interview is used in cross-national researcher because it is able to not only to uncover unexpected and undesired patterns of interpretation but also can "uncover translation issues that might go unnoticed in other translation assessment processes such as expert reviews" (Schoua-Glusberg A. & Villar A., 2014, page 66). In brief, the cognitive interviews is useful as pre-testing method for a cross-national survey questionnaire because it can reveal translation problems, sources questions error and problems related to cultural differences.

Cognitive interviewing techniques

Beatty (2004, page 45) defines "cognitive interviewing is the practice of administering a survey questionnaire while collecting additional verbal information about the survey responses; this additional information is used to evaluate the quality of the response or to help determine whether the question is generating the sort of information that its author intends". This definition describes the most common application of this pre-testing technique: in-depth interviews with a small sample of respondents in which respondents first answer a draft survey question and then provide textual information on the cognitive process behind their answer. In particular, respondents are asked to describe how they came upon their

answer and their rationale, and this information is then used to understand whether the questions will actually produce the information they were meant to provide.

The method has been in use for more than 25 years, but although there has been debate over interviewing practices (e.g. Beatty P., 2004; Conrad F. & Blair J., 2004, 2009; Beatty & Willis, 2007, Willis G., 2005; DeMaio T. & Rothgeb B., 1996, DeMaio T., Rothgeb B., & Hess J., 1998; Willis G., 2009; Miller K., 2014), its implementation modalities can vary from organization to organization, and even among researchers in the same organization, depending on several factors such as aims of the cognitive test, developmental stage of the questionnaire, time and resource constraints.

Although the important role played by cognitive interviewing in improving survey questions is generally recognised, a full consensus on best practices or a set of standards for conducting a cognitive test is still lacking. For a long time, there have been two opposed paradigms that common practice is now starting to integrate.

In the first paradigm, called "think aloud", respondents are encouraged to verbalize their thoughts as much as possible while answering questions. In particular, *concurrent think aloud* means that the respondent is asked to articulate all his/her thoughts immediately after the question is posed until he/she comes up with the answer; while in the *retrospective think aloud* the respondent explains how he/she came up with the answer either after answering each question or after completing a session of the questionnaire or even the entire interview - under conditions that are similar to the actual survey.

On one hand, pronounced disadvantages of the *concurrent think aloud* technique are its high respondent burden, its disruption of the normal flow of the interview and the fact that expressing one's thoughts aloud might alter the cognitive process under study. On the other hand, while the *retrospective think aloud* technique is less disruptive to the flow of the interview; detailed information on the various steps of the answering process might be lost because of the time gap between the response process and the verbal report. (Eurostat, 2006)

In the think aloud approach the role of the interviewer is, generally, reduced to a minimum, even though the "integrative approach" provides for a more active interrelation to collect detailed information on the thought process generating the answer and to better capture the pattern of interpretation.

The other paradigm, usually called "verbal probes", provides for a more proactive role of the interviewer, whose task is to ask specific follow-up questions. In particular, after the interviewer asks the survey question, and the subject answers, the interviewer then enquires about additional specific information relevant to the question, or to the specific answer given. In general, the interviewer "probes" further into the basis for the response.

Probes can be categorized in different ways. Either they are grouped according to the time they are asked (concurrent vs retrospective) or to the nature of probe construction (standardized probes vs. spontaneous or emergent probes) or to the conditions for probe administration (proactive vs. reactive probes) or to their aim (general vs specific) and according with the phases of the cognitive answer process (Comprehension, Retrieval. Judgement, Response). However, there is no sharp distinction between the different specific objectives of each of them (Eurostat, 2006).

Example of probes can be found in the appendix A.

Both paradigms share the same goal: to generate verbal information that is normally unseen in a survey interview, in order to assess how well the questions are meeting their objectives, and both have their pros and contras (Beatty P. & Willis G., 2007).

According to Willis (2005; pp. 53-57) the advantages and disadvantages of the two techniques are the following:

Advantages of the think-aloud technique:

- *Freedom from interviewer-imposed bias*: Because the interviewer contributes little other than the reading of the survey question, except to occasionally ask what the subject is thinking, he or she interjects little that may serve to bias the subject's responses.

- *Minimal interviewer training requirements:* Again, because the interviewer mainly reads survey questions, and then listens to the respondent talk, little training or special expertise is usually necessary.

- *Open-ended format*: Because the subject's verbalization is guided only minimally, he or she may provide information that is unanticipated by the interviewer. Therefore, think-aloud interviewing is especially valuable when the subject is outgoing, articulate, and has had significant experience with the topics covered by the survey questions.

Disadvantages of the think-aloud technique:

- *Need for subject training:* Because thinking-aloud is somewhat unusual for most people, the technique typically requires a non-trivial amount of preliminary training of lab subjects, in order to elicit a sufficient amount of think-aloud behavior.

- *Subject resistance*: Even given training in the activity, many individuals are not proficient at the think-aloud activity. In particular, they tend to simply answer the questions that are asked, without further elaboration.

- *Burden on subject*: Related to the point above, the think-aloud activity places the main burden on the subject.

- *Tendency for the subject to stray from the task*: Under think-aloud, the subject controls the nature of much of the elaborative discussion. Therefore, it is very easy for a "free associating" subject to wander completely off-track, and to spend a significant amount of time on one question, often delving into irrelevant areas, so that the interviewer must struggle to "bring the subject back." In general, the think-aloud technique results in relatively few survey questions being tested within a particular amount of time, relative to alternative approaches.

- *Bias in subject information processing*: By its nature, thinking-aloud forces subjects to think. As such, subjects may invest a considerable amount of mental effort into processing the survey questions, relative to what they do when simply answering the questions. Therefore, it is very possible that the activities associated with think-aloud speech may serve to burden or contaminate the cognitive processes used in answering the question.

Advantages of the Verbal Probing technique:

- *Control of the interview*: The use of targeted probing to guide the subject tailors the interchange in a way that is controlled mainly by the interviewer. This practice avoids a good deal of discussion that may be irrelevant and non-productive. Further, the interviewer can focus on particular areas that appear to be relevant as potential sources of response error.

- *Ease of training of the subject*. It is fairly easy to induce subjects to answer probe questions, as these probes often do not differ fundamentally from the survey question they are otherwise answering. In fact, subjects will sometimes begin to expect probes, and to offer their own spontaneous thoughts and critiques, so that the interview comes to resemble a think-aloud.

Disadvantages of probing techniques:

- *Artificiality*. Occasionally, the criticism is made that the validity of verbal probing techniques is suspect, because the interjection of probes by interviewers may produce a situation that is not a meaningful analog to the usual survey interview, in which the interviewer simply administers questions, and the respondent answers them. However, note that the verbal probing technique is certainly no more unrealistic than the alternative of thinking-aloud. Further, this criticism may also not be particularly relevant; the basic purpose of the pretest cognitive interview is very different than that of the fielded interview (the former analyzes questions, the latter collects data). Alternatively, one might consider making use of retrospective probing.

- *Potential for Bias*. A related criticism is that the use of probes may lead the respondent to particular types of responses. This is of course possible, but can be minimized through the careful selection of "non-leading" probing techniques that minimize bias. In other words, probes should be characterized by unbiased phrasing, in the same manner that survey questions are intended to.

It is generally advised to develop a cognitive interviewing technique that combines think-aloud with verbal probing considering the aims of the cognitive test as well as the ability of the respondent to think aloud. A hybrid between the two approaches is a practical solution that seeks to maximize the autonomous flow of thought of respondents on questions without hesitating to probe when it is deemed appropriate to collect the information needed (e.g. DeMaio T., Rothgeb B., & Hess J., 1998; Beatty P.,2004; Willis G., 2005; Beatty P. & Willis G.,2007; d'Ardenne J., 2015).

The Cognitive interviewing has also emerged as a key qualitative method for the pre-testing and evaluation of survey questionnaire to be used in in cross-national researches. It is recognized that individual life circumstances and personal perspectives (clearly influenced by socio-economic status, level of education, age, etc.) but also social-cultural factors country specific determine how respondents interpret and elaborate survey questions.

How a respondent goes about the four stages of the question-answer process (comprehension, recall, judgment and response) is informed by the socio-cultural context in which he/she lives.

Through a comparative analysis of cognitive interviews it is possible to identify patterns of interpretation and patterns of error across groups and countries due to these types of socio-cultural differences.

 "The ultimate goal of cognitive interviewing studies is to better understand question performance. Again, this includes not only identifying respondent difficulties, but also identifying the interpretative value of a question and the way in which that question may or may not be consistent with its intent – across particular groups and in different contexts" (Miller K., 2014 page 4).

Furthermore, the cognitive interview is used in cross-national researcher because it is able to not only to uncover unexpected and undesired patterns of interpretation but also can "uncover translation issues that might go unnoticed in other translation assessment processes such as expert reviews". (Schoua-Glusberg A. & Villar A., 2014, page 66).

To recap, the cognitive interviews is useful as pre-testing method for a cross-national survey questionnaire because it can reveal *translation problems, sources questions error and problems related to cultural differences.*

Planning a Cognitive interviewing project

In order to test a questionnaire or few questions by cognitive interviewing, several factors should be taken into account, such as the level of development of the questionnaire/questions, the time and financial resources to be had, the possibility to rely on expert or non-expert cognitive interviewers and how many are available, the type of persons to be included as sample of survey target population, the use of other pre-test methods and possibility to conduct more than one round of cognitive interviews, where the cognitive interviews will be conducted, what documentation must be prepared, and some ethical issues.

In other words, it is necessary to design and plan the cognitive test in all its methodological and logistical aspects related to:

- Sampling and recruitment of respondents
- Development of the interview protocol
- Selection and training of the interviewers
- Conducting of cognitive interviews
- Data management, Analysis and Interpretation
- Writing the Cognitive Test Report.

How long it will take to implement a cognitive test project depends on a number of factors, including: ease of recruitment of the respondents, anticipated number of rounds of testing, number of interviews to be achieved in one or more rounds, number of interviewers and, of course, number of questions being tested. Nevertheless, the main factor is the actual available time, because the deadline by which the final version of the tested questionnaire must be available is the main time constraint.

