

Chapter 2

Methodological Issues in Studying Personal Values

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The growing body of literature on personal values has yielded both conceptual and methodological developments. Both are reflected in the growing number of instruments developed to measure personal values. The psychometric characteristics of any specific instrument have methodological implications. Thus, for example, a short questionnaire may be less reliable but easier to administer than a long one. The psychometric properties of the instruments carry not only methodological, but also conceptual implications. These methodological and conceptual implications are the focus of the current chapter.

We start by deconstructing the definition of values presented in Chap. 1 in this book (Sagiv and Roccas), and discussing methodological implications of each element of the definition. In the second part of the chapter, we discuss a pressing issue in value measurement—the development of shorter versions of measures of values. The third part discusses and compares methodologies used to prime and change values. Additionally, the chapter includes an appendix that reviews some of the many instruments used to measure values (Appendix “[Value Measures](#)”).

In this chapter, we focus on self-report measures of personal values. Self-reports are typically seen as the most appropriate measure of values because values represent subjective motivational goals. Some researchers have used other methods, however. For example, Portman (2014) analyzed speeches of leaders to assess their personal values. For a review of such methods of assessment, see Fischer, Chap. 10 in this book.

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Part I: From Theory to Measurement and Back

Values are **abstract, desirable** goals. Their importance is **stable over time and across situations**. Values **vary in their importance**; the more important a value is to a person, the more likely she is to act in ways that promote the attainment of that value (Kluckhohn 1951; Rokeach 1973; Schwartz 1992). Values are cognitive representations of basic motivations and **are structured according to their compatibilities and conflicts** (Schwartz 1992).

We next discuss the implications of each of the highlighted elements in the definition for the measurement and manipulation of values.

Values Are Abstract

Values are abstract goals. Accordingly, the original measures of values developed by Rokeach (RVS 1973) and Schwartz (SVS 1992) presented the participants with an abstract task. The participants receive a list of value items, each consisting of a word followed by a short description in parentheses (see an example for the SVS in Fig. 2.1). Respondents are instructed to evaluate the importance of each value. To do so, they have to introspect and decide which importance score best describes the importance they attribute to each abstract goal. For example, a respondent has to decide whether the importance of an abstract goal (e.g., equality) corresponds to a rating of 6 or of 5 (in the SVS) or to a ranking of 3 or 4 (in the RVS). This is a difficult task: Not only are the values abstract, but also pinpointing their exact subjective importance is hard. People are likely to be able to easily distinguish between values to which they attribute little importance, and those that they deem as very important, but determining the degree of importance for some values might be a daunting task.

Recognizing these difficulties, Schwartz developed another instrument, labeled the Portrait Value Questionnaire (PVQ, Schwartz et al. 2001). This instrument was designed to measure values in a more concrete and therefore easier way. It contains

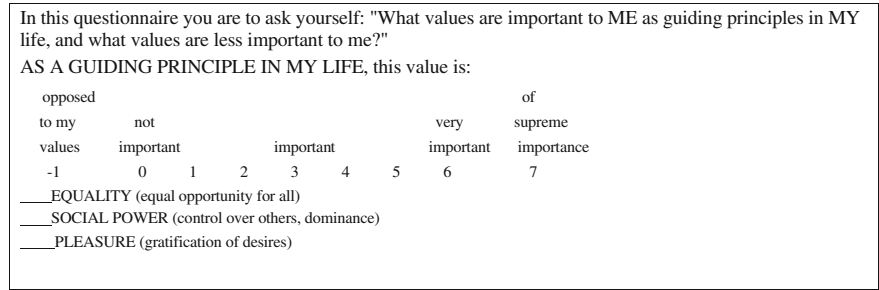


Fig. 2.1 Task instructions for the SVS (Schwartz 1992)

HOW MUCH LIKE YOU IS THIS PERSON?						
	Very much like me	like me	some- what like me	a little like me	not like me	not like me at all
He thinks it is important that every person in the world be treated equally. He believes everyone should have equal opportunities in life.	☐	☐	☐	☐	☐	☐
It is important to him to be in charge and tell others what to do. He wants people to do what he says.	☐	☐	☐	☐	☐	☐
He seeks every chance he can to have fun. It is important to him to do things that give him pleasure.	☐	☐	☐	☐	☐	☐

Fig. 2.2 Task instructions for the PVQ-40 (Schwartz et al. 2001)

short descriptions of individuals, in terms of the values that are important to them. For example, “He/She believes that people throughout the world should live in harmony. Promoting peace among all groups in the world is important to him/her” (universalism). The response scale is also easier to use: The participants are asked to report how similar to them is the person described, and each response is labeled (see Fig. 2.2). The PVQ has different versions for male and female participants so that the gender of the individuals described in the questionnaire corresponds to the gender of the respondent. To date, there are several versions of the PVQ, varying in the number of items (see Appendix “Value Measures”: 21, Davidov et al. 2008; 40, Schwartz et al. 2001; 57, 2012, Chap. 3 in this book; see also Schwartz and Cieciuch 2016).

Another relatively concrete measure of values is the Picture-Based Value Survey for Children (PBVS-C, Döring 2008; Döring et al. 2010; Cieciuch et al. 2013). This instrument, designed to measure values of elementary-school-aged children, concretizes values by using pictures of a specific object, action or situation that are familiar to children (see Fig. 2.3; Appendix “Value Measures”). The recent Animated Value Instrument (AVI) took a similar approach (Collins et al. 2017; Appendix “Value Measures”).

Studies that compared the various measures, employing multi-trait-multi-method techniques, typically revealed strong convergent and discriminant validity (e.g., Oishi et al. 1998; Schwartz et al. 2001). For example, the correlation between benevolence scores measured with the PVQ and benevolence scores measured with the SVS was 0.55. This correlation was stronger than any other correlation with value scores measured with either the PVQ (0.03 to −0.32) or the SVS (0.11 to −0.40) (Schwartz et al. 2001).

So far there is not enough research that systematically compares the different measures with regards to their relationships to external variables (e.g., traits and attitudes) and to behaviors. It is possible, for example, that the SVS is better suited to predict abstract attitudes and behaviors (e.g., self-ratings of religiosity or general

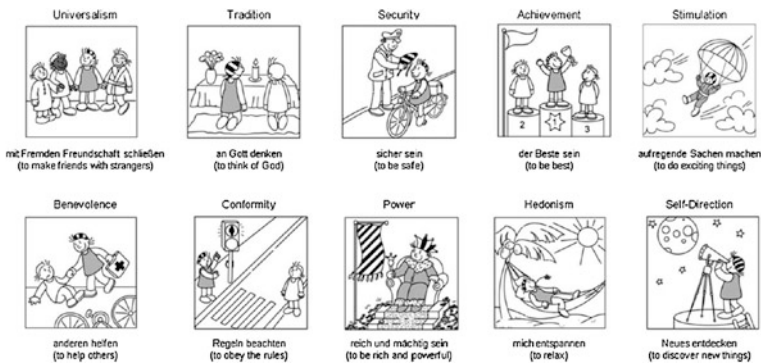


Fig. 2.3 Exemplary items from the PBVS-C (Döring 2008). The respondents see the label underneath each picture, but not the name of the value. Andrea Blauensteiner/AE Bilsky

attitudes toward protecting the environment) whereas the PVQ is better suited to predict more tangible behaviors (e.g., church attendance or recycling). Alternatively, it is possible that the SVS is a better predictor of behaviors than the PVQ (both abstract and concrete) because the SVS is abstract and hence may be a more valid measure of values. Future research is needed to further compare the predictive validity of each measure.

Values Are Inherently Desirable

Values are defined as inherently desirable and worthy. Few value items (e.g., social power, devout, and obedient) are viewed as undesirable by some people, but all values are desirable to most people (Roccas et al. 2014; Schwartz 1992). Consequently, individuals attribute high importance to most values (see Sagiv and Roccas, Chap. 1 in this book). This characteristic of values requires building instruments that encourage respondents to distinguish between the importance of different values, rather than merely reporting that all values are important. One way to address this problem is by using an asymmetrical response scale that includes more response options that denote high importance than response options that denote low importance (Schwartz 1992). In addition, the instructions often attempt to explicitly encourage respondents to distinguish among their values (e.g., “try to distinguish as much as possible between the values by using all the numbers.” SVS 1992).

Another way to address the tendency to attribute high importance to most values is by means of instructing participants to rank a list of values according to their importance, or to compare the importance of all possible pairs of values included in a list. Both methods effectively induce participants to express distinctions between

the importance they attribute to their different values. These techniques have, however, some important limitations. Later in this chapter, we discuss the advantages and disadvantages of rating versus ranking in value measurement.

