

Chapter 2

Cognitive Interviews: Designing Survey Questions for Adolescents

2.1 Introduction

All too often, survey items are fielded without careful testing. During this stage of the Flourishing Children Project, we engaged in three rounds of cognitive testing to assess whether items were clear to respondents and whether their understanding of the questions aligned with the definitions presented above. This chapter discusses the process and the implications of the cognitive interview study.

2.1.1 Rationale for Cognitive Testing

National surveys have recognized the importance of collecting data about adolescents directly from adolescents. To that end, it is desirable for adolescents to be included as respondents in large-scale surveys (Scott 1997). The Youth Risk Behavior Survey, National Longitudinal Survey of Youth, Monitoring the Future, and National Longitudinal Study of Adolescent Health all collect survey data directly from adolescents. Despite interest in and the recognized importance of collecting data directly from adolescents, however, little is known about how best to do it. The majority of research on survey-item development, aimed at improving the reliability and validity of measures, has been conducted on adult subjects. Given developmental differences, it is unclear the extent to which this research can be applied to adolescents.

Researchers also use parents to report data about their children. The National Survey of Children's Health, some waves of the National Household Education Survey, the National Survey of America's Families, the High School Longitudinal Study, and the Education Longitudinal Study, for example, all use parents' reports of their children's behaviors. Although using parents' reports about their children, either as complements to children's own reports or as stand-alone proxies, may sometimes be appropriate, it is typically assumed that parents cannot provide accurate reports on adolescent risk-taking behaviors (e.g., sexual activity, drinking,

delinquency, or drug use). Little is known about the accuracy of collecting data from parents about their adolescents' attitudes, values, and character strengths.

As discussed in [Chap. 1](#), most research to date focuses on negative adolescent behaviors and characteristics. Our goals here are, of course, to develop robust positive measures. We have a secondary goal as well, though, which is to fill the gap in the literature on the best practices when developing measures of adolescent behaviors and characteristics, in particular with respect to positive measures.

To address these goals, we developed initial measures of 19 constructs of positive adolescent development. Given the exploratory nature of this stage of the work and the goal of the project—to develop measures for use in federal surveys and basic research—we tested the newly developed items through a series of cognitive interviews with parents and adolescents.

2.1.2 What is Cognitive Interviewing?

Cognitive interviews have proven to be an effective and efficient method for identifying problems with question wording, comprehension, and recall and for ensuring that items are capturing the underlying construct they were developed to tap (Willis 2004). In general, cognitive interviews help determine what information respondents possess or do not possess, reveal potential sources of measurement error, and help refine question wording.

A main objective of cognitive interviews is to give researchers a window into respondents' cognitive processes when answering survey questions, thus assisting in identifying problems and potential solutions at each step in this process. For this reason, cognitive interviews are useful in testing newly developed items and assessing the extent to which all questions are working as intended. Cognitive interviews can also shed light on how well items are working with specific subgroups and the extent to which target groups have the required information needed to answer the questions. In addition, cognitive interviews provide insight into the value of varied response categories.

In sum, cognitive interviews allow researchers to more thoroughly understand the cognitive process respondents undergo while answering questions. This understanding, in turn, helps to identify comprehension problems, assess whether questions are working as intended, ascertain if respondents possess and are able to recall necessary information, and determine whether respondents can accurately apply their responses to the answer choices provided. Additionally, cognitive interviews help identify other unanticipated issues affecting data quality. Information gathered through cognitive interviews can help researchers to construct, formulate, and ask better survey questions (see Presser and Blair 1994; DeMaio 1993; Forsyth and Lessler 1991).

2.1.3 Research on Developing Survey Questions for Adolescents

In order to understand why children differ from adults in response reliability on survey items, it is important to consider how children's developing cognitive processes may affect the way they think about and answer survey questions. A standard question–answering process model describes four steps a respondent may go through to formulate a response: (a) understand and interpret the intent of the question; (b) retrieve the relevant information from memory; (c) integrate this information into a summarized thought; and (d) report this thought by translating it into the format of the response scale in the question (Tourangeau and Rasinski 1988; Sudman et al. 1996).

This model has been expanded by Krosnick's satisficing theory, which states that some survey respondents avoid substantial cognitive effort required by certain questions by taking mental shortcuts to avoid going through all the steps to come up with an adequate answer (Krosnick 1991). The ability to use satisficing to generate an accurate and reliable final answer depends on the respondent's motivation and cognitive abilities, as well as the difficulty of the question. For this reason, it is hypothesized that children with lower cognitive abilities will be more likely to use satisficing and have more trouble producing valid responses.

It has also been proposed that there is an interaction effect causing less cognitively developed respondents to be more sensitive to difficult or demanding questions. Children aged 11 years and older are generally thought to be able to use formal thinking and logic and to understand hypothetical situations (Caskey and Anfara 2007). Nevertheless, their cognitive processes are still not as advanced as those of adults, and older children show significant differences in ability to quickly and accurately go through the question–answer process model (Scott 2000). Moreover, younger adolescents may have difficulty manipulating ideas about hypothetical situations (de Leeuw et al. 2004).

Due to the well-documented differences between the cognitive functioning of adults and adolescents, best practices for developing survey questions that work well for adults may or may not apply when developing survey questions for adolescents, especially younger adolescents.