Sampling and recruitment of respondents

Regarding the sample, two main issues need to be addressed: sample characteristics and sample size.

Cognitive Testing is a qualitative method where in-depth interviews are conducted paying explicit attention to the mental processes respondents use to answer survey questions. The interviewer is not interested in the answer itself but in the process that leads the respondent to give the answer; therefore the sample of the respondents will be selected using a non-probability sampling technique of the *purposive* type.

It is important to clearly define the sample selection criteria to ensure that it includes those particular types of people who "represent" the characteristics of interest as relates to the research objectives. Indeed, the characteristics or criteria chosen to purposively select on are important for two reasons: a) they ensure that all key characteristics of relevance to the way the questions could be interpreted and answered by survey's target population are covered; b) they ensure diversity within the sample so that differences in interpretation can be explored (Collins D. & Gray M., 2015).

The participants to be included in the sample have to reflect the target population for which the questions are designed as well as those individuals, in this population, who will most likely experience or process questions in a variety of ways. Therefore, it is important to select respondents with the most diverse socio-demographic characteristics and living in different territorial areas to increase the variability of contexts and thus the problems that may arise (Miller K., 2002). Furthermore, respondents should be chosen according to various skip patterns and topics in the questionnaire. Only with this type of sample, will it be possible to identify the characteristics of the questions that could cause problems for respondents (Beatty P. & Willis G., 2007).

Recommended characteristics of the respondents and sample size depend on the complexity of the subject being studied, and therefore of the questions, the degree of progress of the testing tools as well as the ultimate goal of the study.

There is not a general agreement on the ideal number of interviews. Beatty and Willis (2007) report that the current practice is based on the assumption that a small sample (around 15 individuals) with relevant study features is sufficient to highlight the most critical issues. What is the right number of participants in cognitive interviewing "may be hard to specify beforehand as some problems may be easily identified, while others are harder to root out, perhaps because they are relatively subtle or affect only respondents with certain characteristics or experiences. Similarly, some response tasks may pose difficulties for most respondents, while others affect only a small proportion of respondents, but perhaps cause serious measurement error when they occur" (Blair J. et al., 2006). As the sample size increases, so does the likelihood of observing a given problem in a set of cognitive interviews or detecting more and diversified problems (Blair J. & Conrad F., 2011). The size of a purposive sample for cognitive test tends to be, anyway, small (10-20) because it is also influenced by time, budget and other resource constraints and if other pre-testing methods are anticipated. "The ultimate number of interviews is based not on a particular numerical goal, but on the ability to construct a theory that explains why respondents answer questions the way they do and, in the end, the construct (or set of constructs) that a particular question captures" (Willson S. & Miller K., 2014, page 19). Furthermore, as cognitive interviewing is expected to continue until no new problems or patters of interpretation are discovered, this may require more than one round of testing.

According to Willis (Willis G., 2005) the number of interviews recommended per testing round depends on the seriousness of the problems identified: if after some interviews it is clear that there are major problems to be rectified, then it is better to apply the modifications required and test the changes.

Cognitive testing is seen as an iterative process and Willis (Willis G., 2005) also suggests planning at least two rounds since "the nature of the CT rounds tends to change over the course of the development of a questionnaire. Early in the process, findings relate not only to particular question wordings but to more global issues, such as the appropriateness of the survey measurement of major concepts that is attempting to cover, while later rounds focus mainly on polishing specific question wordings".

Recruitment of respondents[20]

The recruitment process is often the most time-consuming part of the cognitive interviewing project.

It is important to address two main issues: who is responsible for the recruitment and which method will be used.

Based on time and resources available and other factors such as sample size and individual characteristics, a decision on who will be in charge of the recruitment process needs to be made. Some institutions have a specific Unit or Center in charge of all cognitive tests and its members are also responsible for recruiting potential respondents; others rely on the researchers or the cognitive interviewers to find the participants; still others tend to use ad-hoc external agencies.

There are a number of different methods to recruit people that can be used alone or in combination, based on the types and number of participants and the resources available.

The most common methods are:

- *Direct recruitment* approaches prospective participants face-to-face, by telephone, SMS or email.

It is possible to recruit people directly by going door to door or setting up stands in strategic locations where the types of persons sought to be interviewed are easily found. When approaching the prospective participants, share some basic information about what the study is about, why it is carried out, what is requested of the participant. If they are interested, few questions should be asked to establish their eligibility.

- *Snowballing or chain sampling* uses participants who have already been recruited and/or interviewed. These may help to identify other people they know who might fit the sampling criteria. This technique is useful when a quite specific, or even hidden, subset of population must be engaged. A research project information leaflet needs to be prepared for distribution to the additional participants, with contact details. Generally, this method is supplementary to the main recruitment method.
- *Using advertisements* includes putting up posters or leaflets on notice boards in places where prospective interviewees can be found or in other places where they may catch people's eyes; distributing leaflets or flyers; advertising in newspapers and newsletters. Advertisements can also be virtual, for example on websites, online forums or social media. This method is effective for recruiting very specific groups. It is important to keep in mind, however, that some people belonging to the same target group may not be reached by the particular media selected, therefore it is better to combine this with other recruitment methods.
- *Recruiting via organizations or groups* is helpful to recruit a specific target of people that are likely to be members or users of, or affiliated with particular groups, organizations or services. This may save time in the recruitment process but the individuals selected in this way may not reflect the variety of persons of this group.
- *Pre-existing sampling frames* can also be used. This may include previous research participants who have given consent to be re-contacted for future studies or people who sit on a research recruitment panel, and it can be a very efficient recruitment method because you potentially already know at least some information about the people you are going to approach.

One factor than can influence the time needed to recruit participants and facilitate the availability of participants is financial incentive. Indeed, it is common practice, if the budget allows, providing a small financial incentive (cash, voucher…) as a token of appreciation and acknowledgement of the effort and time involved in taking part in the cognitive interview. Participants are requested to sign a receipt at the time of the cognitive interview. A reimbursement for travel or other expenses should also be considered, if appropriate.

Depending on the type of recruitment method used, or their combination, the following documents need to be prepared:

- Recruitment instructions
- Quota sheet for including the individual selected

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[20] This section is based on Collins D. and Gray M. "Sampling and Recruitment" in Collins D. (Ed) Cognitive Interviewing practice, 2015 SAGE. More details can be found in this chapter.

- Recruitment screening questionnaire including introductory information about the project
- Consent form
- Information leaflet/flyer or sheet for respondent
- Recruitment posters
- Instructions for individuals within organizations/groups
- Interview confirmation letter or email
- Financial incentive receipt /reimbursement (if appropriate)

Interviewers' selection and training

"Training, and perhaps even certification, of new cognitive interviewers is one of the most important though least documented aspects of cognitive interviewing" (Willis G., 2005 page 131)

Cognitive interviewing is a pretest method that aims to find and correct any problems associated with a particular question by extracting information about respondents' cognitive processes. The role played by the interviewer and the type of approach chosen to conduct a cognitive test have significant impact also in terms of selection strategies as well as interviewers' training.

The interviewer's role varies from being a simple "data collector" to acting more as a "detective"/analyst (Willis G., 1999; Beatty P. & Willis G., 2007; Willson S. & Miller K., 2014). The first type of role is based on the assumption that the minimization of interviewer interaction will result in lower bias and higher data accuracy and validity. Therefore, when a think-aloud approach is chosen, the interviewer will remain as silent as possible; and when verbal probing is required, he will use standardized and structured probes so that every interviewer asks the same set of probes in the same way. Thus, the interviewer behaves as if he/she were administering a survey question inasmuch as "the interviewer's job is not to look for contradictions and gaps in respondent explications, but to administer the interview protocol, without deviation, as accurately and systematically as possible" (Willson S. & Miller K., 2014, page 29). In this case, the interviewers do not to need to be particularly high-skilled but should possess, or be trained to develop, the skills and techniques suitable for conducting interviews by following a rather structured protocol, which may include some set probes. Detailed training that includes the description of the cognitive objectives and also covers the fundamentals of the research methods would be nice-to-have but not mandatory. Instead, the interviewer acts as an "investigator" when the cognitive interview has "an exploratory character being more attuned toward generating ideas about potential problems than determining their extent in the population" (Beatty P. & Willis G, 2007, page 297). Then, the interviewer plays a more active role, relying at least partially on the so called "emerging probes" to explore and analyze the content of each individual interview at a deeper level. During the interview he/she must assess the information provided by the respondents, examine the emerging information to pick up any gaps, contradictions or incongruences in the respondent's narrative, then ask probes that can clarify those (Willson S. & Miller K., 2014). This entails the need for more experienced interviewers whose training ranges from the study of questionnaire design techniques, to the types of errors and their possible effects on the accuracy and validity of the questionnaire, to the knowledge of the goals associated with each of the questions under test (Willis G., 2005; Beatty P., & Willis G., 2007).

Willis (2005) provides some guidance that may be helpful when it comes to selecting the cognitive interviewers. Generally, good cognitive interviewers:

- have prior experience as an interviewer in cognitive tests

- know the topic tackled by the questionnaire to be tested

- have knowledge and experience in questionnaire design

- have some type of social science background, and know the measurement problems (bias, context effect, acquiescence, social desirability, etc.).

Conducting a cognitive interview requires multifaceted skills and qualities on the part of the interviewer. The ideal cognitive interviewer is, at the same time, a technician who can administer the test protocol, a detective who pinpoints problems in the questions, and an engineer who works toward developing feasible solutions to the emerging issues (Willis G., 2005).

Interviewers' training

It is essential that the cognitive interviewer receives training for a specific project.