The inherent desirability of values imposes an important restriction on value measurement. Even in cases in which one is interested in studying the effects of a specific value, accurate measurement requires that the respondents consider all values to assess the importance they attribute to each. Only by considering all basic motivations can the participant become aware of her subjective value hierarchy: That is, although all values are important to her, not all are important to the same degree. Asking participants to report the importance of only one value (e.g., openness to change) results in manipulating the accessibility of that value, or priming it, rather than accurately assessing it, because almost all values are deemed desirable and important. Accordingly, researchers have relied on this attribute of values to manipulate their accessibility and demonstrate their impact on behavior.

Consider for example our research on values and identification with the nation, in which we aimed to show that values influence the importance of the nation, as part of one's identity. The participants were randomly assigned to one of two value conditions: In the "openness to change values" condition, they were asked how much they agreed with a set of value statements such as "I want to be independent and self-reliant," "it's important that people have freedom of thought and action." In the "conservation values" condition, the participants were asked about their agreement with statements such as "my family's safety is very important to me," "I think it is important that people act politely." Thus, the participants in each experimental condition were presented with statements regarding one set of values only. This instrument was structured as a questionnaire. However, it did not serve to measure individual differences (i.e., capture variance in the importance attributed to the values), but rather served to induce homogeneity in the responses of the participants: All participants were expected to express high agreement with the statements they read. Accordingly, for example, 48 of 55 participants in the openness to change condition used one of the two highest scores to rate their agreement with the first statement. Following the value manipulation, the participants reported their identification with the nation. As hypothesized, participants in the conservation condition reported higher importance of their national identity than the participants in the openness to change condition (Sagiv et al. 2012).

The Importance of Values Is Relatively Stable

Values importance is trans-situational and stable across time (see a review in Bardi and Goodwin 2011). In recent years, longitudinal studies found high test-retest stability even after several years (e.g., Milfont et al. 2016; Schwartz 2005; Vecchione et al. 2016). This feature of values has important methodological implications for value research. Due to their stability, values serve as predictors of future preferences, choices and behavior. Thus, for example, values, as measured

1–2 months prior to the national election, predicted the party to which the participants voted in those elections, as reported 1–2 months later. These findings were demonstrated in two unrelated studies, conducted in two different cultures: Italy (Schwartz et al. 2010) and Israel (Roccas et al. in preparation). The patterns of findings were similar. In both cultures conservation values predicted voting for right-wing (vs. left-wing) parties. The similar patterns indicate similarity in the meaning of voting for left versus right-wing parties in the two cultures.

In another on-going research conducted among faculty members of a public university, respondents' conservation values, measured at time 1, positively predicted deference identification and negatively predicted alienation from management as measured at time 1, as well as four years later (time 2, Sagiv and Elster in preparation). Importantly, the correlations were similar in magnitude when values and identification were measured at the same time (0.22 at time 1, 0.20 at time 2) and when values were measured at time 1 and identification was measured four years later (0.22). The same pattern emerged for alienation from the management (−0.22 and −0.21 when values and alienation were both measured at time 1 and at time 2, respectively, vs. −0.31 when values were measured at time 1 and alienation 4 years later).

In sum, reflecting their stability, values serve as predictors of future preferences and behavior. From a methodological point of view, this means that researchers do not have to measure values and their predicted variables at the same session. Values can be measured before the measurement of the dependent variables in question. In fact, they can also be measured after—unless there is a reason to suspect a temporary or chronic value change. This advantage is especially important when researchers are interested in the relationships of values to other self-reported constructs, because they can measure values at a different time, thus minimizing common method bias (see Podsakoff et al. 2003).

Values Vary in Their Importance

Although all values are considered worthy and important to most people, values vary in how important they are to each person. The more important a value is, the more likely people are to act in ways that allow them to express it and attain the goals underlying it. Accurately measuring individual differences in the importance of values is crucial because differences in the importance of values predict behavior. Such accuracy may be affected by the way values are presented (e.g., abstract vs. concrete, discussed above), and by the form of response required from the participants, which we discuss next. Two main forms of response are used in most instruments: ranking and rating.

Ranking. Questionnaires that use ranking require respondents to compare the items to each other and to hierarchically order them. In the case of values, the respondents are required to order the values in the questionnaire from the most important to the least important. A notable example for a value instrument that uses

ranking is the Rokeach Value Survey (RVS 1973, see Panel A of Table 2.3, Appendix “Value Measures”) which consists of two value lists. The respondents are asked to rank the importance of all values in each list. Thus, respondents are asked to go over the list, find the most important value and rank it as 1, find the second most important value and rank it 2, and so on and so forth. This method is compatible with the view of values as inherently comparative (Rokeach 1973). Accordingly, respondents are required to judge the relative importance they attribute to each value compared to all other values and choose their value hierarchy (Alwin and Krosnick 1985). Ranking can thus help respondents gain a better understanding of their implicit value hierarchy (Ng 1982).

Ranking has some disadvantages as well. First, it is often difficult and taxing for respondents, demanding considerable cognitive sophistication and concentration (Alwin and Krosnick 1985). This is especially true when respondents are asked to rank a long list of items, as is done in the case of values (Schwartz 1992). Moreover, since ranking does not allow respondents to assign equal importance to different values, it ignores the possibility that people’s internal representations of values might not include such fine distinctions. It is therefore possible that individuals report differences between values even when these differences are negligible (Maio et al. 1996), to make comparisons between values that they consider non-comparable (Braithwaite and Law 1985; Schwartz and Cieciuch 2016), or even make random responses in order to meet the task requirements (Ovadia 2004). In addition, ranking poses a statistical challenge: The sum of the ranks for any individual respondent equals a constant, producing a linear dependency among the set of ranked items. Consequently, conventional statistical techniques are not always appropriate (Alwin and Krosnick 1985; Rankin and Grube 1980).

Rating. Value questionnaires that use rating ask participants to consider each item independently of how they view the other items, and rate its importance on a scale. Compared to ranking, rating is considerably easier, especially for long lists (Schwartz 1994). Moreover, unlike ranking, rating does not force respondents to discriminate among values that they genuinely consider as having the same importance. Finally, the items are independently evaluated and are hence suitable for standard statistical analyses (Alwin and Krosnick 1985).

Ranking and rating differ in their very essence as measures of the importance of values. Ranking assesses the importance of values relatively to each other. In contrast, rating assesses the importance as per an “objective” scale. It may allow, for example, expressing negative importance of a specific value. Moreover, ranking assumes equal gaps of importance between all values. For example, the gap between the importance attributed to the values ranked second and third is assumed to be the same as the gap between the importance attribute to the values ranked fifteen and sixteen. It thus imposes a fixed distribution for all respondents. Rating, in contrast, allows one person to rate five values as most importance and five others as least important, and another person to rate only one most important and two least important values.

This flexibility captures real differences in value distribution (i.e., some people attribute high importance to more values than others do). However, it also makes rating susceptible to individual differences in response style. Thus, the same “objective” score (i.e., 6 on a –1 to 7 scale) may have different subjective meanings to different people. Individual differences in scale use may hence distort comparisons across individuals. Centering value scores—that is, partialing out the respondent’s mean importance across all values—somewhat corrects for this problem and is hence the common practice among value researchers (e.g., Schwartz 2009; see review in Smith 2004. For exceptions see Fischer 2004; He and van de Vijver 2015). Ranking is less susceptible to such response style biases (Schwartz and Cieciuch 2016).

Researchers have tried to assess the reliability and validity of each method compared to the other. Rankin and Grube (1980) compared ranking and rating versions of RVS. The two techniques produced similar results, indicating satisfactory test–retest reliabilities, and good convergent and construct validity. In contrast, Maio et al. (1996) compared the predictive validity of rated and ranked values. They found that both methods yielded most of the predicted correlations with attitudes, but rated values predicted attitudes better than ranked ones.

To-date, most value measures use rating (see Table 2.3 in Appendix “Value Measures”). Several researchers have developed instruments that employ techniques that aim to overcome the disadvantages of both rating and ranking. Thus, for example, the Computerized Paired Comparisons of Values (CPCV, Bilsky et al. 2015) and the Pairwise Comparison Value Survey (PCVS, Oishi et al. 1998) present the participants with series of pairs of value types (e.g., conformity vs. security, see Fig. 2.4). For each pair, the participants are asked to report which of the two values is more important to them, and to what extent. This technique requires, however, a large number of items: comparing ten values to each other results in 45 comparisons. It is therefore impossible to employ this technique for a long list of values. Other instruments that combine aspects of both ranking and ranking are the

WHICH of the two values is more important to you, and TO WHAT EXTENT is it more important?