Unfortunately, there is very limited research on cognitive interviews for adolescents. Research on the ability of adolescents to successfully participate in “think alouds”—thinking aloud while answering survey questions—is mixed. For example, Strussman et al. (1993) found that adolescents struggled to articulate their thoughts during think alouds. Adolescents tended to give the bare minimum response necessary to answer the researcher's questions. In many instances, this was one word. In contrast, Hess et al. (1998) found that adolescents had no problem thinking aloud while answering survey items. Zukerberg and Hess (1996) also concluded that adolescents are able to handle the demands of the cognitive interview; however, younger adolescents have more difficulty with some tasks (e.g., skip patterns). In particular, adolescents struggled with issues of

comprehension on long and complex questions, had difficulty recalling information, and had difficulty on questions which assumed that the researcher and respondent shared the same value system (Strussman et al. 1993). De Leeuw et al. (2004) suggest that a combination of think alouds and cognitive probing (including paraphrasing) works well for adolescents.

Both Strussman et al. (1993) and Hess et al. (1998) found that adolescents had difficulty with reference periods. Hess et al. found that adolescents ignored reference periods, while Strussman et al. found that younger respondents, especially, reported the same responses over multiple response periods. In addition, both studies found that adolescents fared better with concrete (“once per week”) rather than vague, more abstract (“sometimes” or “in a typical month”) reference periods. In another study, adolescent respondents expressed a strong preference for response categories with specific time frames rather than vague qualifiers when reporting frequencies (Zukerberg and Hess 1996). Hence, it may be especially useful to use reference periods that follow the school calendar (e.g., September through May), rather than the calendar year (January through December), when writing questions for adolescents, given the salience of school as an organizing principle for time for adolescents.

2.1.4 Research on Surveying with Parents as Proxy Reporters

Parents are frequently used as proxies to report about their children in an attempt to reduce cost. However, on many topics, parents may not provide the same responses that their children would. The assumption that parents will have the information to report for their children may be more accurate in some areas than others. For example, parents’ ability to report for or about their children is questionable for behaviors, interactions, and experiences not directly observed by parents, such as those that occur in classrooms or between friends. This may be especially the case as children enter adolescence, where independence is more normative. Again, little is known about whether or when parents possess the information necessary to report for their children or about the type of information parents do possess when they are able to report. Relevant to this project, it is not known for which positive domains parents may be more or less accurate reporters.

Studies on parents’ reporting as proxies for or about their children tend to focus on the health and quality of life of chronically ill children. One study of chronically ill adolescents and their parents looked at adolescent and parent reports of the adolescents’ health-related quality of life (Sattoe et al. 2012). The authors found that about 50 % of adolescents and their parents agreed. Disagreements were statistically significant, but the authors considered them generally minor as half of the disagreements were of less than 1 standard deviation. Disagreements were related to a variety of factors including adolescent’s age and adolescent’s and parents’ educational levels. More generally, research has found that parents tend to

rely on generic information rather than specific episodes when reporting for their children (Groves et al. 2009). They also have different knowledge to base their responses on than their adolescents do.

2.1.5 Best Practices for Survey-Item Development

In addition to the studies discussed above, much research has gone into developing best practices for survey-item development with adults. The field now has agreed on a number of key recommendations for survey-item development, including the following nine:

1. Use simple, common words (Krosnick and Presser 2010).
2. Use easy-to-understand syntax (Krosnick and Presser 2010).
3. Use concrete, specific, unambiguous wording to reduce misunderstanding and various item interpretations (Devellis 2003; Tourangeau and Bradburn 2010; Krosnick and Presser 2010).
4. Use exhaustive, mutually exclusive response categories (Krosnick and Presser 2010).
5. Avoid leading questions (Krosnick and Presser 2010).
6. Avoid double-barreled questions (Krosnick and Presser 2010).
7. Avoid negative wordings (Krosnick and Presser 2010).
8. Use context, including reference groups and reference periods, to increase response accuracy and aid recall (Tourangeau and Bradburn 2010; Groves et al. 2009).
9. Minimize social desirability bias by eliminating the interviewer, offering anonymity to respondents, legitimizing the less socially desirable responses by using an example in the question, using response scales in lieu of dichotomous yes/no responses, and discouraging the use of the “don’t know” category (Krosnick and Presser 2010).

These key recommendations were kept in mind while developing items for the adolescent and parent surveys as part of the Flourishing Children Project. After the items were developed, we used cognitive testing to evaluate them. Below we present the lessons learned from that study.

2.2 Method

2.2.1 Recruitment

Study participants were recruited in a variety of ways including ads posted on websites such as Craigslist, word of mouth through family and friends, and flyers posted at community centers and other strategic locations within neighborhoods.

Respondents were offered \$50.00 to participate. Interested individuals were asked to contact the study site via a toll-free number and complete a brief screener interview to establish study eligibility. The same procedures were used for both parents and adolescents.

Institutional Review Board approval was obtained for all study procedures and materials. Ultimately, 68 adolescents (ages 12–17 years) and 23 parents (of a subset of the adolescents interviewed) in 15 cities across the United States were selected for the study.