Some organizations (Institute or NSO) have an internal unit entrusted with all survey pre-testing and therefore already have experts in cognitive interviewing; nevertheless, even expert interviewers need time to learn about the specifics aims of the project, get familiar with the testing protocol and practice the administration of the specific protocol. In other organizations (Institute or NOS) researchers or field interviewers may be occasionally involved in carried out cognitive tests. These researchers/interviewers are definitely in need of training, given the peculiarities of cognitive interviewing. Indeed, the main difference between qualitative and cognitive interviews is that while the qualitative interviewer wants to know the details of the respondents' answers and of their life-experiences, the cognitive interviewer is not directly interested in the answers to the survey questions but rather in the cognitive processes that led the respondents to the answers and what difficulties or ambiguities they had to overcome. In particular, Willis (2005) recommends that the training should focus on some fundamental differences between the two types of interviews. Therefore the interviewers should always keep in mind that: a) the main objective of the cognitive interview is to identify any problems with the questions and not to "run" a question at all costs, for example by reformulating it if unclear or providing explanations if requested; b) a cognitive study must necessarily proceed at slower pace as the respondents need time to think and explain the response process, the focus being on the quality of the information gathered rather than on completing the full interview quickly; c) cognitive interviewers are often asked to work with less sophisticated questionnaires from the point of view of formatting and filters (unless these are being investigated specifically), so adaptability is often a requisite and interviewers must be instructed to focus on questionnaire content, as the format might be extremely rough.

Generally speaking, before conducting a cognitive test an interviewer needs to:

• Get familiar with the questionnaire and each question;

• Get acquainted with the principles and objectives of the cognitive approach in pre-test questionnaires;

• Achieve a mastery of the specific cognitive approach to be used in the test in many ways: from by watching experienced interviewers conduct a cognitive interview, to conducting mock cognitive interviews, to interviewing a more experienced interviewer, who can replicate some of the difficult situations that may arise during the real interviews.

In preparing the cognitive interviewers' training, the following points are especially relevant:
-   What the interviewers need to know in order to play the role envisaged by the chosen CT method correctly; therefore, it is essential to know the level of expertise and knowledge among the cognitive interviewers.
-   How much time is needed but also available for the training.
-   Which documents have to be distributed (e.g. project background and instructions, test questionnaire and interview test protocol, sampling and recruitment information…)
-   Which training supplies must be provided (e.g. a video recorder for the mock interview could be very useful).

During the training, it is important to go in detail through all methodological and practical aspects related to conducting a cognitive interview, including how the interviews result have to be reported.

Furthermore, it can be useful to show video or demonstrate a "good" cognitive interview with the method selected as well a bad interview; to let trainees to practice mock interviews between them and, even better, to interview a more experienced interviewer, who can replicate some of the difficult situations that may arise during the real interviews.

Developing interview protocols

The cognitive interview protocol is the guideline that all interviewers are required to strictly adhere to during the interview in order to reduce the interviewer effect.

The protocol focuses on the following main information:
-    aims of the testing and how to introduce it to the respondent

- how test questions should be administered
- which cognitive interviewing techniques should be used and how.

The protocol is closely linked to type of approach chosen for the cognitive interview, which may vary along a continuum ranging from "think aloud" techniques to a highly standardized "verbal probing", and thus it can be adapted accordingly. Nevertheless, irrespective of the type of approach, the protocol usually includes a standardized introduction to responders to explain the test objectives and its development.

If the *"think aloud" approach* is applied, the interview protocol may simply consist of the list of questions to be tested, along with the recommendation to the interviewer to keep reminding the respondents to express their thinking processes and thoughts aloud when answering questions. As mentioned before, the "think aloud" method can be concurrent (while the R. is providing the answer) or retrospective (elicited by the interviewer after the answer is provided using precise pre-scripted probes or spontaneous probes), in any case this must specified.

The interview protocol should also instruct the interviewers on how to introduce the think aloud approach.

This is usually done in three steps:

- Explain what it is about: "Please say "out loud" anything that comes into your head whilst you are answering…" or "When you answer the questions I would like you to tell me what you are thinking…" or "Please tell me what is going through your mind as you are considering each of your answers…"
- Give a practical demonstration with a simple example: "Try to visualize the place where you live, and think about how many windows there are. As you count up the windows, tell me what you are seeing and thinking about." (Willis G., 1994)
- Let the respondent practice the think aloud technique before the interview takes place. Not all respondents are at ease with this approach, so the interview needs to offer positive feedback and praise to encourage reticent participants to continue talking during the practice.

Keeping in mind that not all respondents feel comfortable in thinking aloud and may therefore not provide sufficient information, or may not verbalize all of their thinking processes, some probes can help elicit more information. It is up to the interviewer to decide during the interview which types of probes to use.

The *"verbal probing" approach* can be more or less standardized depending on the type of probes. When highly standardized, the probes are pre-scripted, meaning that they have already been decided by the researcher and written in the protocol with the exact wording to be used and in the exact position where they have to be asked. In this case, instructions to the interviewer are to strictly follow the testing protocol to obtain a structured interview. One advantage of using *pre-scripted probes* is that all the testing aims are addressed and for every participant the same areas are explored consistently.

Nevertheless, it is quite common that especially very experienced interviewers rely also or exclusively on *spontaneous probes*. In this case, the interviewers are allowed to generate their own spontaneous probes to explore any issues raised during the interview (even if these have not been anticipated in the protocol), to clarify what the respondents said, or to investigate inconsistencies in their answers. To facilitate the interviewer's job, a list of suggested probes can also be added to the protocol.

Generally, in the cognitive interview protocol the probing questions are highlighted with different colors, typeface or placed in a box labeled "probe".

The definition and formulation of the probing questions is a very sensitive phase that can greatly enhance the effectiveness of the cognitive test in capturing the point of view of the respondents. Therefore, it is first necessary to conduct an in-depth evaluation of the questions to be tested in order to identify any problems that can be addressed during the test, and which the probes can help shed light on.

Probes should be phrased in such a way as to be:

- Neutral. Biased probes can increase the likelihood of problems going undetected
- Balanced. Any states inferred should be balanced with reference to an opposite state
- Open. To encourage the respondent to talk, the probes should not be answerable with a single word (i.e. good probes start with Why… How…When….)

- Simple. Probes should not be long-winded or double-barreled or with multiple clauses as these are likely to be misunderstood (d'Ardenne, 2015).

Furthermore, the probes should be limited in number and relevant to the purpose of the testing. Unnecessary probes will put too much strain on the respondent who may get tired quickly jeopardizing the accuracy of the information provided during the entire interview. While it is important to cover all the objectives of the testing through the probes, a good balance should be found between accuracy of the information collected and length of the interview. *(See Appendix A)*

Depending on the stage of the questionnaire development and the objectives of the testing, the same cognitive interview can make use of both approaches for the entire questionnaire or for some of the questions or for some sections. The thinking aloud should not be influenced by the interviewer in any way, therefore it is important that the probes be administered only after the participant has completed his/her thinking aloud.

As stressed by d'Ardenne (2015), once the cognitive interview protocol has been developed, it is important to test it. Mock interviews with colleagues or other people will provide useful information on how well the protocol has been designed, preempt any unexpected issues, show if the probes are appropriate, well phrased and work well, and pick up any missing or unclear instructions. The length of the interview must be checked too, and should the protocol be deemed too long, there are two options:

- drop some of the materials from the protocol such as some questions may be not tested or some probes may be unnecessary. This will require revisiting the testing priorities and the testing aims;

- develop two (or more) versions of the protocols and test different versions on different participants.

Some logistical aspects:

Location: The interview may take place in a cognitive laboratory, if available at the institute, or in any quiet and private room, such as for example a conference room or an empty office. It may even be carried out at the participant's home or in locations that are comfortable for otherwise reticent groups (i.e. offices of service agencies, churches, libraries) as long as privacy can be maintained. As the location set up is also important, the interviewer needs to check beforehand that the location available is appropriate, especially when it is the participant's home or any other public place. It is necessary that both the interviewer and the respondent feel comfortable with the location and with the furniture and that the interview be conducted without external interruption or distraction. The interviewer and the respondent should be sitting face-to-face or at 90 degrees, not close and out of direct sunlight.

Equipment: It is common practice to record cognitive interviews and sometimes videotape them.

Video recording is not always feasible due to the location, the equipment needed, or the lack of consent from the respondent; nevertheless its use makes it possible to study also the behavior of the respondent (as well as the performance of the interviewer for further improvement). Moreover, depending on the type of survey instrument being tested, e.g. a self-compilation questionnaire, video recording may be a requisite. In this case, it is important that this information be clearly highlighted in the recruitment materials and/or during the face-to-face recruitment to avoid any last minute refusal from the respondent. Generally, when the interview is recorded it is better to hide the camera or make it unobtrusive.

The recording (audio or video) serves two purposes:
- It frees the interviewer from the pressure of having to make detailed notes during the interview. Instead he/she can focus on listening to the participant and asking the appropriate spontaneous, exploratory questions to probe further (if the protocol allows it)
- It provides a full record of everything being said during the cognitive interview. This material is essential for in-depth analyses. The recording can then be transcribed or used to create a written summary after the interview (Gray M., 2014; Miller K. et al., 2014)

Prior to the interview, it is recommended to check all the equipment that will be used.

Length of the interview: Taking part in a cognitive interview requires sustained concentration from respondent and interviewer alike. Although there have been interviews lasting from 15 minutes to 2 hours, the general consensus is that 1 hour or 1 hour and half is a reasonable time and longer interviews would put too much strain on both parties.

Indeed, the quality of the information gathered during the interview is strictly related to the respondent's level of attention and motivation; therefore, it may be advisable to divide a long questionnaire into parts to be tested separately. Also, it may well be that only some questions of the questionnaire need to be tested as others have already been tested and used in other surveys.

The length of the interview depends on several factors (Gray M., 2014; Willis G., 2005): the complexity of the questions, the number of questions tested, and based on the approach adopted respondent's ability to think aloud or the amount of probing. There are also differences in the overall speed in which respondents answer the targeted survey questions or the probe questions. Furthermore, the number of skip patterns also affects the number of questions the respondents have to answer and be probed on and the length of the interview.