Fig. 2.4 Exemplary item from the CPCV (Bilsky et al. 2015)

PBVS-C (Döring 2008; Döring et al. 2010) and the Best–Worst technique developed by Julie Lee and her colleagues (SVBWS, Lee et al. 2008; AVI, Collins et al. 2017).

In sum, so far there is not enough research to determine whether differences in response format affect the validity of value instruments. However, using rating, ranking or pairwise comparisons reflects assumptions regarding the representations people have of their values (e.g., do people distinguish between the importance of all values, or can they attribute the same importance to different values?), and has methodological implications (e.g., completion-time and difficulty of the task). In choosing the instrument, researchers should therefore consider their underlying assumptions and implications.

Values Are Structured According to Their Compatibilities and Conflicts

One of the main conceptual developments proposed by Schwartz was moving from a list of value items, to conceptualizing values in terms of their underlying motivations. As detailed in Chap. 1 in this book (Sagiv and Roccas), Schwartz identified ten basic motivations and derived ten values (or value types) that represent them. The ten values aim at a comprehensive representation of all universal human motivations (Schwartz 1992, 1994). Their dynamic nature is reflected in the circular structure of their interrelations. This structure reflects the conflicts and compatibilities among the values: Adjacent values in the circle represent compatible motivations whereas values at opposite directions express conflicting motivations. As described in Chap. 1 (Sagiv and Roccas), this structure has received extensive validation in cross-cultural research.

The structure of values has implications for the ways values are stored in our memory. Pakizeh et al. (2007) examined people's speed in judging the importance of values and showed that people are quicker to determine the importance of a specific value if they have immediately previously rated a motivationally related value, than if they have immediately previously rated a motivationally unrelated one. Thus, it is easier to judge the importance of a value if you just had the chance to think about a different value that has compatible or contrasting motivational implications. This structure also has implications for the structure of value change. In a series of longitudinal studies, Bardi et al. (2009) found that an increase in the importance of a value is usually accompanied by slight increases in the importance of adjacent values and in slight decreases in the importance of opposing values.

Implications of the structure of values for understanding the relationships of values to behavior. The circular structure of values implies that the ten values are not ten distinctive categories, but rather form a continuum of motivations. Thus, values should be treated as an integrated structure of motivations. To understand how values are related to a specific behavior, researchers should consider the

spectrum of values. In general, a behavior is likely to be associated similarly with values that are adjacent in the value structure. The correlations with the behavior are likely to decrease monotonically when moving around the circle from the most positively related to the most negatively related value (Schwartz 1992). Importantly, the most positively and the most negatively related values are not necessarily opposing. However, once theory-driven hypotheses are set for the values that most positively and most negatively predict the behavior, the circular structure of values allows the researcher to predict the expected pattern of associations with all ten value types.

Consider the example of the extensive research of values and religiosity. Ample studies have hypothesized and found systematic correlations between values and religiosity (see reviews in Roccas and Elster 2014; Saroglou et al. 2004). Figure 2.5 presents the correlations of values and religiosity in a sample of 1892 Israeli students that we collected. The respondents completed the SVS (Schwartz 1992) and reported their religiosity. The findings portray a very similar pattern to the one found in the past: Religiosity is most positively correlated with tradition values and is also positively correlated with the other conservation values (conformity and security). Religiosity is negatively correlated with openness to change values (hedonism, stimulation and self-direction). Two values yield correlations somewhat different from most past studies: The correlation with benevolence is near zero (compared to a low positive correlation in most past studies) and the correlation with universalism is negative (compared to near zero in most studies, but see Roccas and Schwartz 1993, on cross-cultural differences).

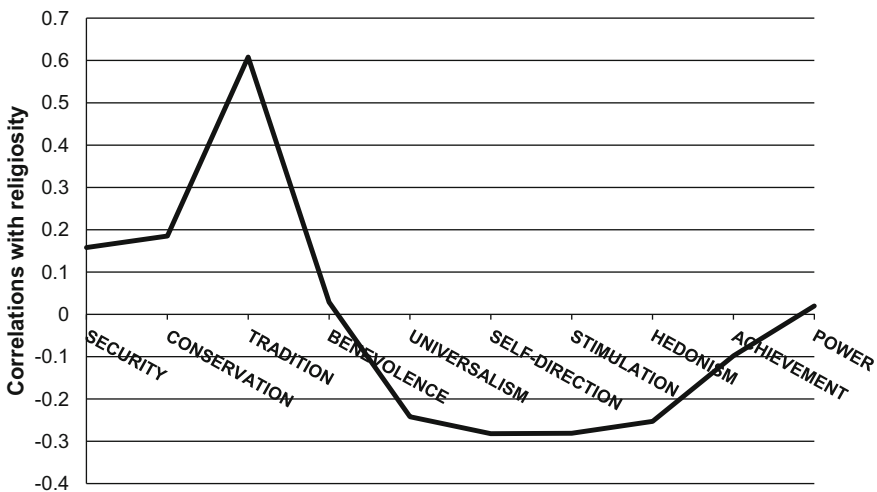


Fig. 2.5 Correlations between religiosity and the ten values. $N = 1892$. Values were assessed using a 46-item version of the SVS, which includes all the items from the original version that have been validated for cross-cultural use (Beyth-Marom et al. 2003)

We compared the overall pattern in Fig. 2.5 to the pattern found by Roccas and Elster (2014) who reviewed 24 samples in past studies. The correlation between the two sets of ten correlations was 0.90, reflecting strong resemblance, along with some differences.

Thus, when studying the relationships of values to behavior, researchers can generate and test integrative hypotheses regarding all ten values. When an integrated hypothesis predicts the full pattern of associations, even insignificant correlations provide meaningful information. As exemplified here, integrated hypotheses allow researchers to test not only predictions for specific positive or negative correlations, but also the extent to which the full hypothesized pattern of relationships is confirmed or is consistent with past findings (for published empirical examples, see Roccas et al. 2002, for values and traits; Sagiv and Schwartz 1995, for values and tolerance; Sagiv et al. 2011, for values and behavior in social dilemmas).

Alternative partitions of the value circle: Broad versus narrow values. Another consequence of conceptualizing values as a motivational continuum is that the value circle can be partitioned in various ways. Originally, Schwartz's prototype model suggested distinguishing the ten values that represent the ten basic universal motivations he identified (Schwartz 1992, 1994). Each of the ten values is expected to predict choices, preferences, and behaviors that express the motivations underlying them. For example, security values were found to be positively correlated with trust in institutions (e.g., Devos et al. 2002), with voting for right-wing political parties (e.g., Schwartz et al. 2010), and with micro worries (worries about oneself or one's family) regarding health and safety (Schwartz et al. 2000).

A theory regarding the antecedents or consequences of values could address broader distinctions between values, however. Thus, for example, rather than focusing on security values as the predictor of behavior, researchers sometimes choose to focus on the higher-order value of conservation, which is comprised of tradition, conformity, and security values (Schwartz 1992) and expresses the motivation to preserve the status quo. In the examples above, trust in institutions and voting for right-wing parties were positively correlated with the higher-order conservation values. In this case, focusing on the higher-order conservation values seems advantageous. First, the measure of conservation is likely to be more internally reliable than the measures of tradition, conformity, and security values. Moreover, when these three values are all theorized to be similarly related to the dependent variable (i.e., trust or voting), then studying the higher-order conservation values is more parsimonious and could overcome random differences in the relationships observed for each of the three. In contrast, the research on worries revealed that health and safety micro worries were positively correlated with security, but not with conformity or tradition values. In this case, a focus on the higher-order conservation values would not reveal the relationships.

A theory could also focus on narrower conceptualizations of values. For example, in Chap. 3 in this book, Schwartz describes a refinement of the value theory that distinguished between 19 values (PVQ-RR, Schwartz et al. 2012; Cieciuch et al. 2014). In the example of security values, the refined theory distinguishes between

personal security and societal security, which together form the original security value. Future research could investigate whether trust in organizations and voting for right-wing political parties are more strongly related to societal security whereas health/safety worries are more strongly related to personal security.