2.2.2 Sample

To ensure that the items worked well across age, income, gender, and racial/ethnic groups, the sample of adolescent participants was segmented by these characteristics. Slightly more than half ($n = 38$, 56 %) of adolescents were between the ages of 14 and 17. The majority of adolescents were, intentionally, from low-income families ($n = 39$, 57 %), and 41 % ($n = 28$) were male. The sample had roughly equal numbers of White ($n = 19$, 28 %), Black ($n = 26$, 38 %), and Hispanic ($n = 23$, 34 %) adolescent participants.

Although the sample size is small relative to quantitative studies, it is appropriate for exploratory qualitative research and for the techniques used (see Krueger and Casey 2000; Willis 2005; Patton 2002). Saturation is quickly reached with five to nine interviews of any one type of group (Willis 2005). Additionally, we maximized the utility of the sample by using a purposive sampling design, segmenting and selecting participants based on characteristics prior research has shown are important to the study of constructs or, in the case of interviews, may be associated with the survey response process (e.g., age) (Patton 2002). Purposive sampling allowed us to compare and contrast data from groups and interviews across key background characteristics such as age or race/ethnicity. Lastly, although not random or representative, our sample includes participants from groups that are often underrepresented in national surveys, particularly racial/ethnic minorities and those from low-income households.

2.2.3 Study Design

We conducted a cognitive interview with each of the 68 adolescents, testing items for the 19 constructs in our conceptual framework in three rounds of interviews, with later rounds being informed by preceding rounds (Table 2.1).

Similarly, we conducted a cognitive interview with each of the 23 parents, testing items for all of the constructs except Spirituality in three rounds. Thus in each round, items for six or seven constructs were tested with 21–24 adolescents and seven to eight parents.

Table 2.1 Constructs tested in each round of cognitive interviews

Construct	Round 1	Round 2	Round 3
Altruism			X
Diligence and reliability	X		
Educational engagement		X	
Empathy		X	
Environmental stewardship	X		
Forgiveness	X		
Generosity/Helping family and friends			X
Goal orientation		X	
Gratitude	X		
Hope		X	
Initiative taking			X
Life satisfaction	X		
Parent-adolescent relationship			X
Peer friendship	X		
Purpose	X		X
Social competence		X	
Spirituality		X	X
Thrift			X
Trustworthiness and integrity		X	

Seventeen of the constructs tested well and did not need to be retested. The items for the constructs of Spirituality and Purpose were found to be problematic, however, and thus were revised and retested in the final round of interviews with adolescents.

A key goal of the overarching project is to develop items that can be used for a variety of purposes, including federal surveys and program evaluations, that may be conducted through a variety of modes (e.g., paper and pencil, phone, in-person, web, etc.). For this reason and in order to maximize project resources, cognitive interviews were conducted both in person and over the phone.¹ Conducting interviews over the phone also allowed us to see if the items worked well with adolescents and parents in different geographic areas across the United States. In addition, this approach allowed us to maximize what could be learned from a relatively small number of interview rounds.

¹ Researchers have explored the administration of cognitive interviews over the telephone (Willis 1999; Beatty and Schechter 1994; Schechter et al. 1996) to increase similarity between test and survey modes, gain the participation of respondents who are unlikely to agree to in-person interviews, increase access to hard-to-reach populations (e.g., participants across the nation and in rural areas), and reduce costs.

2.2.4 Study Procedures

Members of Child Trends' research staff trained in cognitive interviewing techniques administered the cognitive interview protocol, which included the newly developed items, as well as probes and open-ended questions. Interviews lasted between 1 and 1.5 h. In-person interviews were conducted in a private, quiet location convenient to the participant, such as the research study center, local recreation facilities that serve teens, the participant's home, or other private and quiet public locations (e.g., public libraries or coffee shops). Participants interviewed over the phone were asked to find a quiet, private space; interviewers verbally confirmed this with participants before the interview commenced.

Parental consent and adolescent assent were obtained for adolescent interviews. Participant consent was obtained for parent interviews. Interviews were recorded, and transcriptions were composed targeting specific sections of the interview identified as problematic for the respondent.

2.2.5 Protocols

In total, six semistructured cognitive interview protocols were developed across the three rounds of interviews—three for adolescents and three for parents. The main objective of the protocols was to standardize the use of cognitive probes that assessed item comprehension, appropriateness of wording, whether items worked as intended, and whether participants (in particular, parents) had the information needed to answer the questions, as well as to identify problems, if any, with recall and response format.

In answering questions, adolescents were asked to respond to the items from their own perspective, while parents were asked to respond to the items from their adolescent's perspective. Parents were reminded of this directive throughout the interview. For example, they were asked, "Were you answering from your perspective or your child's perspective?"

To assess how the items were working and to identify problems, a variety of techniques were used, including the following:

- Concurrent and retrospective "think alouds" in which respondents were asked to talk through the process by which they arrived at their answer. Think alouds are particularly helpful in identifying problems with comprehension, information retrieval, and recall.
- Follow-up probes (e.g., *What did you think I meant by ...? How did you arrive at your answer? Can you tell me more about that?*) and paraphrasing techniques (e.g., *Can you repeat the question in your own words?*). These techniques are helpful in learning whether the questions are interpreted and understood in the intended manner (DeMaio 1993). Additionally, to ensure that parents had the

information needed to answer the items, we included probes such as *Did you have the information you needed to answer the questions?* throughout the protocol.