Occasionally, the respondent may show signs of fatigue and his/her attention and motivation dwindle, in that case it is better to cut short the interview because the following questions would not be tested properly.

Number of interviews per day: Considering that a cognitive interview requires a lot of attention and concentration on the part of the interviewer too, a limited number of interviews should be conducted in one day. This number may vary depending on the complexity of the question to be tested and the level of expertise of the interviewer as well as on the characteristics of the respondent (with some populations interviews are more uncomfortable). Furthermore, in some cases the interviewer has to travel between locations, which is time consuming. Willis (2005) recommends a maximum of three interviews, especially when they are based on a less structured probing style, which entails greater autonomy and interaction on the part of the interviewee.

Number of cognitive interviewers: Based on number of interviews, resources and time available, the number of the interviewers may vary. Of course, the more interviewers are involved, increasing the flexibility of where and when interviews can take place, the faster the project moves forward. Many interviewers can also increase the chances of identifying problems and ensure a richer discussion on how to solve them; nevertheless this requires additional effort to ensure consistency in the way the interviews are performed, especially when spontaneous probes are allowed. In this regard, training and interviewer briefing are even more essential.

Respondent's consent and respect of privacy and confidentiality: For the potential respondents to be able to make an informed decision on whether to participate in the cognitive interview project, they need to receive detailed information, such as: who is conducting the research, what is the topic of the questions, how long the interview will take, if the interview will be recorded and how the collected information will be used and by whom. Furthermore, they need to understand that their participation is on a voluntary base, and that they can skip questions they do not want to answer and even withdraw at any time during the interview. It is also important to let them know whether they will get a token for their participation and/or a reimbursement for travel expenditures.

Other relevant issues to be addressed are privacy and confidentiality, especially when private and sensitive information is to be gathered. Therefore, the potential respondents need to know how privacy and confidentiality will be maintained during all phases of the cognitive test project and for all material collected. This information must be provided during recruitment and repeated before the interview.

Details that could potentially identify participants should not be included in any report or any other type of research outputs, and the data collected have to be used only for the purpose stated.

Names and contact details should be stored securely and not be kept after the end of the project unless participants have given their consent. Of course, also the tape interviews and other documentation must be stored under lock and key, labelled with subject ID numbers rather than personal identifiers such as names, and finally destroyed.

The respondents are requested to sign consensus forms; there are usually three of them: a) for participating in the interview; b) for recording; and c) a specific consensus form if the interview is to be videotaped. The last two have to be distinct because some respondents may not consent to both.

Conducting cognitive interviews

Before the interview

In order to conduct a good-quality cognitive interview, the interviewer must be confident and comfortable with all the steps of the interview and necessary materials. Even if a training course has been attended to gain a deeper knowledge on the specific type of cognitive interviewing to be carried out, it is important that he/she revisit the research objectives and practice the administration of the test question and of any probes as well as the introductory statements. In brief, the interviewer must master the interview protocol guidelines.

The interviewer needs to familiarize himself/herself also with all the documents to be read or handed out to the participant and, before the interview, make sure he/she has everything that is needed such as:

- Test questionnaire

- Cognitive interview protocol

- Participant incentives and receipts for incentives (if applicable)

- Consensus forms

- Recorder or video recorder

- ID card, institutional badge or other proof that he/she belongs to or is affiliated with the organization carrying out the research

- Any other material such as pens or clipboard for the interviewer or for the respondent

   Computer/tablet/mobile device to be used by the respondent if appropriate

- Interviewee's personal details (name, address…) and directions on how to reach him/her (Gray M., 2015)

Furthermore, to avoid any problems during the interview, it is recommended to check and familiarize oneself with the equipment (recorder or video recorder) and have spare batteries.

It is, also, polite to call or send a text message to the participant as a reminder of the appointment and to avoid any misunderstandings about the day, place and time of the interview.

Introduction to the interview

Although the participant may already have received information on the project and the interview during the recruitment, nevertheless it is always best to provide a broad introduction and obtain his/her consent prior to the interview.

The introduction also works as an "ice breaker" while conveying the following main information to the respondent:

   - Who is the interviewer (show also ID card, institutional badge)
   - The nature and purpose of the research and of the cognitive test
   - Topics to be addressed during the interview and duration of the interview
   - Whether the interview will be taped
   - How privacy and confidentiality issues are addressed
   - How valuable his/her participation is and how the information will be used
   - Participant's right to reject individual questions or to withdraw from the research altogether
   - The fact that participation is voluntary and the participant's decision about participating (or not) in the research will not affect any services or welfare benefits they may be receiving. (Gray M., 2014)

Of course, it is important to thank the person for participating in the project; to encourage him/her to express any questions or doubts at any time and be prepared to answer them satisfactorily because the participant should feel comfortable and confident during the interview.

If financial incentives or reimbursements are foreseen, this can also be the right time to hand them out; indeed there are no rules as to when it is better to do it: either before or after the interview.

After consent forms (for the interview and the recording) have been signed there follows a detailed presentation on how the interview will be carried out, stressing that the purpose of the interview is to test the questions and not the respondent, and that what is important is how the respondent arrived at an answer to each survey question and any problems encountered in this process.

When the think aloud approach is adopted, this must be clearly explained and the respondent be given sufficient time to practice and feel comfortable with it. Refer to the cognitive interviewing protocol for instructions on how to do this.

The interview

When the respondent is ready, the cognitive interview can start with easy background questions, usually the social-demographic ones; not only are these questions useful for a deeper analysis of the interview results, they also serve as a "warm-up", getting the participants to talk about themselves.

The interview must follow the testing protocol; setting the proper pace will ensure that all topics are covered and that the respondent provides useful information. Before moving on to the next survey question, the interviewer must be sure that the quality data collected satisfies the aims of the testing.

Occasionally, the interviewer should discreetly check the time and let the respondent know when the interview is nearing its end. It may happen that the interviewer is unable to complete all the questions because the respondent is too talkative (even though something can be done about this) or because too many questions have been included in the protocol. Actually, if this issue is reported during the interviewers' debriefings as a common problem, the interview protocol ought to be amended accordingly.

When only few questions are left out, it is possible to ask the respondent whether he/she is willing to go on and complete the questionnaire.

Ending the interview

When the interview comes to an end, it is important to allow time for the interviewee to ask any questions or make comments and thank again the respondent for his/her time and contribution to the research. It can be also important to re-affirm on confidentiality, and, especially if sensitive issues have been addressed, give respondent time to "come out" of interview mode.

Usually the participant receives an information leaflet explaining the purpose of the CT, how their data will be used, and contact details of reference person for any post-interview queries. In some cases, the interviewer may also provide a list of support organizations, groups or institutions the respondent can contact about issues raised during the interview he/she may wish to follow up on.

Some tips for conducting the interview

Some basic rules the interviewer must keep in mind:

- Follow the interview protocol
- Leave enough time for the respondent to think and answer
- Find the right pace based on the characteristics of the respondent and the questionnaire to be tested
- Don't put words into the respondent's mouth, don't use leading probes
- Ask instead of assuming or pretending to have understood what the respondent said
- Use open probes which allow the respondent to talk freely, thus providing useful information
- Bring the discourse back on track (if the respondent strays to non-relevant issues, for example by saying that it is possible to go back to the subject at the end of the interview
- Kindly prompt the excessively talkative respondent to move on when enough information has been collected on one question
- Probe again and again if something is not clear (but not too much)
- Play questions back to the respondent if they ask for clarification, do not offer explanation on the questions but ask what they mean to him/her
- Remind the respondent to freely think aloud
- Ask probes in the exactly way they are written in the testing protocol
- If allowed in the testing protocol, use spontaneous probes when necessary, paying attention to the intonation

- Listen to the respondent carefully, taking only few notes that may help you probe to clarify points, especially if the interview is recorded
- When summarizing what has been said, check with the respondent to avoid errors or misunderstandings
- Allow the respondent to make mistakes as they may indicate problems with the test questions
- Accept change to the answer provided to the test questions and investigate the reasons for it
- Offer encouragement and acknowledge difficulty
- Watch for visual clues (e.g. smiling, frowning, irritation...) and make sure you ask the respondent why he/she reacted in this way
- Monitor the time during the interview
- Cover all the material in the interview test protocol if time permits but be aware of signs of distraction or fatigue
- It should be emphasized that the interview is not testing the respondent but the questionnaire to assess whether it is difficult to understand or administer.
- Do not assume that the respondent had no problems with a question just because no other interviewee had problems with that question
- Make the interviewees feel comfortable getting the most out of their cooperation, for example by using phrases such as "I did not write these questions, so you should not worry about criticizing them."
- Reassure the respondent that not understanding a question is perfectly ok because it is the question that is under evaluation and not he/she or the answer provided

Finally, the interviewer must be professional, friendly, flexible, at ease and non- judgemental.

Data Management, Analysis and Interpretation

Generally, each cognitive interview generates several types of raw data (also called primary data):

- Socio-demographic and background information about each respondent
- Recording of interview and/or transcripts of recording
- Completed test questionnaire
- Interviewer's observations and notes (reordered in the interview protocol) and
- Interviewer's notes written after the each interview

The socio-demographic and background information about the respondent is collected during the recruitment phase as well as at the beginning of the interview.

If the interview is either audio or video recorded, the recording provides the most complete information, capturing everything the participant said and did during thinking aloud and probing. A decision should be made whether or not to transcribe the recording, taking into account that it is a really time-consuming activity. If the interview is not recorded, the interviewer needs to put in extra effort in taking very detailed notes.
Following the respondent's answers to the draft survey questions (which are also available), and depending on the approach used, the interviewer may have made notes of any inconsistencies or unclarity in the answers for further probing, or he/she may also have filled in an observation checklist (e.g. skipping of questions, changing answers after probes, problems in selecting answer categories…). In some cognitive test projects, an observer is also present during the interview to take notes and compile an analysis grid of the respondent's behaviour. Finally, it is generally recommended to prepare a first summary - right after each interview and before the next one -, reviewing any notes written in the protocol and other material used by the observer.