The choice of measuring broad versus narrow values (e.g., security values vs. the broader conservation values, or the narrower societal security values) holds conceptual implications. The larger the number of values a researcher considers (4 vs. 10 vs. 19), the narrower is the motivation that each expresses. The broadness of the value measured (and the motivation it expresses) may have implications for the relationships with behavior. Ample research on attitudes revealed that specific attitudes predict specific behaviors better than general behaviors (Ajzen and Fishbein 1973; see a meta-analysis in Kraus 1995). This may be the case for values as well. Following the above example, societal security values may predict attending a right-wing protest better than security values.

However, past studies found that relatively broad values predict specific behaviors such as performance in a creative task (e.g., Dollinger et al. 2007; Kasof et al. 2007) or cheating in an experiment (e.g., Feldman et al. 2015). It is therefore possible that narrow and broad values could be equally good predictors of specific action. The solution to this puzzle may rely on the mechanisms through which values are related to behavior. Thus, for example, to the extent that the value-behavior link is mediated by attitudes, specific values are likely to be better predictors of specific behavior. The value-behavior link, however, may be mediated not by attitudes, but rather by the interpretation of the behavior. Consider the example of cooperation in a social dilemma game. This situation could be interpreted differently by people who hold different values. Thus, those who emphasize benevolence values that reflect the motivation for concern and care for others could see it as an opportunity to help others, whereas those who emphasize power values could see it as an opportunity to gain profit. Each of these interpretations leads to a different action (contributing/not contributing, respectively, Sagiv et al. 2011). Hence, broad values could to be good predictors of specific actions (such as contribution in a dilemma game)—providing that the specific action is viewed as a means to express the underlying motivation. Future research is needed to shed light on this issue.

The choice of measuring broad versus narrow values also has methodological implications. The narrower the construct measured, the more reliable it is likely to be. For example, the alpha-Cronbach coefficient of a 3-item measure of societal security is likely to be higher than the coefficient of a 3-item measure of the broader construct of security. Broad constructs have by definition lower internal reliability. Indeed, the internal reliabilities of measures of Schwartz's original theory, such as the SVS or the PVQ40, often yield relatively low alpha-Cronbach coefficients (0.50–0.80, see discussions in e.g., Davidov et al. 2008; Schmitt et al. 1993; Schwartz and Rubel 2005; Schwartz and Rubel-Lifschitz 2009). The longitudinal stability of these measures, as well as their construct and predictive validity was established in numerous studies. This indicates that the low internal reliability of

broad values does not reflect a measurement problem, but rather the broad nature of the constructs.

In sum, in the first part of this chapter, we discussed methodological implications of five aspects of the value definition—abstraction, desirability, stability, variance of importance, and motivational structure. We aimed to show that considering these methodological issues and applying them to value research could further contribute to our conceptual understanding of values. We next discuss a methodological issue relevant to many value researchers—the development of short measures of values.

Part II: Developing Short Measures of Values

Research investigating the principal measures of values (RVS, SVS, PVQ-40, PVQ-RR) indicates that they are reliable and valid. However, these measures are all lengthy and require relatively long time to complete. Consequently, researchers often look for ways to come up with shorter measures of values. As discussed above, measuring only one value (or one higher-order value) is not a good solution, because to fully understand the value-behavior relationships one has to consider the full spectrum of values. Moreover, measuring only one value results in priming, rather than assessing that value. Thus, shortening the measure of values by including only the values that are at the focus of the research might lead to misleading findings.

One alternative is to select some of the items of the existing instruments so that all the spectrum of values is represented, but each is measured by a smaller number of items than in the original instrument. This approach has been used, for example, in creating short measures of personality traits (e.g., TIPI, Gosling et al. 2003). In shortening well-established questionnaires by sampling items, researchers usually choose the items that are most similar to each other—that is, the items that result in the highest reliability. However, the high reliability might come at the expense of construct and predictive validity (see a discussion in Boyle et al. 2015). In the case of values, using few items to assess each value is likely to make it difficult to fully assess the broad constructs that values are. For example, a reliable index of security values, containing the “national security” and “social order” items (hence excluding the “reciprocation of favors,” “family security,” and “clean” value items) may be highly reliable, but limited in measuring the societal aspect of security while neglecting the personal aspect.

We exemplify the impact of shortening the value questionnaire by selecting few items with the sample of 1892 Israeli students who completed the SVS (Schwartz 1992) and reported their religiosity (see above). How would different shortened measures of tradition correlate with religiosity? We composed a series of 2-item measures of tradition, including all possible combinations of the five value items measuring tradition values in the SVS: respect for tradition (item 18), moderate (32), humble (36), accept my portion in life (44) and devout (51). As revealed in Fig. 2.6, the 2-item measures vary in their internal reliability as well as in their

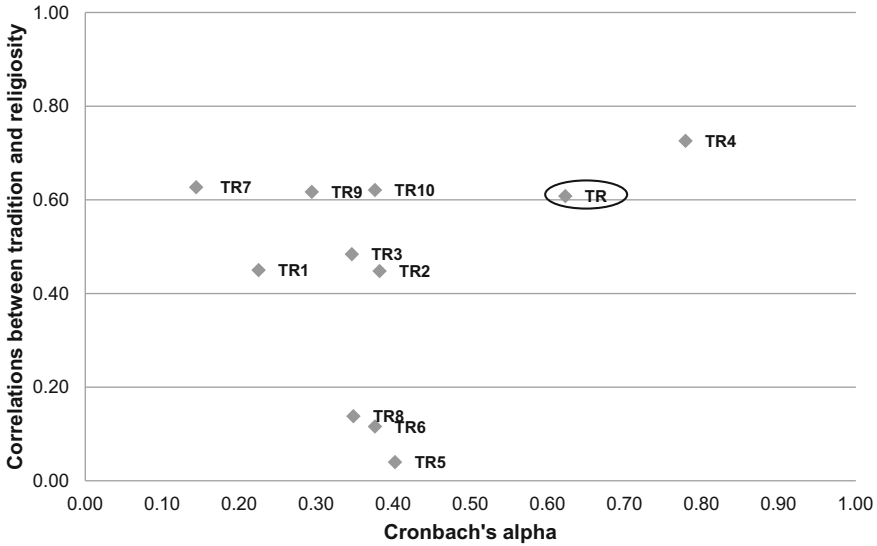


Fig. 2.6 Correlations between tradition and religiosity as a function of the internal reliability of the index (α). The circled item is the original, 5-item tradition index in the SVS (Schwartz 1992)

relationships with religiosity (i.e., predictive validity). Figure 2.6 (see also Table 2.1) maps all 11 indices measuring tradition values according to their reliabilities (x axis) and their correlations with religiosity (y axis). The original (full) tradition index is circled.

Figure 2.6 and Table 2.1 show that the most reliable index (#4, $\alpha = 0.78$) has the strongest correlation with religiosity ($r = 0.73$). However, indices with a much weaker reliability (#9, $\alpha = 0.29$; #10, $\alpha = 0.38$) and even the index with the weakest reliability (#7, $\alpha = 0.14$) are still strongly correlated with religiosity (0.62, 0.62, and 0.63, respectively). Moreover, while the most reliable index yields the strongest correlation, the index with the second strongest reliability (#5, $\alpha = 0.40$) yields a near zero correlation ($r = 0.04$).

The refined theory (Schwartz et al. 2012; Schwartz, Chap. 3 in this book) distinguishes two aspects of tradition. The first is labeled “tradition” and consists of respect for tradition (item 18) and devout (51). The second is labeled “humility” and consists of moderate (32), humble (36), and accepting my portion in life (44). As could be expected, religiosity is strongly correlated with the “tradition” aspect (#4, $r = 0.73$) and only weakly correlated with the “humility” aspect (#5, #6, #8, $r = 0.04$ – 0.14). Importantly, there are five indices that comprise of one item of tradition and one item of humility. These indices thus measure the broad tradition construct. They all yield strong correlations with religiosity (0.45–0.63).

In sum, researchers who are interested in a specific aspect of tradition values could use a homogeneous, narrow and reliable index of either “humility” or “tradition.” In contrast, researchers who are interested in the broad construct of tradition

Table 2.1 Correlations between tradition indices and religiosity, and Cronbach’s alpha

	TR	TR1	TR2	TR3	TR4	TR5	TR6	TR7	TR8	TR9	TR10
Correlation with religiosity	0.61*	0.45*	0.45*	0.48*	0.73*	0.04	0.12*	0.63*	0.14*	0.62*	0.62*
α	0.62	0.23	0.38	0.35	0.78	0.40	0.38	0.14	0.35	0.29	0.38

N = 1892
Items are pairings of tradition items taken from the SVS. TR includes all 5 items. TR1: 18,32, TR2: 18,36, TR3: 18,44, TR4: 18,51, TR5: 32,36, TR6: 32,44, TR7: 32,51, TR8: 36,44, TR9: 36,51, TR10: 44,51
**p* < 0.01

values could use a short index comprised of items of both aspects of tradition. This measure will have weaker internal reliability, but adequate content validity which may yield predictive validity.