- Use of semistructured, open-ended items (e.g., *Before we get started, can you tell me in your own words what you consider to be the most important characteristics adolescents your age should have?* or *What comes to mind when you think of spirituality?*). Open-ended questions are useful in confirming whether the operationalization of key concepts by researchers matches the ways that the target population thinks and talks about the concepts. Additionally, the information collected through the open-ended items helped to identify issues and concepts that were missing or were more salient to certain subgroups, as well as phrases or terms that were used by the target population. Such terms and phrases were, in turn, incorporated into items developed and revised to measure the target concept, and they increased the applicability of questions.
- Confidence assessments such as *How confident are you of your answers to these questions?* can help to assess whether the respondents have the information needed to answer questions. Confidence assessments may be particularly useful when parents are asked to report as proxies for teens.

2.2.6 Data Analysis

The detailed summaries drafted after the interviews, hand-written notes taken during the interviews, targeted transcriptions, and recordings served as the data for this stage of the project. Throughout the field period, a series of debriefing sessions were held with study-team members to review interview summaries and notes. The summaries and audio recordings were also reviewed by senior study staff for data quality assurance. The focus of the debriefings was to identify any comprehension or clarity issues, to determine if the questions and answer choices were working as intended, and to determine if respondents were able to recall needed information and find the answer choice that closely matched their formulated response. More specifically, interviewers reviewed responses item by item across respondents, documenting items that appeared to work well, as well as highlighting any problems identified through the interviews. If problems were detected, the research team explored potential sources (e.g., item clarity, comprehension, recall/response formation, etc.) and identified ways to improve the items. Recommendations about which items to drop were also made.

Special attention was placed on identifying patterns that reflected real underlying problems as well as patterns across interviews and respondent characteristics. In order to minimize the potential for type II errors—in this case, making changes to the instrument that were unnecessary—changes were only made when patterns and sources of the problem were identified. Quantitative data, including the responses generated from the measures and respondent demographics, were entered into an SPSS database. Analysis of these data helped to distinguish items

with a good amount of variance in the responses, as well as items with little-to-no variance, and to corroborate cases where problems were suspected. The small parent sample size in each round makes it difficult to determine the degree to which variance is present or absent in parent reports. Thus, most of our assessments of variance are limited to data from adolescent respondents.

2.3 Results

In this section, we present seven lessons learned or confirmed from our study, as well as illustrative examples from the data.

2.3.1 Lesson 1: Reference Groups

Focus on concrete, clear, and salient reference groups. Items that worked well tapped into concrete behaviors, experiences, and characteristics and had clear and salient reference groups (e.g., school and family life). For parents, items that tapped into the “observable” also appeared to yield high-quality data and increased the likelihood that parents would be able to report the information required by the question. Below we illustrate through the words of a 16-year-old Latino and African American female respondent how the quality of data (in particular, reliability of responses) may be compromised when a question lacks specificity.

Interviewer: ... I am happy when others succeed. Not at all like you, a little like you, somewhat like you, a lot like you, or exactly like you.

Respondent: It kind of depends on the person. [Chuckles]

Interviewer: How so?

Respondent: Because if the person seems fake ... or something like that, then I'll be a little annoyed. I won't be happy for them. They didn't earn it. Well, some people at my school, they can buy their way into things. Like a girl, she didn't earn her ticket to get into choir.

2.3.2 Lesson 2: Construct Selection

Avoid abstract constructs. Avoid items that tap into abstract constructs and concepts. Respondents, particularly adolescents, appear to interpret items better when the items connect closely with their reality and tangible experiences. Although the problem was not limited to younger adolescents, abstract items were particularly difficult for those aged 12–14. In order to facilitate comprehension, items tapping into abstract constructs should, to the extent possible, include concrete examples and/or lead respondents to draw from their everyday experiences. The closer the

connection to respondents' reality and tangible experiences, the more likely the item will be interpreted as intended.

More specifically, adolescents, especially younger adolescents, reported comprehension problems and were confused with several initial items. For example, six of 23 adolescent respondents in round 2 reported comprehension problems with the item *I seek or experience an awareness of an inner source of my being, or soul* as the following quote from a 13-year-old Black female illustrates:

Interviewer: I seek or experience an awareness of an inner source of my being, or soul.

Respondent: Yes!

Interviewer: What does the phrase "inner source of my being, or soul" mean to you?

Respondent: Um, I don't know!

Interviewer: Um, what did you think of when you answered the question?

Respondent: Um, I don't know!

Interviewer: How did you decide which choice to pick?

Respondent: Um—I'm not sure.

As the quote above indicates, adolescents (in particular, younger adolescents) were willing to provide responses despite not being able to articulate their understanding the question or why they chose their response, raising doubts about the meaning of their responses.