Irrespective of the approach used, verbal probing or think aloud, the main output of cognitive interviews is still verbal texts that need to be analysed to determine whether or not respondents have a problem with a particular question. The analysis consists essentially in extracting information from these verbal reports about question performance.

There are different procedures practitioners can use to review the verbal reports (Blair J. & Brick P., 2010; Willis G., 2015). Whatever the procedure adopted, however, it is essential to reduce and organize the information, and to provide a recap for each participant (interview notes or interview summaries) of all the relevant information collected before proceeding to a systematic analysis. It is common practice to use a template for each interview to gather in a single document all the relevant data from all sources (e.g. audio recordings, observations, completed questionnaires….). This way, all interviews will be consistent and report their findings in the same order and with a similar degree of details.

All interview summaries should provide a full and accurate record of all that occurred during the interview. They should be clear enough for someone who was not present at the interview to be able to understand what happened. They should be concise and accurately reflect what was said and done in the interview, by both participant and interviewer. According to Miller et al. (2014) and d'Ardenne & Collins (2015) the written summary should:

- Always provide the original answer to each test question given by the participants. Sometimes the respondents may change their initial answer offering a revised response; both have to be reported in the summary explaining how and why the original answer has been changed;
- Describe both positive and negative findings on how the questions performed;
- Specify the type of difficulties the respondent may have experienced in answering the question (e.g. the question/answer categories had to be repeated, clarifications were asked…)
- Report any confusion the respondents may have shown regarding the survey questions, contradictory answers to the various survey questions and inconsistencies in the respondents' narrative explaining how and why that answer has been given;
- Always provide a clear distinction between participant-driven findings (think aloud, general probes) and interviewer-driven findings (specific probes);
- Use examples and quotes that can better illustrate and substantiate the summary;
- Make a clear distinction between quote and summary of what has been said;
- Describe the findings using as much detail as possible, if any area was not covered it should be stated in the notes.

In order to produce an accurate interview note/summary, it is essential to listen to the recordings or refer to the written transcript of recordings, when available, beside the interviewers' note.

The next stage of data management consists in merging all interview summaries into a single-data set ready for analysis. d'Ardenne and Collins (2015) suggest using the Framework method first described by Miles and Huberman (1994) and then expounded in more detail in Spencer et al. (2003). This is a matrix-based approach for managing qualitative data, whereby the content of each interview is entered into a grid with each row representing an individual participant and each column an area of investigation. Data within the grid can then be read horizontally as a complete case summary for each participant, or vertically for a systematic review of the data collected per area of investigation. Depending on your research aims, it can be decided to create one matrix for each question tested or to put blocks of similar questions together into a single matrix.

When creating Framework matrices, it is critical that the most important information be entered under each column heading, covering all the topics addressed in the summary templates. Therefore, it will be necessary to revisit the notes of each interview in order to select the most relevant and essential information for input into each cell of the matrix. In doing this, it will also be possible to check the quality of the original notes, and it may happen that a cell left empty can be filled by returning to the primary data and finding the missing information.

Framework matrices can be set up using a non-specialist software (such as an Excell spreadsheet) or a specialist, qualitative data analysis software (such as NVivo developed by the NatCen Social Research (Spencer et al., 2014).

Another specialist software is Q-Notes[21], developed by the Collaborating Center for Question Evaluation and Design Research at the USA National Center for Health Statistics, in order to assist with the collection,

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[21] The characteristics of Q-notes are fully describe by Mezetin Justin and Massey Meredith "Analysis software for cognitive Interviewing studies: Q-notes and Q-Bank", in Miller K, Willson S., Chepp V., Padilla Josè Luis (eds) Cognitive Interviewing Methodology, Wiley John & Sons, Hoboken, New Jersey

organization, and analysis of cognitive interviewing data. Indeed, it is more than a simple data management system. Q-notes allows researchers to conduct the various tiers of analysis in a systematic, transparent fashion; it allows for easy and accessible data entry by centralizing the data entry process. All interview data are located in a single convenient project location rather than separate files and folders. This centralization allows for consistency across interviews because all data are recorded in a uniform format. Q-notes is uniquely designed to help researchers analyse when conducting interviews, summarizing interview notes, developing thematic schemas, and drawing conclusions about question performances (Mezetin J. & Massey M., 2014).

Despite wide recognition of cognitive interviewing as an established and respected pretesting method, there is little consensus on how to handle verbal reports or carry out the analysis in order (Blair J. & Brick P., 2010; Collins D., 2007, Collins D., 2014; Ridolfo H. & Schoua-Glusberg A., 2011) to produce reputable findings (Miller K.et al. 2014).

Willis (2015) wrote a book specifically on analysis strategies for the Cognitive Interview and presented five different analysis models. Indeed, depending on the chosen approach the analysis can be conducted with or without a coding scheme. In particular, he called "text summary" (aggregated comments of the cognitive interviewer(s)) the approach that does not use a coding scheme, which focuses on the description of dominant themes, conclusions, and problems highlighted by a set of aggregated interviewer notes. Other models use coding schemes that enable them to reduce data in a more formal manner than the mere description of basic findings.

This coded approach can be *top-down* (also called deductive codes), involving the development and application of potential coding categories prior to data analysis, or *bottom-up*, building codes from data.

In the Top-down code approach, two are the main variants used by analysts according to their theoretical viewpoint : cognitive coding, which refers to the Tourangeau four-stage model, and question feature coding, which centers on the characteristics of the problems raised by the questions (e.g. Question Appraisal System QAS). These can also be combined. Furthermore, in the context of cross-cultural cognitive interviewing other coding schemes have been developed (e.g. General Cross-Cultural Problem Classification by Willis G. and Zahnd E., 2007; The Appraisal System for Cross-National Surveys by Lee J., 2014), the Cross-National Error Source Typology CNEST by Fitzgerald R., Widdop S., Gray M., and Collins D., 2011).

The *bottom-up coding* uses inductive approaches to coding analysis. Based on an intensive analysis of the raw data, codes are built from the ground up. The most common codes relate to Theme and Pattern of interpretation. The procedures used in cognitive interviewing, or even in the early phases of analysis, may be somewhat similar to the Text Summary approach, where cognitive interview results are mined for meaningful information. These codes are built from either quotes, or notes, or a combination of both; however, rather than achieving data reduction only through the production of a text-based summary, the analyst instead develops codes to represent key findings and applies these to each occurrence within an interview that is deemed noteworthy .

The analysis is an iterative process for which enough time must be set aside when planning the cognitive test. Materials may need to be reviewed several times for inconsistencies or missing information.

According to Miller "The general process for analysing cognitive interviewing data involves synthesis and reduction – beginning with a large amount of textual data and ending with conclusions that are meaningful and serve the ultimate purpose of the study" (Miller K., 2014, page 36) by following five incremental and iterative steps: conducting interviews, producing summaries, comparing across respondents, comparing across subgroups of respondents, and reaching conclusions (Miller K., 2014).

The analysis process involves two stages: description and interpretation.

The first one focuses on understanding how the survey question has been interpreted and responded to and the factors that influence interpretation and response, therefore outputs of the *descriptive analysis* are:

- the identification and classification of "potential" errors
- a map of the circumstances in which errors occur
- a description of who was affected.

The second stage, the *explanatory analysis,* investigates how "potential" problems and patterns in the problem observed have emerged, therefore main outputs are:

- reasons why a problem occurs
- the implications of identified problems for the main survey (Collins D., 2015).

Having gathered enough evidence on how a question performed, it is then possible to indicate what actions can be taken.

Example of suggestions can be:

- Review ordering (of sections, items, and so) on and other interactions between survey questions

- Simplify wordings (avoid double-barrelled, long preface, eliminate examples or specification…)

- Change term used in the wording (only if really need suggest for a very succinct definition as part of the question)

- Drop the question altogether

- Add questions when necessary to catch the right population

- Add questions to improve recall

- Review the time reference

- Change the instructions

- Change the answer categories

- Add additional instructions for interviewers or improve interviewers' training

- Add examples or leave open to adapt to specify countries

- Revision of the question translation in the target language (when CI is used in Multilanguage survey researches)

- Do nothing and leave the questions unchanged if they well perform.

Writing the Cognitive Test Report

This is the last stage in carrying out a cognitive interviewing project.

Generally a cognitive interviewing report consists of five sections: an introduction, a summary of the findings, a description of the methods, a detailed question-by-question review, and an appendix (Cheep V. & Scanlon P., 2014). Nevertheless, these reports may widely vary in the information provided and in the level of details offered. Indeed cognitive interviewing practitioners have been often criticized for neglect, in the report, key pieces of information that may undermine the credibility and validity of the test (Miller, 2011). "How to write" the report is an important issue that only recently has called the attention of practitioners.

To address this issue, Boeije & Willis (2013) have developed the Cognitive Interviewing Reporting Framework (CIFR) that emphasizes key elements that are frequently overlooked in the write-up of cognitive testing results, such as (a) background development of the questionnaire; (b) rationale for participant selection and sample size; (c) the basis for selection of the variant of cognitive probing used, and (d) the background training and level of expertise of the interviewers selected.