An alternative approach to shorten value measures is to use broader items to measure each value type, thus reducing the number of items needed. One example is the SSVS measure (Lindeman and Verkasalo 2005). This measure consists of ten items, one for each value type. Each value-item lists all value items from the SVS that measure that value. For example, the item for security reads “Security, that is, social order, national security, reciprocation of favors, family security, clean.” The Short and Broad SVS (SBSVS) was recently developed by Roccas and her collages (based on Oppenheim-Weller et al. submitted. See Schori-Eyal et al. (2017); Sekerdej and Roccas 2016; for a similar approach see Knafo and Assor 2007). In this instrument, each value item consists of the broad definition of that value type. For example, the item for security reads “Safety, harmony, and stability of society, of relationships, and of self.” These instruments thus fully assess each value type, and in that sense have better construct validity. However, using a single item for each value may reduce their reliability.

Figure 2.7 presents four samples in which the relationships between values and religiosity were investigated. Two of the samples used the SVS and two used the SBSVS. The patterns of the relationships of values and religiosity are remarkably similar to each other and to the pattern found in earlier research which we described in this chapter: Religiosity is most positively correlated with tradition values. It is also positively correlated with conformity and security but to a lesser extent. Religiosity is negatively correlated with hedonism, stimulation, and self-direction values. The correlations between the patterns found in each sample are very high, ranging from 0.89 to 0.97. Thus, in this case, the SBSVS measure of values yielded the same patterns of relationships as the SVS.

In sum, in the second part of the chapter, we discussed two common ways to create a short measure of values: selecting items of existing measures and creating a limited number of broad items. In discussing the first approach, we addressed the seemingly paradoxical tradeoff between reliability and construct validity. Sampling items may result in highly reliable measures that capture only a fraction of the value construct of interest. The second approach, forming short measures of broad items,

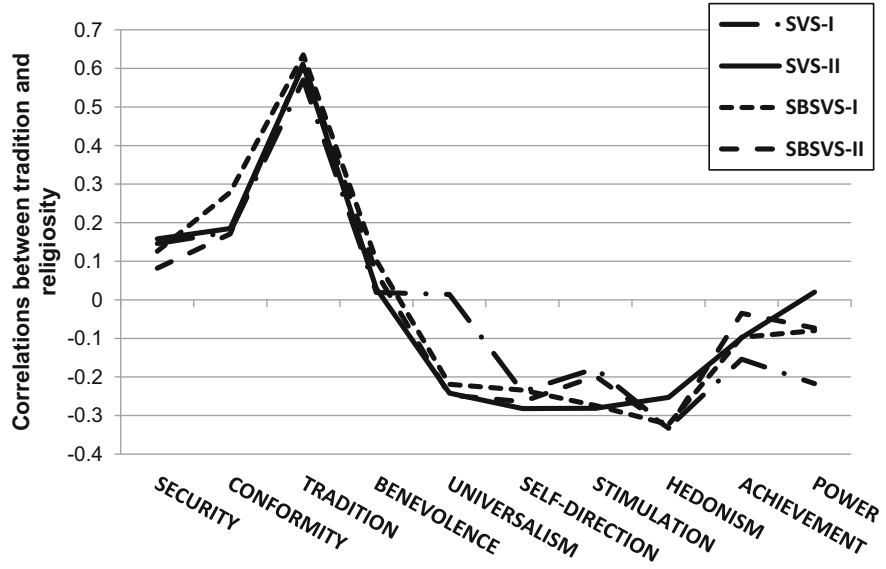


Fig. 2.7 Correlations of values with religiosity. SVS-I: $N = 197$, SVS-II: $N = 1892$, SBSVS-I: $N = 203$, SBSVS-II: $N = 190$

can overcome the concern of limited construct validity. However, in relying on one item only to measure each value construct, it is impossible to assess the internal reliability of the instrument.

Part III: Measuring, Priming, and Changing Values

So far we discussed the measurement of personal values. Measuring values allows researchers to investigate their associations with behavior; it does not allow, however, for causal inferences. In recent years, researchers have attempted in experimental studies to show that values are not only related to behavior, but also influence it. Such attempts are still rather rare. We next review studies that experimentally examined causal effects of values to exemplify the variety of instruments used to manipulate values as well as the range of topics and variables that have been studied.

Typically, to study the effects of values on behavior researchers have used priming techniques, aiming to show that when a value is rendered highly accessible it is likely to yield a behavior consistent with that value (see Table 2.2). The manipulations differ in the extent to which they are explicit. Below, we shortly discuss the different types of manipulations.

Table 2.2 Summary table of value priming techniques

Research	Primed values	Explicit/implicit	Priming technique	Dependent variable
Roccas (2003)	Self-enhancement versus self-transcendence	Explicit	Agreement with items representing the value domain	Prestige-identification relationship
Amit et al. (2010, Study 3)	Conservation values versus control	Explicit	Agreement with items representing the value domain	Social projection
Verplanken and Holland (2002, Studies 1, 3)	Environmental values versus control	Explicit	Forming impression of a target based on his values	Choosing a television set
Verplanken and Holland (2002, Study 2)	Universalism values versus control	Implicit	Unscrambling sentences	Choosing a television set
Maio et al. (2009, Study 2)	Stimulation versus tradition versus control	Implicit	Unscrambling sentences	Evaluate themselves as better than average
Maio et al. (2009, Study 3)	Security versus self-direction versus control	Implicit	Unscrambling sentences	Cleaning tables
Maio et al. (2009, Study 4)	Security versus self-direction versus control	Implicit	Memorizing and recalling value-words and adjectives	Curiosity
Maio et al. (2009, Study 5)	Achievement versus benevolence versus control	Implicit	Memorizing and recalling value-words and adjectives	Exam, helping the experimenter

Explicit Priming of Values

Drawing on the notion that all values are desirable, discussed earlier in this chapter, Roccas (2003) reasoned that drawing attention to any one value would render it highly accessible and would therefore yield attitudes, preferences, and behaviors that are consistent with that value. One way to manipulate the accessibility of a value is therefore to explicitly draw attention to items that reflect that value. Because all values are desirable, such a prime will “remind” the person that the value in question is important for him or her, consequently increasing the likelihood of acting on that value.

Figure 2.8 provides an example with two of the items used by Amit et al. (2010) to prime the accessibility of conservation values. The participants in the conservation condition read and stated their agreement with five items, all drawn from the conservation values domain. In the control condition, participants were presented with five items unrelated to values (e.g., “I like fresh fruits and vegetables”). In both conditions, the participants stated their agreement with each item (see Fig. 2.8).

Importantly, this instrument—although phrased as if it is intended to measure stable individual differences—is not designed to measure the importance of values. Rather, the items used in the conservation condition were designed to elicit strong agreement, thus temporarily raising the perception of oneself as attributing high importance to these values. Accordingly, a manipulation check revealed that following the priming manipulation, participants in the conservation condition attributed higher importance to conservation values than those in the control condition, thus confirming the validity of the explicit prime (Amit et al. 2010, Study 3).

A few studies used this type of explicit priming to manipulate the accessibility of values and test their subsequent effects. Thus, for example, Roccas (2003) revisited the established relationships between perception of a group as prestigious and the identification with that group. Roccas proposed that values moderate these relationships. She hypothesized and found that the prestige-identification relationship is stronger among those who emphasize self-enhancement values, and therefore care a lot about social status and prestige, than among those who emphasize the conflicting self-transcendence values.

To show causality in these relationships, Roccas randomly assigned the participants to one of two priming conditions: Self-enhancement versus self-transcendence. The participants in the self-enhancement values condition were presented with items drawn from the self-enhancement values domain, whereas those in the self-transcendence condition were presented with items drawn from the self-transcendence value domain. As hypothesized, the relationship between perceived prestige of the group and the extent of identification with it was stronger for participants who were primed with self-enhancement values than for those primed with self-transcendence values (Roccas 2003, Study 2).