2.3.3 Lesson 3: Clarity of Items

Avoid items that are ambiguous, can carry multiple meanings, or are double-barreled. Using items that are as concise and specific as possible will facilitate data analyses and interpretation. Interpretation issues occurred with adolescents, as others have found with adults, when items were ambiguous or double-barreled (i.e., items that ask about two distinct issues but require only one answer). With the latter, respondents may provide a response for one or both of the issues, and thus, the analyst will not know how responses should be interpreted. Interpretation problems were also observed with items that did not provide sufficient context; the resulting ambiguity left respondents to interpret the items using their own diverse perspectives and experiences. Resolution of these issues is critical to developing reliable measures for any population including adolescents. The following quote from a 15-year-old Black female provides further evidence of how participants struggled with ambiguous items.

Interviewer: I have a meaningful life. Do you strongly agree, somewhat agree, neither agree nor disagree

Respondent: I'd skip that because I don't really—I don't really understand ... when you say, "I have a meaningful life."

Interviewer: Mm-hmm

Respondent: Is that like you understand your life?

For another example, the item *When I look at the world, I do not see much to be thankful for* was interpreted in multiple ways. One interpretation included

adolescents thinking about worldwide events, such as wars, and thus, they thought that they did not have much for which to be thankful. The following quote from a 16-year-old Hispanic male illustrates this point:

Like, in parts of the world, there's a lot of conflicts are happening, and that is something you can't stop.

Other adolescents compared their life to less fortunate parts of the world and thought they had a lot to be thankful for in comparison, as illustrated by the following quote from a 16-year-old Hispanic female.

Because when I do look at the world, I see that I have a lot to be thankful for. Like, when you look at all the perspectives of each country, in each part of the world, you tend to realize that you might be lucky. You just have to be thankful for what you have, even though some might have more or so might have less than you.

In the item in the above example, the lack of a reference point caused ambiguity for respondents and led them to create their own reference points and thus led to very different interpretations of the questions and responses.

Similarly, the item *I do just enough school work to get by* was problematic because adolescents applied different standards for the meaning of “get by.” For many adolescents, it meant doing the bare minimum to pass, whereas other adolescents reported that it meant doing just enough to earn a B. In addition, one 13-year-old White teen pointed out a potential interpretation issue:

Well, um, doing just enough school work. It's just kind of not specific-ish! Um, the fact that given ... it's kind of hard to answer because sometimes you don't know yourself, kind of how much you usually do. ... Also, with the options that you're given, if you say “None of the time,” that could even go as you overachieve on things and you do more than you're supposed to, or it could mean that you're doing less than you're supposed to. ... See what I mean?

As noted above by this teen, a response of “none of the time” could be interpreted as “I never even do the bare minimum to get by” or “Since I always do school work I am never doing just enough to get by.” As a result, this item was dropped.

2.3.4 Lesson 4: Item Salience

Use what is salient. Items should use references (periods, groups, and times) that are relevant to how a target construct is organized and thought of by adolescents (e.g., use school year when asking about school activities). Consider what is salient developmentally for adolescents (e.g., school and classmates are very salient).

As illustrated by this quote from a 16-year-old Latino and African American female, classmates are a very salient reference group.

Interviewer: Okay! Um, now the next question is: I understand how those close to me feel. Not at all like you, a little like you, somewhat like you, a lot like you, or exactly like you.

Respondent: I'm sorry. What was the question? I understand what?

Interviewer: I understand how those close to me feel.

Respondent: Hah! Um, a little like me.

Interviewer: Now, who were you thinking of, if anyone?

Respondent: My group of friends at school. ... I'm kind of different than all my friends because they all live in live really wealthy neighborhoods. They all have pretty much perfect families, so I don't really relate.

2.3.5 Lesson 5: Parent Reports

Ask parents to report on what they know and observe. Parents' ability to answer some questions and the accuracy of their responses appear to depend, in part, on the relationship they have with their children, whether the item is about a behavior that parents observe, and the extent to which they communicate about the target issue with their adolescents. Parents also appeared to sometimes have difficulty separating their opinions from their perceptions and from those of their child.

Our findings indicate that some parents struggled to answer some of the questions from their adolescent's perspective and instead answered from their own perspective, such as what they thought their child should do or how they perceived their child to be, as illustrated by the following quote from a parent of a 15-year-old White male.

Interviewer: When my child gives to others, he feels good.

Respondent: Somewhat.

Interviewer: Do you feel you can answer this question from your child's perspective?

Respondent: It's hard. Um, I don't know how he would answer these ... because as an only child, I see selfishness in him. ... And I don't know if he sees it.

It may be that in these cases parents were filling in information gaps with their best guesses, as suggested by the following quote from a parent of a 13-year-old Black female.

Interviewer: Do you feel that you were able to answer this set of questions about your child?

Respondent: Yes, but I did feel that I had to keep saying from her perspective, 'cus when I feel strongly about something, it kind of ... surfaces
I had to read it twice and be like, "Wait a minute." I strongly disagree, but she may somewhat disagree because she is, you know, 12 ...
But she's aware of [this] because these are things that we promote.

As illustrated in the above example, this difficulty is exacerbated when parents' opinions or expectations differed from those of their child. Parents also reported that their ability to answer some questions and the accuracy of their responses depended, in part, on the relationship they had with their child and the extent to which they communicated about the target issue.

For example, regarding parental knowledge about their adolescent's friendships, the following quote from a Black mother illustrates this point:

Interviewer: My child finds it hard to make friends.