They propose to include in the report the following key aspects:

Cognitive Interviewing Reporting Format (CIRF): Checklist of Major Elements to Include in a Cognitive Interviewing Report	
CIRF Element	**Description**
(1) Research Objectives	(a) Clearly define the research objectives
	(b) Provide a review of the relevant background literature
(2) Research Design	Describe the features of the overall research design
(3) Ethics	Describe any review by a body responsible for ethical or administrative review of human subject research, such as an Institutional Review Board (IRB)
(4) Participant Selection	Description of the participants and of the recruitment sources and procedures. The last

	information helps to establish the credibility of the study by demonstrating that appropriate processes and sources were used.
(5) Data Collection	Include details relevant to interviewing procedures such as number of interviews, who has conducted the interview (with or without an observed), how many interviewers, training provided, location of the interviews, whether they have been recorded and/or notes have been taken during or after the interview; type of cognitive interviewing procedures, detailed information about using probes, how many rounds have been conducted and how many interviews in a round before a process of review and modification, whether the interviewing guide have adjusted along the way.
(6) Data Analysis	Provide key details of the data analysis process such as, how it was done using which information, who has been involved in the process, comparison carried out during the analysis, whether software have been used and whether suggestions for question modification were made.
(7) Findings	Include a systematic summarization of results. The results of the investigation should be presented in sufficient detail that these will be transparent to readers. Results should be provided for each item in the questionnaire that was evaluated. If certain items were skipped or otherwise untested, this should be explained, rather than implying that items were evaluated but no issues observed. In presenting evidence for the findings, researchers should rely on quotes to illustrate points. Indicate where there was variation in results, according to participant subgroup membership or other important distinctions.
(8) Conclusions, Implications, and Discussion	Discuss the overall impact of the cognitive interviewing project by indicate the extent to which the study in fact addressed the research objectives and by discussing findings and solutions in the light of any previous evidence. Include also e.g. whether more/different testing is required or limitations in the sample characteristics participant.
(9) Strengths and Limitations	Include and discuss strengths and limitations of the design and conduct of the cognitive interviewing study and provide appropriate caveats. Discuss potential for generalization to any wider population from which the participant groups were drawn, and the potential applicability to other contexts. Present, if appropriate, any methodological contributions to the wider science of cognitive interviewing or item pretesting.
(10) Report Format	Use a structured format to facilitate ease of reading. One common approach consists of sequential sections, e.g.: (a) Executive Summary (b) Introduction (c) Design and Methods (d) Findings (e) Conclusions and Implications, with limitations (f) Appendix materials, including Interview Guide, probes…
Source: Boeije & Willis (2013) in Willis G., 2015 page 168	

Another important aspect of conveying results is to make the reports easily and widely accessible to the public. A contribution in this direction is provided by the Q-Bank: a database developed by a group of US federal interagency researchers for the storage of cognitive testing results.

The Q-Bank[22] is a publicly available on line resource that chronicles the results of cognitive testing, by including entire testing reports, as well as a searchable index of individual survey questions evaluated within those reports. The survey questions are searchable by survey question, topic, and several other features. The full PDF-format texts of the associated cognitive testing report are also available.

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[22] The characteristics of Q-Bank are fully describe by Mezetin Justin and Massey Meredith "Analysis software for cognitive Interviewing studies: Q-notes and Q-Bank", in Miller K, Willson S., Chepp V., Padilla Josè Luis (eds) Cognitive Interviewing Methodology, Wiley John & Sons, Hoboken, New Jersey

Conclusion

The cognitive interviewing method allows collecting in-depth, thematic understandings of patterns and processes used by respondents in their attempt to answer survey questions, therefore to reveal problems in the questions that would not normally be identified in the traditional interview.

Nevertheless this method is, like other pre-testing method, not without limitations.

The main criticisms underline the following aspects:

While cognitive interviewing studies identify problems in the questions it cannot determine the extent to which these would occur in a survey sample because this qualitative method involves an in-depth interviewing approach with a purposive sample typically small. It cannot provide quantitative information on the extent of the problem or the size of its impact on survey estimates.

The Cognitive interview is focused on the question and answer process and therefore survey questions It is not possible to assess questionnaire length because the survey question are interspersed with the verbalization and exploration of thought processes.

The context in which questions are asked may impact on how participants answer or how willing they are to make the cognitive effort necessary to answer; and if probing occurs after each question or set of Qs it may change the way in which participants think about subsequent questions.

The cognitive interviews techniques count on participant's ability to articulate thought processes in order to identify "hidden or covert problems" but not everyone can do this well. Furthermore, not all thought is conscious and therefore capable of being articulated.

The collection of participants' verbal reports is subject to error: cognitive Interviewers may not ask the survey question as worded, may not ask the same probes or in the same way. The rapport build between interviewer and participant may hide problems, such as non-response that may happen in the actual survey.

Even with these limitations, the cognitive interviewing method is widely used as an effective tool to pretest questionnaires because it helps to identify different types of problems that respondents encounter, provides evidence about why these problems occur and identify the phenomena or sets of phenomena that a variable would measure once the survey data is collected.

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ANNEXES

General probes:
How did you go about answering that question?
How did you arrive at the answer?
What went on in your mind when you were asked the question?
Was that easy or difficult to answer? Why?
Why do you say that?
Can you tell me a bit more about that?

Comprehension probes:
What does the term "----" mean to you?
What did you understand by "-------"?
In your words, what is "------"?
What, to you, is "--------"?

> *Paraphrasing probes: ***
> What would you say that question was asking of you?
> How would you say that question to yourself?
> Can you repeat the question in your own words?
> Could you tell me in your own words what this question is asking?
> *Obtain information about the common language usage of the target population but they may not work in all situations because respondents may feel embarrassed if they really don't understand (or can't articulate) what a question is asking.*

Retrieval probes:
How did you remember that?
What brought that to your mind?
What time period were you thinking about when you answered this question? (From when to when?)
When did you last do "-----"?

*Judgement probes: ***
How sure of your answer are you?
What did you think about when deciding how to answer this question?
How accurate would you say your answer is? Why?
Did you try to count each time you [did ----], or did you make an estimate?
May not work in all situations

> *Sensitivity probes*:
> How did you feel about answering this question?
> Did you find this question embarrassing to answer? Why?
> Do you find this question too personal/intrusive? Why?
> Do you think other people would find this question sensitive? Why

Response probes:
How easy or difficult was it select an answer from the options provided? Why?

Why did you choose that particular answer rather than one of the others?
Are there any categories missing from the options provided or do they cover everything? What is missing?
Was it easy or difficult to choose that particular answer? Why?

Remind and encourage probes:
"Can you tell (me) more what are you thinking?"
"Keep talking…"
"You are doing really well"

Examples of Spontaneous Probes
Probes based on Observation
- I noticed you were spending some time with that question - can you tell me what you were thinking about?
- I noticed you hesitated before you answered - what were you thinking about?
- You answered that very quickly - why was that?

Preamble

The primary purpose of the cognitive interview is to investigate how well questions perform when asked of survey respondents, that is, if respondents understand the question correctly and if they can provide accurate answers. Cognitive testing insures that a survey question successfully captures the scientific intent of the question and, at the same time, makes sense to respondents.

In evaluating a question's performance, cognitive testing examines the question-response process (a process that can be conceptualized by four stages: comprehension, retrieval, judgment and response) and considers the degree of difficulty respondents experience as they formulate an accurate response to the question. Data from cognitive interviews are qualitative, and analysis of those interviews can indicate the sources of potential response error as well as various interpretations of the question.

By conducting a comparative analysis of cognitive interviews, it is possible to identify patterns of error and patterns of interpretation also across groups of people. This type of analysis is especially useful when examining the comparability of measures, across countries. Even in one country, survey participants can have very different cultural backgrounds and/or may need to complete the survey questionnaire in languages other than the main language of that country.

Comparability can be undermine, among others things, by a number of problems also related to how a translated question works. The mains reason why questions might not perform as intended are: a) problems arising from translation choices, b) cultural factors influencing interpretation even in "perfectly" translated questions, c) lack of construct overlap between the language/culture of the translation and the language(s) for which the questions were designed.

Recommendations for the cognitive test

Recruiting Respondents and Sample size

The sample selection for the cognitive test is "purposive": respondents are not selected through a random process, but rather are selected for specific characteristics related to the target survey population and other characteristics related with the topic under investigation. For this cognitive test, the sample should be composed, at minimum, by people aged above 18 years of both sex, with different level of education and who might or might not have been subjected to violence. Considering the fact that there are filtered questions persons who are working or have worked and unemployed should be included as well as persons with different civil/relationship status. If it is possible they should be from urban and rural areas.

It is important that all the questions will be covered by the people recruited.

Because the cognitive test sample is purposive and not random, respondents can be recruited by a variety of informal methods[23]. For recruiting persons who have been subject to violence it can be useful to contact association or other entity working in the field.

In recruiting prospective participant, it is important to inform them about the necessity to recorder the interview and the privacy and confidentiality issues are addressed in the project.

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[23] See Section D *Cognitive Interviewing* in "Qualitative Methodologies for Questionnaire Assessment".

Each country should be carried out at minimum 10 interviews, more if it is possible (up to 20- 25). It is always better to identify more than the exactly number of responded needed, in order to avoid problems in the event that some potential participant eventually decides withdraw his/her participation.

Selecting and Training Interviewers

The cognitive test questionnaire was developed to be easily administered. However, if it is possible to select interviewers who understand the purpose of the test and who have experience conducting survey interviews, the data collected will likely be of higher quality. The interviews have to be conducted by interviewers who are native speakers of the target language, so that they are sensitive to subtle nuances that other fluent speakers of the language might not understand.

The number of interviewers that are required will depend on the available resources, the interviewers' expertise, time constraints and especially on the number of interviews that will be conducted. It is suggested not to have only one interviewer to carry out all interviews even if the sample with 10 persons, and not to have more than 5 if the sample is with 20 persons.

To train interviewers[24], read through the questionnaire and the cognitive interviewing protocol. Be sure that interviewers understand the purpose of the interview. It is essential that interviewers understand that they are not to correct or help the respondent to answer questions; that must read the question exactly as it is written and then record the answer as it is reported by the respondent. If the respondent cannot answer the question, the interviewer should record "*don't know*" and then continue on to the next question.

Interviews

Each interview should last about one hour, though the exact length will vary depending on the respondent's characteristics such as the speed with which he/she answer to the tested questions and his/her ability to answer to the probe questions by providing useful information for the research goals.

General recommendations on how to conduct a cognitive interview are provided in the section D Cognitive Interviewing of the "Qualitative Methodologies for Questionnaire Assessment" report, while a proposal of interview protocol tailored for the cognitive test of the EU Survey on Gender-based Violence is provided in Annex C.