In another example, Amit et al. (2010, Study 3) investigated the impact of conservation values on social projection. The researchers employed the manipulation in Fig. 2.8 to prime conservation values (vs. control). As hypothesized, the participants in the conservation priming condition showed higher levels of social projection than those in the control condition. In a pioneering research on the influence of values on overt behavior, Verplanken and Holland (2002, Studies 1, 3) employed a different explicit technique to prime values. The participants in their study were presented with a target person, described by a list of values. The manipulation read:

We want you to form an impression of a person whom we will call Mark. Mark is 22 years old. On the next page you will find a list of *values* that Mark adheres to. Consider this as a “profile” of Mark. Each value is stated and briefly described. Read the list of values, and while doing so try to form an accurate impression of Mark. For instance, try to imagine his profession, hobbies, main character traits, political views, and so on (Verplanken and Holland 2002, p. 437).

It is important that people abide by the law.....	Strongly disagree	1	2	3	4	5	6	7	Strongly agree
My family's security is very important to me...	Strongly disagree	1	2	3	4	5	6	7	Strongly agree

Fig. 2.8 Explicit manipulation of conservation values (examples)

In the experimental condition, 12/20 values were environmental values. In the control, in contrast, none of the values were related to the environment. After they wrote their descriptions and were thanked, the participants were presented with 20 television sets, of which they had to choose one. As hypothesized, the participants in the environmental values condition tended more to pick an environmentally friendly television set.

This priming manipulation explicitly refers to values. However, it is different from the previous one in an important way. Whereas Roccas's priming task directs attention to one's own values, Verplanken and Holland's prime is indirect, allegedly focusing on another person. The effect of the two priming techniques is similar: Participants were more likely to act on the values primed. Together, the two methods indicate a causal effect of values on value-consistent action.

Studying the effect of explicit primes of values is significant, because it mimics many real-life situations, in which individuals, groups, or social institutions bring about attention to one type of values, aiming to promote behaviors that are consistent with that value. Thus, for example, teachers may stress to their students the importance of achievement values, hoping to encourage them to invest time and effort in their school tasks; military organizations often endorse the importance of discipline and obedience (i.e., conformity values) to promote behaviors that are consistent with those values; and right-wing political parties often remind societal members about the importance of personal and national security, hoping to turn voting in their favor. In these examples, the accessibility of a specific value is rendered high; the person is "reminded" that she/he indeed emphasizes that value and is hence more likely to act upon that value.

However, using explicit priming to investigate how values influence behavior carries methodological limitations. Explicitly focusing on one set of values might raise demand characteristics and thus artificially influence reactions. Using implicit primes of values could overcome this limitation. We next review studies that took this approach.

Implicit Priming of Values

In their research, Verplanken and Holland (2002, Study 2) employed an implicit priming technique: The participants were asked to unscramble sentences that included value-related words. Thus, for example, the researchers implicitly primed environmental values (i.e., universalism values), by presenting the participants with scrambled sentences which included words drawn from this value domain. As hypothesized, implicitly priming values led to behavior that was consistent with that value—providing that the primed value was central to one's self. Specifically, participants who viewed universalism values as central to their self-definition and were assigned to the universalism priming condition, were more likely to choose an environment-friendly television set than participants for whom universalism values were not central, and/or those whose values have not been primed.

A similar implicit value prime was employed by Maio et al. (2009, Study 2). Studying overt behavior in the laboratory, the authors showed that participants who

were primed with scrambled sentences containing security-related items cleaned their desks more than those primed with self-direction related items. Participants in the control group fell in-between.

Maio et al. (2009, Studies 4–5) developed an additional implicit priming task. In each value condition, the participants were presented with a list of value-related words drawn from the domain of their value condition, and a list of clothing items (e.g., boots). Participants in the control condition received words relating to colors instead of to values. These words were located in a column labeled *Main Terms*. An adjacent column was labeled *Adjectives*. The values were presented adjacent to positive adjectives (e.g., happy, perfect), and the clothing items were presented adjacent to adverbs (e.g., normal, ordinary). The participants were asked to memorize items for the “*Main Terms*” column, together with the adjective adjacent to them. Three minutes later they were asked to recall the item with the adjacent adjective. In the next stage, the experimenter explained that the words in this task could be classified as clothing items or social categories, and the adjectives could be classified as positive or negative. The participants were then asked to repeat the task, with new words, allegedly for the experimenter to examine whether they recalled the words better once they knew the categorization.

Using this implicit priming technique (Study 4), the researchers primed self-direction versus security values (vs. control). The participants were then presented with various quiz questions. After solving each question, they could ask for more information about that question. The researchers calculated the number of questions for which the participant asked for additional information (of the number of questions she/he did not know) as a measure of curiosity. As hypothesized, curiosity was higher among participants primed with self-direction than among those primed with security values. Participants in the control condition fell in-between. In a subsequent experiment (Study 5), the participants were primed with either achievement or benevolence values (or none). They were then asked to volunteer to participate in future research. As hypothesized, those primed with benevolence values volunteered more than those primed with achievement values (the responses of participants in the control condition fell in-between).

Taken together, these studies indicate that implicitly priming a value serves to promote actions consistent with that value. However, these implicit priming techniques also have some limitations that raise conceptual questions. In manipulating values implicitly, researchers use words such as freedom, social order, successful, and honest. These words are value related, in the sense that they represent abstract desirable motivations. However, the same words could represent not only values, but also specific goals, traits, and sometimes even social situations. For example, the word “honest” could prime benevolence values, but it can also render highly accessible a specific goal (not cheating on a test), a trait, or a situation in which someone was dishonest. It is therefore impossible to judge whether values are primed, or other, content-related constructs (on the relationships between values and related constructs, see Chap. 1, Sagiv and Roccas).

To overcome this limitation, Roccas (e.g., Roccas et al. 2010) has developed another implicit technique: One that primes values per se. In this manipulation, the participants are presented with descriptions of six students who had allegedly applied to live in a university dormitory. The participants are asked to read the descriptions and to allocate two applicants to each of three rooms, matching them

according to how similar they are. There is no explicit mention of values. However, the applicants are described in terms of their values. In fact, their descriptions are adopted from the PVQ (Schwartz et al. 2001) (e.g., “It is important to him to live in secure surroundings. He avoids anything that might endanger his safety”). Thus, although values are not mentioned explicitly, the items direct attention to the importance of different values. In each experimental condition, all six applicants are described in terms of the same value. Figure 2.9 provides an example for the manipulation of conservation values.

Below are the descriptions of six students who applied for a room in the dormitories.

Each room will house two students. Past experience indicates that the more similar the students, the better they get along as roommates.

Please help us decide how best to sort the students in the rooms

The students:

- Student A: It is important to him to be polite to other people
- Student B: He believes he should always show respect to his parents and to elders
- Student C: He thinks people should follow rules at all times, even when no-one is watching.
- Student D: It is important to him always to behave properly.
- Student E: He wants to avoid doing anything people would say is wrong.
- Student F: It is important to him to be obedient.

The Rooms:

Room 1

Student _____

Student _____

Room 2

Student _____

Student _____

Room 3

Student _____

Student _____

Please write your recommendation regarding which students should share each room.

Fig. 2.9 Manipulation of value accessibility: conformity condition

To test this manipulation, participants were primed with either conservation or openness to change values. Following the manipulation, the participants completed the SVS (Schwartz 1992). Verifying the validity of the manipulation, the importance the participants attributed to conformity (i.e., conservation) versus self-direction (i.e., openness) was higher in the “conservation” condition than in the “openness” condition (Amit and Sagiv 2013).

Employing this priming manipulation, Roccas et al. (2010) showed that participants primed with conservation values identified with their nation more than those primed with openness to change values. In another study, Amit and Sagiv (2013, Study 4) found that applicants in a university orientation day were more likely to locate and visit a camera store on campus when primed with values that were congruent with the complexity of the information they received earlier (openness to change values for complex information as opposed to conservation values for simple information).

Sagiv et al. (2012, Study 3) examined the effects of priming values on identification with the nation, using both explicit (Sample 1) and implicit (Sample 2) priming. The participants in both samples were randomly assigned to conservation versus openness to change conditions and were subsequently asked about the importance they attributed to their national identity. The patterns of findings were virtually the same using the explicit or the implicit primes. As hypothesized, the participants in the conservation values prime condition attributed higher importance to their national identity than those in the openness to change values condition.

The research reviewed so far shows that priming one set of values—either explicitly or implicitly—results in action that is consistent with that value, thus indicating a causal influence of values on attitudes, preferences, and behavior. In many other real-life settings, however, multiple values are simultaneously salient and it is the hierarchy among various important values that influences choices and behavior. What happens when the full hierarchy of values is accessible? In studying cooperative versus competitive behavior, Sagiv et al. (2011) examined the effect of making all values salient. All participants reported their values. Two weeks later, half of the participants reported their values again. Thus, their full value hierarchy was primed. Then, all participants played an intergroup dilemma game. Asking participants to report their values immediately prior to playing the game increased the strength of the relationships between participants’ values, as measured separately two weeks prior, and their overt behavior (i.e., monetary contribution in the dilemma game).