Respondent: Not that I'm aware of! I mean, I don't know if he struggles inside or not.

A mother of a 13-year-old White female reported that she struggled between answering from her own opinion and from her child's opinion.

Interviewer: My child feels like her life is meaningless.

Respondent: No, I don't think she thinks that!

Interviewer: Okay! Is this something that you think parents can answer about their child?

Respondent: ... Again, I don't think that most people are having I mean, it seems like this is a very philosophical question. That's the word. I don't think that it's psychological or spiritual. Like, they're really philosophical questions and talking as a parent, you worry about the day-to-day. Like, what do you want to eat for dinner and what friend are you going to spend time with and what are you doing with this class and what are you doing in that. I mean, me as a parent don't really go to that kind of level—philosophical things like, um, you know? I just think that that's kind of—maybe they're thinking about that stuff. You never know if people think about those things.

Interviewer: And when you were talking about these questions, were you thinking about how your child feels or what you personally think?

Respondent: Well, you know? I was following instructions. I was trying all the time to do what you instruct me to do. I just found the questions—they're philosophical and they're hard. To the best of my abilities, knowing my child, it's hard for me to know. I'm guessing, but I'm not saying what my beliefs are.

For some topics and items, some parents simply reported not having the information needed to respond. As illustrated by the quote below, a mother of a 13-year-old Black female reports not being able to answer some questions about her child's friendship because technology has replaced the in-person, public interactions that she could observe.

Interviewer: ... do you think most parents or a number of parents don't have enough information to answer this type of question?

Respondent: That's hard. It's hard. I don't want to be in a bubble. ... But... um, I know that with society, the way it is now, kids could be doing so many things that parents are not aware of in terms of communicating with each other. If the friend is not there, isn't visible or physically there ... I don't know if they're texting them, if they're writing them, if they're e-mailing them, if they're webcamming them. You don't know. And it might not be intentional that you don't know. It just may be, just the way, uh—children, you know, are ... they're acting. And I don't know if this pertains off the record, but I've been in my car driving with my children's friend, in the car with me, and they're texting each other, instead of having an open communication.

Interviewer: So, they may not share everything with their parents?

Respondent: I don't think they do. I don't think mine do.

To address this issue, several strategies were used at both the construct and item levels.

At the construct level, we first eliminated constructs from the parent surveys that were personal in nature to adolescents (i.e., Purpose and Spirituality) because, based on the cognitive interviews and the literature, we believe these are internalized constructs and that parents would not have the information needed to

accurately respond from their child's perspective. Second, we asked parents to respond from their own perspective in the parent-adolescent relationship section. We suspect that it would be difficult for parents to disentangle their own perspectives from their child's when reporting on the parent-adolescent relationship.

In terms of items, we dropped selected items to which parents struggled to respond (e.g., not having the needed information or having trouble answering from their child's perspective). We also revised some items to focus on adolescent behaviors that parents were able to observe. For example, we eliminated parent items about adolescents' school behaviors because parents are not likely to observe those behaviors. Lastly, throughout the survey, we included a "don't know" category for parents to endorse when they do not have the needed information to respond or when they have difficulty responding from their adolescent's perspective, to eliminate parent data that may not be accurate.

2.3.6 Lesson 6: Response Variability

Address the lack of variability in responses. As noted above, a common problem in developing positive items is the lack of variance or the presence of upward bias in response options. For example, we found evidence that the full range of the life satisfaction scale that goes from zero to ten, developed by The Gallup Organization, was not being used, as the quote below from a 16-year-old White male illustrates.

Interviewer: Okay! So, now if we could talk about what the numbers on the scale mean to you. What numbers on the scale do you think correspond to someone who is doing well?

Respondent: That's doing well?

Interviewer: Yeah!

Respondent: I guess around 8 and 9 and 10.

Interviewer: And what about the number that corresponds to someone who is not doing well?

Respondent: Um, I'd say like 5 and 4.

In the example above, the respondent ignored the lower end of the scale to describe the "the worst possible life" and instead used what is considered the middle range of the scale. The lack of a full use of a response scale is problematic because it leads to responses that are either upwardly or downwardly biased and may make it difficult to detect differences across respondents, in particular, differences that might be small but meaningful (i.e., a child who is flourishing versus one who is doing pretty well).

More generally, data from the cognitive interviews suggested that there was a lack of variability in responses when: (a) item thresholds were too low or failed to distinguish between high and low scores or (b) items were inherently desirable and elicited social desirability bias (the tendency to provide responses that are viewed favorably).

To improve variability in the response scales, it is clearly necessary to select or develop items that have at least moderate variability. Also, when possible, our

results suggest that it is advisable to tap into behaviors in lieu of attitudes. Behaviors provide a more concrete anchor on which to base questions, which is especially important for abstract concepts. Similarly, when revising items, we relied, whenever possible, on the use of frequency scales. This practice captures greater variability, especially for socially desirable items, since frequency scales allow adolescents and parents to report, not whether, but how “often” something occurs.