The cognitive interviewing approach is based on verbal probing with suggested general and specific probes to be posed after each questions or a set of questions. Some questions have proposed to go under testing but it may be left to the countries to remove or add other questions as well as to modify the suggested probes to meet individual country needs.

The interviews should be audio recorded, previous consent from the participant. In recruiting potential participants this issue need to be clearly addressed. If the research manager or the respondent does not agree to tape the interview, due to the sensitive topic of the research, the interviewer need to put an extra effort in taking notes during the interview. Alternatively, another researcher may participate only playing the role of taking notes. In this case, the second researcher's role needs to be clearly explained to the participants. However, it is definitely preferable to tape the interview.

The confidentiality of all information provided by the responded must be clearly stated before the interview begins.

Debriefing Interviewers

If possible, discuss the interviews with the interviewers after they are completed. Did some questions in the protocol not work? If so, which questions? What seemed to be the problem with the question? Did any questions work particularly well? If so, which questions? Be sure to document and report interviewer perceptions at the end of the data collection sheet. This information will provide valuable insight when performing analysis of the cognitive test data.

Entering Data, and Performing Analysis

It is important to use a spreadsheet for recording data in a uniform way. An example is enclosed at the end of this document. It may be adapted to any specific change made to the testing protocol suggested to meet

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[24] Ibidem

country specific needs. For each cognitive interview a spread sheet should be filled in with the information collected and then all interview summaries should be merged into a single-data set ready for analysis[25].

The demographic sections provide essential background information that will be used to understand whether the questions work consistently across all respondents, or if gender or level of education or territorial variables impact the ways in which respondents interpret the question or other aspects of the question response process.

A report should be written[26] including the main results and suggestions for improving the questions tested for the EU GBV against women and men.

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[25] Ibidem

[26] Ibidem

This document contains a cognitive interview protocol for testing some of the questions developed by the EUROSTAT Task Force on the Development of a Survey on Gender-based Violence.

We are seeking to obtain feedback on a number of issues relating to these questions.

In addition, we are looking for input from respondents on the appropriateness of pre-existing response options for these items. Some other item features we would appreciate feedback on are how hard it is for participants to come up with an answer, and item comprehensibility (i.e., is the terminology understandable and appropriate for asking about the concept in the question). We would also like information on what respondents were thinking and feeling when they were formulating responses to the items.

To elicit feedback on these issues, probing questions for each item or set of items are provided here for interviewers. There are some questions which span all items and some which are item-specific.

Interviewer Instructions

Background Information

This questionnaire is designed to test a short battery of violence questions for the EU GBV against women and men. Specifically, the questionnaire is designed to examine the ways in which respondents interpret, consider and ultimately answer the questions as well as to identify potential response errors.

Specific Areas of Interest

There are several specific areas of interest about which information from testing the instrument is desired. Respondent feedback within these areas will be used to help resolve many of the issues that have arisen during the course of item construction:

Item Comprehension

It is important to find out whether respondents understand the questions, *as worded*. Thus, interviewers are asked to record whether respondents requested the question be repeated, and if so, what specific portion of the question was confusing to the respondent.

Response Set Comprehension

It is important to capture information about whether the respondent makes distinctions between the categories provided, and why the respondent chose a specific category. Interviewer probes relevant to these issues are included.

Time References

Some items included in this questionnaire begin with "Since you were 15 years old until now" or "Before you were 15 years old" or "During your lifetime". The test is designed to ascertain whether respondents follow the instruction or whether they respond according to some other time frame, or none at all.

Questionnaire Structure

Within each of the item, the questionnaire consists of three components: 1) the <u>survey test</u> questions, 2) follow-up <u>probe</u> questions, and 3) <u>interviewer</u> <u>reminder</u>.

<u>Survey Test Questions</u>

The test questions appear in bold, and are numbered as in the questionnaire.

In order to successfully test these questions, it is important that the test questions be read *exactly* as they are printed. Do not paraphrase or alter the question wording.

<u>Probe Questions</u>

The probe questions follow the test questions and are asked of the respondent in order to elicit the processes by which respondents constructed their answer. These questions also appear in bold, are labelled as "Probe".

Probe questions should be asked as presented, however, it is very likely that you will need to ask additional probe questions to adequately gather the necessary information for the interviewer questions. After reading the probe questions, follow up with any further probes in order to elicit as much information as possible from the respondent.

<u>Interviewer Reminders</u>

The interviewer reminders appear in normal text and are not ordered or numbered.

Interviewer reminders serve as cues to help the interviewers to remind of the kinds of information to gather from each respondent. *Those questions don't have to be asked the respondent since the questions are designed only for the interviewer.*

<< READ OUT TO RESPONDENT>>

Thank you for agreeing to participate in this interview.

The purpose of this project is to develop questions about violence against women and men that will eventually be asked of many people of all ages around Europe.

Therefore we are testing new questions with the help of people such as yourself.

In particular, we need to find out if the questions make sense to everyone and whether everyone understands the questions in the same way. Your interview will help us find out how the questions are working.

During the interview I will ask you questions and you answer them, just like a regular survey. However, our goal is to get a better idea of how the question are working. After answering to each question or a set of questions I will ask you to explain how did you come out with that answer and I will ask more questions to know any problems in the question,

Please keep in mind that I really want to hear all of your opinions and reactions.

I did not personally developed the questions so don't hesitate to indicate if something seems unclear, or it is hard to answer or any other problems that may arise from the questions and the answer categories.

I will take some notes but to be sure to collect of all your answers, I ask you the permission to tape this interview. Recording will be used only by the researchers working on the project.

Everything that you tell me is confidential and will be kept private. The information will be used only for the aims of the research.

If you do not want to answer a question, please tell me and I will move to the next question.

Finally, your interview will last about one hour, unless I run out of things to ask you before then.

Before we begin, do you have any questions?

Record for Each Respondent

Respondent's sex:	1. Male
	2. Female

Region of residence: _____

Degree of urbanisation: _____

Respondent's age in completed years: _____ years

Respondent civil/relationship status _____

Respondent's educational attainment level: _____

Respondent's main activity status: _____

Next questions are about your working life. Some people might be experienced unwanted behaviour with a sexual connotation by persons in the workplace, for example a colleague or co-worker; boss or supervisor; client, customer or patient, which made to feel offended, humiliated or intimidated.

Please, think about your current workplace or about your last workplace, if you are currently not employed.

D1   Have you experienced inappropriate staring or leering that made you feel intimated or somebody in the work environment sent or showed you sexually explicit pictures, photos that made you feel offended, humiliated or intimidated?
    1   Yes
    2   No
    8   Don't want to answer (DO NOT READ)
    9   Don't know/Can't remember (DO NOT READ)

D4   Have you experienced that somebody in the work environment sent you sexually explicit emails, text messages or made inappropriate, humiliating, intimidating or offensive advances on social networking websites or internet chat rooms (for example Facebook, WhatsApp, Instagram, linked in, twitter etc.)?
    1   Yes
    2   No
    8   Don't want to answer (DO NOT READ)
    9   Don't know/Can't remember (DO NOT READ)

D5   Have you experienced that somebody in the work environment threatened disadvantages if you were not sexually available?
    1   Yes
    2   No
    8   Don't want to answer (DO NOT READ)
    9   Don't know/Can't remember (DO NOT READ)

SUGGESTED PROBES (for each question)

- ❖ How did you come up with this answer?
- ❖ What went on in your mind when you were asked the question?
- ❖ Was that easy or difficult to answer? Why?
- ❖ What were you thinking? Are you thinking of a specific situation?
- ❖ What would you say that question was asking of you?
- ❖ What does the term "----" mean to you?
- ❖ In your words, what is "------"?
- ❖ What time period were you thinking about when you answered this question?
- ❖ How did you feel about answering this question?
- ❖ Do you find this question too personal/intrusive or embarrassing? Why?
- ❖ Do you think other people would find this question sensitive? Why?

Remind and encourage probes:

"Can you tell (me) more what are you thinking?"

"Keep talking…"

Interviewer reminders:

- ➢ Did the respondent ask to have the question repeated? If so, what part of the question did the respondent find confusing?
- ➢ What kinds of trouble (if any) did the respondent have in answering the question?

Now we will talk about other situations that may occur in daily life. You may have been in a situation where the same person has been repeatedly offensive or threatening towards you to the point of scaring you, causing you anxiety or forcing you to change your habits. For the next questions I would like to ask you to think about both your current and previous partners as well as other people.

N1   During your lifetime has the same person repeatedly done one or more of the following things to you:

N1.1 … **sent you unwanted messages, phone calls, emails, letters or gifts which cause fear, alarm, or distress?**
    1   No
    2   Yes, once
    3   Yes, more than once
    8   Don't want to answer (DO NOT READ)
    9   Don't know/Can't remember (DO NOT READ)

N1.6 During your lifetime has the same person repeatedly made offensive or embarrassing comments about you, inappropriate proposals, or published photos, videos or highly personal information about you on the internet or social networks?
    1   No
    2   Yes, once
    3   Yes, more than once
    8   Don't want to answer (DO NOT READ)
    9   Don't know/Can't remember (DO NOT READ)

SUGGESTED PROBES (for each question)

❖ How did you come up with this answer?

❖ What went on in your mind when you were asked the question?

❖ Was that easy or difficult to answer? Why?

❖ What were you thinking? Are you thinking of a specific situation?

❖ What would you say that question was asking of you?

❖ What does the term "----" mean to you?

❖ In your words, what is "------"?

❖ What time period were you thinking about when you answered this question?

❖ How did you feel about answering this question?

❖ Do you find this question too personal/intrusive or embarrassing? Why?

❖ Do you think other people would find this question sensitive? Why?

Remind and encourage probes:

"Can you tell (me) more what are you thinking?"

"Keep talking…"

Interviewer reminders:

➢ Did the respondent ask to have the question repeated? If so, what part of the question did the respondent find confusing?

➢ What kinds of trouble (if any) did the respondent have in answering the question?

➢   Was the respondent thinking within the time frame of the lifetime?