In sum, the studies reviewed above employed a variety of priming tasks, showing that raising the accessibility of values, either explicitly or implicitly, affects attitudes, preferences, and behaviors. This is still a small body of research, however. Additional experimental studies are needed to establish the causal effect of values on behavior. Furthermore, it is possible that studies in which primed values did not affect behavior were conducted but not published. Failing to find an effect of primed values could reflect methodological limitations of the priming task or the procedure employed. The lack of effect may also indicate that while values are related to another construct, the specific relationship does not reflect a causal influence.

Consider for example the study of values and identification with the nation reviewed earlier (Sagiv et al. 2012). In that study, the authors investigated the relationships of values to four modes of identification. They theorized that although all four modes of identification are related to personal values, only the cognitive mode (labeled *importance*) will be affected by values. The researchers reasoned that importance identification is largely context-based and is therefore the most susceptible to change, and that directing a person to think about her self-concept (e.g., the importance of conservation/openness values) will affect the importance attributed to being part of the national group. Consistently with this hypothesis, participants in the conservation versus openness to change conditions differed in their importance identification, but not in the other three modes (commitment, superiority, and deference). In this example, some identification modes (e.g., superiority and deference) are positively *correlated* with conservation values, but are not *affected* by the accessibility of these values.

Value Change

The research reviewed above provides evidence for changes in self-reported values following priming procedures. Some researchers thus consider priming a facilitator of change in values (see review in Bardi and Goodwin 2011). Others reason, however, that priming procedures do not change the *importance* of the primed values, but rather affect their *accessibility*. Because all values are desirable, accessible values are important values, and as such they are likely to yield value-consistent behavior. The change in accessibility is temporary, however, and therefore does not constitute a stable change in the importance of values (e.g., Roccas 2003; Sagiv et al. 2011; Verplanken and Holland 2002).

Value researchers have discussed other, more stable, patterns of change in the importance attributed to values. Reviewing past literature, Bardi and Goodwin (2011) proposed a theoretical model in which they describe five facilitators of value change. One is the priming facilitator which we discussed so far. This facilitator works through an automatic path. Bardi and Goodwin identified four others facilitators—consistency maintenance, identification, adaptation, and direct persuasion. These facilitators work, at least to some extent, through an effortful cognitive route (Bardi and Goodwin 2011; see also Arieli et al. 2014, below). The literature provides ample indirect or correlational-based evidence for value change (see reviews in Bardi et al. 2014; Bardi and Goodwin 2011). Attempts to induce change in empirical experiments are still rare, however.

The most notable exception is Rokeach (1973, 1975), who introduced the Self-Confrontation procedure as a method designed to induce value change. In the first step of this procedure, the participants complete a value questionnaire, reporting their value hierarchy. They are then presented with feedback which is designed to create a sense of inconsistency between their own value hierarchy and that of their fellow group members (e.g., other students at the university). Rokeach

reasoned that the participants will change their values to reduce these alleged discrepancies. This procedure has been employed in many studies, resulting in some value change (as well as attitude and behaviors, see reviews in Maio et al. 2009; Rokeach 1973; Rokeach and Ball-Rokeach 1989). Maio et al. (2009) have recently showed that this procedure affects not only the targeted values, but also the values that oppose them in the value circle (which change in the opposite direction). In this study, the values were measured immediately after the manipulation, thus it is not clear whether the change persisted over time.

Taking a different approach, Arieli et al. (2014) developed and empirically validated a 30-min intervention, designed to increase the importance of benevolence values. Building on the theoretical model proposed by Bardi and Goodwin (2011), this intervention includes aspects of three facilitators of value change: priming, consistency maintenance, and deliberate self-persuasion. Thus, it is designed to work on both the automatic and the effortful routes.

The intervention was presented as part of a study on persuasion and consisted of four parts. The first part was designed to promote value change through the effortful route. The participants were asked to read a summary of several articles which provided evidence indicating that in general, individuals are more other-focused (i.e., helpful, cooperative, and compassionate) than they realize, and that benefiting others is eventually self-benefiting. Thus, in this part of the intervention, the participants were provided with information that explicitly conveys the importance of benevolence values. The main goal of this part was to increase both knowledge and motivation, which are both required for central (i.e., effortful) processing (Petty and Cacioppo 1986). The second and third parts of the intervention were both designed to employ the consistency maintenance and priming facilitators of values change. In the second part, the participants were asked to complete a checklist regarding their everyday lives in the past month. The list included various actions showing kindness or helping others (e.g., calling a sick friend to ask how he is; giving a friend a present for her birthday). The researchers reasoned that most people will check most of the actions in the list (because it was comprised of everyday behaviors that most people do). Consequently, they will conclude that they are benevolent. This exercise served to prime benevolence values and to increase their importance in order to maintain consistency between values and action.

In part 3, the participants had 5 min to write a story, describing an experience in which they have made a positive impact on someone else's life. As in part 2, the reasoning was that reflecting on such a story will prime benevolence. This should lead to greater importance assigned to these values, to maintain consistency. Finally, in the fourth part, the participants had 10 min to write an essay attempting to convince others of the importance of being benevolent, generous, cooperative, and helpful. This part was therefore designed to employ effortful self-persuasion to facilitate the change in the importance of benevolence values.

Arieli et al. (2014) tested this intervention in three laboratory experiments. In each experiment, the participants were randomly assigned to either benevolence or a control condition. The participants in the benevolence condition experienced the intervention detailed above. In the control condition, the participants experienced an

intervention with the same format, but with a different content unrelated to any specific value (e.g., perceiving personality as entity vs. incremental). The findings revealed an increase in the importance attributed to benevolence values immediately after the intervention (Studies 1–2) which also affected their pro-social behavior (volunteering, Study 2). Furthermore, the change in values remained four weeks after the intervention (Study 3). No other value has changed.

Interestingly, the importance attributed to benevolence values prior to the intervention was strongly correlated with the importance attributed four weeks later ($r = 0.83$ and 0.79 for two value measures). Thus, benevolence values changed following the intervention, but the hierarchy across individuals remained: Those who emphasized benevolence relatively to others before remained so after the intervention.

Arieli and her colleagues thus provide a promising path to investigate value change in the laboratory and to facilitate value change in real-life settings. More research is needed to identify the boundaries of the intervention and the conditions under which it is likely to be effective. Moreover, the intervention consists of four parts, which employ different facilitators of value change. It would be beneficial to unpack the intervention and investigate the contribution of each of its components. Is there one component that is particularly effective (or ineffective)? Is the effect of the four parts additive? Or is the interaction between all parts required to elicit change? Further research is needed to deepen our understanding of the process through which external factors may induce value change.

Recently, Tamir et al. (2015) employed the fourth part of this intervention to increase the desirability of values-related emotions. They randomly assigned participants to one of four value conditions (self-enhancement, self-transcendence, openness to change, and conservation) and asked them to write an essay to convince others of the importance of the values of their condition. The participants in this pilot study perceived this task as relatively easy and their essays as relatively persuasive. The manipulation affected the desirability of some value-related emotions (e.g., trust was most desirable in the self-transcendence condition; anger was least undesirable in the self-enhancement condition). But the authors did not examine whether the manipulation led to changes in the importance of values.

In sum, so far there have been few attempts to induce long-term change in values through experimental manipulations. This may be due to the stable nature of values. Furthermore, intentionally inducing value change in the context of research raises ethical concerns. The self-confrontation procedure, for example, requires presenting the person with information designed to create a false sense of discrepancy between the person and others in the environment. The fictitious information is intended to facilitate unpleasant processes of social-comparison and thus generates dissatisfaction. The four-step intervention (Arieli et al. 2014) overcomes these limitations: Other than the purpose of the study, all information provided to the participants is true and the process is free of unpleasantness. Still, because values are a core aspect of the self-concept, the mere attempt to induce value change raises ethical questions, especially if the change is persistent across time. Arieli et al. (2014) attempted to increase the importance of benevolence values—values that are among the most

important to most people in most cultures. In other words, they increased the importance of values that were very important to begin with. Would the procedure be as effective in changing non-consensual values such as power or tradition values? And if so, would that be ethical?