In tackling social desirability, we worked hard to use or develop high-threshold items. We increased item thresholds or revised items to make it more difficult for all (or most) respondents to easily respond affirmatively. We also included items that had greater specificity, again, to provide a concrete anchor for responses. And we tried to develop negative items to tap the lack of a positive characteristic. Additionally, we included a short scale with psychometric properties that have already been established, in order to detect social desirability bias in the course of our psychometric analyses.

2.3.7 Lesson 7: Developing Congruent Response Options

Match response options with underlying constructs. The results of the cognitive interviewing suggest that, when possible, survey developers should match the response options to the underlying construct the question is addressing. For example, if you want to know how important something is, use a scale that ranges from “not at all” to “very important” instead of an attitudinal item (I think X is important) on an “agree” scale. Using agree/disagree items in such an instance requires two cognitive tasks: (a) deciding how important one thinks X is and (b) translating one’s beliefs to match the agree/disagree scale. Using a scale that taps into the underlying construct eliminates the need for the second cognitive task (Dykema et al. 2011). This is especially important in order to decrease the cognitive load for adolescents because, developmentally, they are still developing the capacity for higher-level thinking.

Also, response scales should match the frequency with which the underlying construct is done. For example, under environmental stewardship “recycling” should have an “everyday” response option but “plant trees” should not.

However, a problem pertaining to a frequency scale (for example, never, once or twice a month, once or twice a week, almost every day), in comparison to an agree scale, was found in that some adolescents and parents had difficulty matching their answer to the response options provided because they had arrived at a proportional answer (e.g., about three-fourths of the time), but the response scale asked them to provide a frequency. The following quote from a 12-year-old White female provides an example of this problem:

Interviewer: Now, for the last set of questions, we used a new set of response choices. We had “Never,” “Once or twice a month,” “Once or twice a week,” and “Almost every day.” Did you have any trouble picking an answer choice?

Respondent: Yeah!

Interviewer: Um, can you tell me a little bit more about that?

Respondent: Um, so questions I wasn’t thinking in like a month or a week. I was just thinking in general, like more specifically, like I wasn’t thinking about every two weeks, but like, every time it happened. Not like every day! Like, I don’t go to the grocery store, like every day, but every time we do go, we do use reusable bags.

As such, adolescents thought they needed a middle category to reflect an answer that was not dichotomous, as illustrated by the quote below from a 13-year-old Black female (she refers to these items by their alphabetic order).

Interviewer: And, now I’m going to ask you to look at ... page 4 [in handout]. These are “Yes” or “No” questions ... about a close friend. And, so please answer them and when you’re finished, I’ll have some follow-up questions for you.

Respondent: This is just talking about our friends—my friends, right?

Interviewer: Yeah! So, yeah ... it’s a close friend that you have.

Respondent: It’s not in between sometimes, so I’ll go with “Yes.”

Interviewer: So, you think that for “B” is less of a “Yes” or “No” and more of a sometimes question?

Respondent: And “C.”

Interviewer: For “B” and “C” you wish there was like a “Sometimes” option?

Respondent: Yeah... and “F” because sometimes my friend doesn’t like doing things I like doing. Like, going to a school party that we had, she didn’t want to go. That made me mad. ... And for “I” because my best friend told a secret to this girl, about this boy that I like.

2.4 Discussion

In this chapter, we summarized the key lessons learned through cognitive testing for developing survey items of positive adolescent development for both adolescents and their parents. We used these lessons to further refine the items that we developed and to construct a survey that was administered to a national sample of parents and their adolescent children (see also [Chap. 3](#)).

Specifically, to identify the most promising measures to pilot we: (a) selected those that showed the most variance based on the results of the cognitive interviews, where appropriate; (b) selected or refined items so that they had clear or salient reference points (such as school or close friends, school year vs. calendar year); (c) eliminated those items for which we had evidence that they were subject to social desirability; (d) focused on items that were behavioral in nature, again, to improve the variability in responses; (e) limited the constructs and, within constructs, the questions asked of parents to those they were most likely to have information on and were likely to observe; (f) dropped items that were either ambiguous in meaning or whose responses could have multiple interpretations;

and (g) developed concrete items for abstract constructs and cut items that were written abstractly or that were considered vague by participants.

Additionally, we selected items within constructs that focused on salient aspects of adolescents' lives while tapping into the underlying construct, as defined by our literature review. Also, as noted above, recognizing that not all parents have the information needed to report on all constructs or, within constructs, on all items we added a "don't know" response to all items in the parent survey. Likewise, based on prior research and the results of cognitive testing, which indicated that spirituality may be a difficult construct to ask of all adolescents, we added a "don't know" response category for the majority of items asked of adolescents in this construct. An analysis of the use of "don't know" responses by parents including the characteristics of parents who do and do not use the "don't know" option may provide insights into which parent is the best reporter and whether the quality of parent reporting varies by the gender composition of parent-child dyads or by some other characteristic such as age of child or frequency of communications. Comparisons of parent and adolescent reports from the pilot survey will also provide important information about the level of agreement between parent and adolescent and how much this varies by topic or by parent-child characteristics. This information will be important in determining what parents can be asked to report about accurately and when direct reports from adolescents are needed.