Sometimes people can do things that hurt you. Now please think to situations that scared you or hurt you or could hurt you. In the next questions I would like to ask you about experiences with persons other than intimate partners such as strangers, acquaintances, friends, persons in the workplace or relatives, male or female.

E1   Since you were 15 years old until now, has someone else than your partner, male or female, EVER THREATENED TO HARM YOU in a way that really frightened you? Please exclude here your current partner/boyfriend/girlfriend and any previous partner you may have had and please don't include threats for the purpose of robbing you.

Feel free to take all the time you need to think about it.
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E26   Since you were 15 years old until now, has someone else than your partner (a stranger or someone that you only know by sight, a friend, work-colleague or relatives), male or female, FORCED YOU TO HAVE SEXUAL INTERCOURSE by threatening you, holding you down or hurting you in some way? By sexual intercourse we mean here oral sex, forced vaginal or anal penetration.
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E28   Apart from the episodes we already mentioned, since you were 15 years old until now, has someone else than your partner, male or female, MADE YOU TO HAVE SEXUAL INTERCOURSE when YOU WERE UNABLE TO REFUSE because under the influence of alcohol or drugs?
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E30   Apart from the episodes we already mentioned, since you were 15 years old until now, did you ever have sexual intercourse you did not want to BECAUSE YOU WERE AFRAID OF WHAT MIGHT HAPPEN IF YOU REFUSED?
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E32   Since you were 15 years old until now, has someone else than your partner, male or female, ATTEMPTED to make you have vaginal, oral or anal sex against your will but the intercourse or penetration DID NOT OCCUR?
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E34   Since you were 15 years old until now, has someone else than your partner, male or female, ever forced or attempted to FORCE YOU or THREATENED YOU or BLACKMAILED YOU TO MAKE YOU HAVE SEXUAL INTERCOURSE WITH SOMEONE ELSE, including forcing you to have sex in exchange for money, goods or favours?
   1   Yes
   2   No
   8   Don't want to answer (DO NOT READ)
   9   Don't know/Can't remember (DO NOT READ)

E36   Since you were 15 years old until now, has someone else than your partner, male or female, ever force you to do something else sexual that you did not want or that YOU FOUND DEGRADING OR HUMILIATING?
  1   Yes
  2   No
  8   Don't want to answer
  9   Don't know/Can't remember

SUGGESTED PROBES (for each question)

  ❖   How did you come up with this answer?

  ❖   What went on in your mind when you were asked the question?

  ❖   Was that easy or difficult to answer? Why?

  ❖   What were you thinking? Are you thinking of a specific situation?

  ❖   What would you say that question was asking of you?

  ❖   What does the term "----" mean to you?

  ❖   In your words, what is "------"?

  ❖   What time period were you thinking about when you answered this question?

  ❖   How did you feel about answering this question?

  ❖   Do you find this question too personal/intrusive or embarrassing? Why?

  ❖   Do you think other people would find this question sensitive? Why

Remind and encourage probes:

"Can you tell (me) more what are you thinking?"

"Keep talking…"

Interviewer reminders:

  ➢   Did the respondent ask to have the question repeated? If so, what part of the question did the respondent find confusing?

  ➢   What kinds of trouble (if any) did the respondent have in answering the question?

  ➢   Was the respondent thinking within the time frame of the lifetime?

I will now ask you some questions on your personal experience in relation to episodes or facts that may occur during relationships.

H1. 1   How often does your <<CURRENT PARTNER/LAST PARTNER>>:

1 Belittle and humiliate you, call you names in private or in front of other people?
  1   Very often
  2   Often
  3   Sometimes
  4   Never
  8   Don't want to answer (DO NOT READ)
  9   Don't know/Can't remember (DO NOT READ)

H1.4 Insist on knowing where you are in a way that goes beyond general concern?
  1   Very often
  2   Often
  3   Sometimes

4   Never
8   Don't want to answer (DO NOT READ)
9   Don't know/Can't remember (DO NOT READ)

SUGGESTED PROBES (for each question)

❖   How did you come up with this answer?

❖   What went on in your mind when you were asked the question?

❖   Was that easy or difficult to answer? Why?

❖   What were you thinking? Are you thinking of a specific situation?

❖   What would you say that question was asking of you?

❖   What does the term "----" mean to you?

❖   In your words, what is "------"?

❖   Was it easy or difficult to choose that particular answer? Why?

❖   Are there any categories missing from the options provided or do they cover everything? What is missing?

❖   How did you feel about answering this question?

❖   Do you find this question too personal/intrusive or embarrassing? Why?

❖   Do you think other people would find this question sensitive? Why

Remind and encourage probes:

"Can you tell (me) more what are you thinking?"

"Keep talking…"

Interviewer reminders:

➢   Did the respondent ask to have the question or the answer categories repeated? If so, what part of the question did the respondent find confusing? What about the answer categories?

➢   What kinds of trouble (if any) did the respondent have in answering the question?

Next questions are about experiences that people may have in childhood with their parents, stepparents or with other persons with whom they grow up.

P5   BEFORE YOU WERE 15 years old, did your parents (stepparents, foster parents) belittle or humiliate you with their words? Did it happen very often, often, sometimes or never?
1   Very often
2   Often
3   Sometimes
4   Never
8   Don't want to answer (DO NOT READ)
9   Don't know/Can't remember (DO NOT READ)

SUGGESTED PROBES (for each question)

❖   How did you come up with this answer?

❖   What went on in your mind when you were asked the question?

❖   Was that easy or difficult to answer? Why?

- ❖ What were you thinking? Are you thinking of a specific situation?

- ❖ What would you say that question was asking of you?

- ❖ What does the term "----"mean to you?

- ❖ In your words, what is "------"?

- ❖ Are there any categories missing from the options provided or do they cover everything? What is missing?

- ❖ Was it easy or difficult to choose that particular answer? Why?

- ❖ What time period were you thinking about when you answered this question?

- ❖ How did you feel about answering this question?

- ❖ Do you find this question too personal/intrusive or embarrassing? Why?

- ❖ Do you think other people would find this question sensitive? Why

Remind and encourage probes:

"Can you tell (me) more what are you thinking?"

"Keep talking…"

Interviewer reminders:

- ➢ Did the respondent ask to have the question repeated? If so, what part of the question did the respondent find confusing?

- ➢ What kinds of trouble (if any) did the respondent have in answering the question?

- ➢ Was the respondent thinking within the time frame of "before he/she was 15 years old" or some other time frame?

The Spreadsheet for recording the data (R=respondent)

Date interview:	
Interview Code:	

Question Code	Answer	Understanding question / What R thoughts / Examples	Understanding words and phrases	Answer categories	R's tips to change the question or terms	Oth-er	Difficulties in understanding the purpose of the question	R asks to repeat the question	R has difficulties with terms or phrases	R asks to repeat answer categories	R change answer after probing	Question creates embarrass ment	R doesn't answer	Other issues	Interviewer's opinions		
															Emba-rrassing question	Question difficult to read	Other (specify)
Sex																	
Age																	
Region of residence																	
Degree of urbanisation																	
Educational attainment																	
Civil/relation ship status																	
Main activity status																	
D1																	
D4																	
D5																	
N1.1																	
E1																	
E26																	
E28																	
E30																	
E32																	
E34																	
E36																	
H1.1																	
H1.4																	
P5																	
Interviewer general notes:																	
Place of the interview (e.g. home/office/ others):																	
Date of compilation:																	

COGNITIVE TEST TRAINING

FOR TESTING THE EU QUESTIONNAIRE ON GBV AGAINST WOMEN AND MEN

OBJECTIVES	This training course is designed to prepare researchers and interviewers to plan and conduct the cognitive interview as pre-testing method for the EU questionnaire on Gender Based Violence (GBV) against women and men. By the end of the training participants will: a) acquire knowledge on: cognitive testing as a pre-test method, EU survey and questionnaire on GBV and cognitive interview testing protocol; b) be able to: plan the cognitive test, conduct cognitive interviews, effectively analyse and interpret cognitive interview data, draw up the CT report.
PARTICIPANTS	Researchers and interviewers who will plan and conduct the cognitive interview test
TRAINER(S)	
CONTENTS	**First day:** 1 EU survey on GBV against women and men (history, purpose, contents, questionnaire, survey mode….) 2 Introduction to cognitive test method (origins and purposes) 3 Cognitive interviewing techniques (Think aloud and Verbal probing) 4 Recommendations for the cognitive test (sample, recruitment, interviews, equipment …) 5 Cognitive interview testing protocol **Second day:** 1 Cognitive interview testing protocol 2 How to conduct a cognitive interview (tips): theory and practice 3 How to analyze data collected 4 How to draw up the final report on CT results
TRAINING METHODS	Presentations, individual and/or group practical exercises, conduction of mock cognitive interviews
DOCUMENTS	- EU questionnaire on GBV against women and men - "Qualitative Methodologies for Questionnaire Assessment" paper by Eurostat- Section D – Cognitive Interview - Cognitive interview testing protocol - Spreadsheet for reporting results of each cognitive interview - Spreadsheet for analysing data

SUGGESTED READING	- Collins D. (2015) (Ed). *Cognitive Interviewing Practice*, NatCent Social Research, Sage London
	- Miller K, Willson S., Chepp V., Padilla Josè Luis (2014) (eds). *Cognitive Interviewing Methodology*, Wiley John & Sons, Hoboken, New Jersey.
	- Willis, G. (2015). *Analysis of the Cognitive Interview in Questionnaire Design*, Oxford University Press 2015.
	- Willis, G. (2005). *Cognitive interviewing: a tool for improving questionnaire design. T*housand Oaks. London, Sage publications.
DURATION	2 days

- Collins D. (2015) (Ed). *Cognitive Interviewing Practice*, NatCent Social Research, Sage London

- Miller K, Willson S., Chepp V., Padilla Josè Luis (2014) (eds). *Cognitive Interviewing Methodology*, Wiley John & Sons, Hoboken, New Jersey.