References

- Beatty, P., & Schechter, S. (1994). An examination of mode effects in cognitive laboratory research. *Proceedings of the Survey Methods Research Section, American Statistical Association* (pp. 1275–1280). Alexandria, VA: American Statistical Association.
- Caskey, M. M., & Anfara Jr., V. A. (2007). *NMSA Research summary: Young adolescents' developmental characteristics*. Association for Middle Level Education website. Retrieved from <http://www.amle.org/Research/ResearchSummaries/DevelopmentalCharacteristics/tabid/1414/Default.aspx>
- de Leeuw, E., Borgers, N., & Smits, A. (2004). Pretesting questionnaires for children and adolescents. In S. Presser, J. Rothgeb, M. P. Couper, J. T. Lessler, E. Martin, J. Martin, & E. Singer (Eds.), *Methods for testing and evaluating survey questionnaires* (pp. 409–429). Hoboken, NJ: Wiley.
- DeMaio, T. (1993). *Protocol for pretesting demographic surveys at the Census Bureau (Census Bureau monograph)*. Washington, DC: U.S. Bureau of the Census.
- Devellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed., Vol. 26). Thousand Oaks, CA: Sage.
- Dykema, J., Schaeffer, N. C., & Garbarski, D. (2011, November). *Measuring political efficacy: A comparison between agree/disagree versus construct-specific items*. Paper presented at the meeting of the Midwest Association for Public Opinion Research, Chicago, IL.
- Forsyth, B. H., & Lessler, J. T. (1991). Cognitive laboratory methods: A taxonomy. In P. Biemer, R. Groves, L. Lyberg, N. Mathiowetz, & S. Sudman (Eds.), *Measurement errors in surveys* (pp. 393–418). New York, NY: Wiley.
- Groves, R. M., Fowler, F. J. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2009). *Survey methodology* (2nd ed.). Hoboken, NJ: Wiley.

- Hess, J., Rothgeb, J., Zukerberg, A., Richter, K., Le Menestrel, S., Moore, K. A., et al. (1998). *Teens talk: Are adolescents willing and able to answer survey questions?* Paper presented at the meeting of the American Statistical Association Section on Survey Research Methods, Alexandria, VA.
- Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied Cognitive Psychology*, 5, 213–236.
- Krosnick, J. A., & Presser, S. (2010). Question and questionnaire design. In P. V. Marsden & J. D. Wright (Eds.), *Handbook of survey research* (2nd ed., pp. 263–313). Bingley, UK: Emerald Group Publishing Limited.
- Krueger, R. A., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). Thousand Oaks, CA: Sage.
- Patton, M. C. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Presser, S., & Blair, J. (1994). Survey pretesting: Do different methods produce different results? *Sociological Methodology*, 24, 73–104.
- Sattoe, J. N. T., von Staa, A., Moll, H. A., & On Your Own Feet Research Group. (2012). The proxy problem anatomized: Child-parent disagreement in the health related quality of life reports of chronically ill adolescents. *Health and Quality of Life Outcomes*, 10(10). DOI: [10.1186/1477-7525-10-10](https://doi.org/10.1186/1477-7525-10-10)
- Schechter, S., Blair, J., Hey, J. V. (1996). Conducting cognitive interviews to test self-administered and telephone surveys: Which methods should we use? *Proceedings of the Survey Methods Research Section, American Statistical Association* (pp.10–17). Alexandria, VA: American Statistical Association.
- Scott, J. (1997). Children as respondents: Methods for improving data quality. In P. B. L. Lyberg, M. Collins, E. DeLeeuw, N. S. C. Dippo, & D. Trewin (Eds.), *Survey measurement and process quality* (pp. 331–350). New York, NY: Wiley.
- Scott, J. (2000). Children as respondents: The challenge for quantitative methods. In P. Christensen & A. James (Eds.), *Research with children: Perspectives and practices* (pp. 87–108). London, UK: Falmer Press.
- Strussman, B. J., Willis, G. B., & Allen, K. F. (1993). *Collecting information from teenagers: Experiences from the cognitive lab*. Paper presented at the meeting of the American Statistical Association Section on Survey Research Methods, Alexandria, VA.
- Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology*. San Francisco, CA: Jossey-Bass.
- Tourangeau, R., & Bradburn, N. M. (2010). The psychology of survey response. In P. V. Marsden & J. D. Wright (Eds.), *Handbook of survey research* (2nd ed.). Bingley, UK: Emerald Group Publishing Limited.
- Tourangeau, R., & Rasinski, K. A. (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological Bulletin*, 103, 299–314.
- Willis, G. B. (1999). *Cognitive interviewing: A “How To” guide*. Research Triangle Park, NC: Research Triangle Institute.
- Willis, G. B. (2004). *Cognitive interviewing and questionnaire design: Better questions are ours for the asking*. Paper presented at the 2004 meeting of the American Association for Public Opinion Research, Phoenix, AZ.
- Willis, G. B. (2005). *Cognitive interviewing: A tool for improving questionnaire design*. Thousand Oaks, CA: Sage.
- Zukerberg, A. L., & Hess, J. (1996). *Uncovering adolescent perceptions: Experience conducting cognitive interviews with adolescents*. Paper presented at the meeting of the American Statistical Association Section on Survey Research Methods, Alexandria, VA.

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2014, VII, 105 p. 58 illus., Softcover

ISBN: 978-94-017-8606-5