Summary

In this chapter, we focused on methodological issues regarding the study of values. We began with unpacking the definition of values, discussing different aspects of the definition and their implications for research on values and behavior. We then addressed the challenge of developing short measures of values and discussed advantages and limitations of various approaches. To further compare the numerous instruments developed to measure values, we included Appendix “[Value Measures](#).” Finally, in the third part of the chapter, we discussed methodological issues regarding the processes of value priming and values change.

Throughout the chapter, we discussed measuring, priming, and changing values as three distinctive categories. We reason, however, that the boundaries between the three are fuzzy. Instruments developed to measure values, such as the RVS, SVS, and the many others that followed, aim to capture the value priorities of individuals who complete them. However, the distinction between measuring values and manipulating or shaping them is not always clear. Methodological choices such as the number of value types measured, the broadness of the measure, or the context in which the values are measured could all affect the priorities of the values reported. Thus, attempts at measuring values could sometimes result in priming values. The distinction between priming the accessibility of values and changing their importance is also sometimes blurry. Some researchers consider priming as a value change whereas others stress that priming change only the temporal accessibility of values. These two are conceptually different, but methodologically, often quite difficult to distinguish. This chapter thus portrays some of the challenges in investigating values and their relationships with behavior. These challenges reflect the complexity and richness of the construct of values, which will probably keep inspiring exciting research.

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Appendix: Value Measures

The research literature is rife with measures of values, attesting to the importance that the values construct has gained in the last decades. Table 2.3 lists the main instruments developed to measure basic values that correspond to the definition of values as desirable goals that serve as guiding principles. Allport and his colleagues (e.g., Vernon and Allport 1931) presented the earliest major work on values, setting the way for many studies to follow. They defined values differently, however, focusing on preferences for various life domains (art, religion, social, etc.). This measure is therefore not included in Table 2.3. Panel A of the table presents the seminal Rokeach Value Survey (RVS, Rokeach 1973). Panel B lists the instruments presented by Schwartz. Panel C includes instruments developed by other researchers who draw on Schwartz's theory and are designed to measure the same value system. Finally, Panel D lists measures that do not draw on Schwartz's model, but correspond to the same definition of values. Content-wise, the instruments listed in Table 2.3 are very similar. They vary considerably, however, in important methodological aspects. Below, we discuss some of the major issues.

Level of abstraction. Most value questionnaires ask respondents to assess the importance of abstract values such as “equality” or “wealth” (e.g., RVS, Rokeach 1973; SVS, Schwartz 1992; PCVS, Oishi et al. 1998). In contrast, the Portrait Value Questionnaires (PVQ40, Schwartz et al. 2001; PVQ21, Davidov et al. 2008, PVQ-RR, Schwartz et al. 2012, see Schwartz, Chap. 3 in this book) are more concrete in that they consist of short descriptions of individuals, described in terms of what is important to them (i.e., in terms of values). The respondents are asked about the extent to which the person described is similar to them. The concrete instruments are considered easier to complete and were developed, among other goals, to measure children's values. Other relatively concrete measures are the Picture-Based Value Survey for Children (PBVS-C, Döring 2008; Döring et al. 2010), which consists of a list of pictures, each depicting a specific object, action, or situation, accompanied by a short title and the Animated Values Instrument (AVI, Collins et al. 2017), also designed for children, which includes 3–5 s animated scenarios that combine pictorial, auditory, and written information. Each scenario expresses a desirable motivational goal.

Length. The instruments vary in length, ranging from very short questionnaires (e.g., SSVS, Lindeman and Verkasalo 2005; the SBSVS, Sekerdej and Roccas 2016, the TIVI, Sandy et al. 2016; all consist of 10 items) to medium-size instruments (TwIVI, Sandy et al. 2016, 20 items; PVQ21, Davidov et al. 2008, 21 items; RVS, Rokeach 1973, 36 items; PVQ40, Schwartz et al. 2001, 40 items) to longer questionnaires (SVS, Schwartz 1992 and PVQ-RR, Schwartz et al. 2012, both 57 items; SVBWS, Lee et al. 2008, 55–66 items). Most questionnaires aim at comprehensiveness and thus assess all 10 value types. They therefore vary mainly in the number of items measuring each value type. Whereas the relatively long questionnaires include several value items for each type, the short ones consist of one or two item per value type.

Table 2.3 Summary table of value questionnaires

Measure	References	Theory	Categorization	# of items	Abstractness	Method	Instructions	Examples of items
<i>Panel A</i>								
Rokeach Value Survey (RVS)	Rokeach (1973)	Rokeach	Terminal/instrumental single values	2 lists (18 and 18 items)	Abstract	Ranking	Rank importance as guiding principle in your life	“Comfortable life (a prosperous life)”
<i>Panel B</i>								
Schwartz Value Survey (SVS)	Schwartz (1992)	Schwartz	10 values, 3–8 items each	56 (later 57)	Abstract	Rating	Rate importance as guiding principle in your life	“WEALTH (material possessions, money)”
Portrait Values Questionnaire (PVQ)	Schwartz et al. (2001)	Schwartz	10 values, 3–6 items each	40	Concrete	Rating	Indicate similarity of a target person to self	“It’s very important to him to show his abilities. He wants people to admire what he does”
PVQ-21/European Social Survey (ESS)—human values scale	Davidov et al. (2008)	Schwartz	10 values, 2–3 items each	21	Concrete	Rating	Indicate similarity of a target person to self	“It’s very important to him to show his abilities. He wants people to admire what he does”
PVQ-RR	Schwartz et al. (2012)	Schwartz’s refined theory	19 values, 3 items each	57	Concrete	Rating	Indicate similarity of a target person to self	“Protecting his public image is important to him”
<i>Panel C</i>								
Computerized Paired Comparisons of Values (CPCV)	Bilsky et al. (2015)	Schwartz	10 values, 45 pairwise comparisons	45	Abstract	Pairwise comparisons	Indicate which of the 2 values is more important to you, and to what extent it is more important	“Conformity” versus “security” (presented with respective descriptors)

(continued)

Table 2.3 (continued)

Measure	References	Theory	Categorization	# of items	Abstractness	Method	Instructions	Examples of items
Pairwise Comparison Value Survey (PCVS)	Oishi et al. (1998)	Schwartz	10 values	45	Abstract	Pairwise comparisons	Indicate which of the values you assign more importance to as guiding principle in your life	"Dutiful... power"
Animated Values Instrument (AVI)	Collins et al. (2017)	Schwartz	10 values, 21 subsets, 5 values each	105	Concrete	Best–worst scaling	Drag a yellow smiling face to the most like animation and a red frowning face to the least liked animation	"I want to be the best" (animated items combining verbal, visual-pictorial and auditory information)
Short Schwartz's Value Survey (SSVS)	Lindeman and Verkasalo (2005)	Schwartz	10 values, 1 item each	10	Abstract	Rating	Rate importance as guiding principle in your life	"Power, that is, social power, authority, wealth"
Schwartz Value Best–Worst Survey (SVBWS)	Lee et al. (2008)	Schwartz	10 values, 11 subsets, 5 or 6 values each	55–66	Abstract	Best–worst scaling	Choose the most and the least important to you as a guiding principle in your life	"Successful," "capable"... versus "protecting the environment," "a world of beauty"... versus "helpful"
Picture-Based Value Survey for Children (PBVS-C)	Döring (2008), Döring et al. (2010)	Schwartz	10 values, 2 items each	20	Concrete	Ranking	Place items according to the importance ascribed to them	Pictures, see Fig. 2.3

(continued)

Table 2.3 (continued)

Measure	References	Theory	Categorization	# of items	Abstractness	Method	Instructions	Examples of items
Short and Broad Schwartz Value Survey (SBSVS)	Sekerdej and Roccas (2016)	Schwartz	10 values, 1 item each	10	Abstract	Rating	Rate importance as guiding principle in life	"Living safely in an organized, stable place. Keeping one's family secure and happy"
Ten Item Value Inventory (TIVI)	Sandy et al. (2016)	Schwartz	10 values, 1 item each	10	Concrete	Rating	Indicate similarity of a target person to self	"He thinks it's important to be interested in things. He likes to be curious and to try to understand all sorts of things"
Twenty Item Value Inventory (TwIVI)	Sandy et al. (2016)	Schwartz	10 values, 2 item each	20	Concrete	Rating	Indicate similarity of a target person to self	"He thinks it is important that every person in the world be treated equally. He believes everyone should"
<i>Panel D</i>								
Chinese Value Survey (CVS)	Bond (1988)	None (data-driven)	None	40	Abstract	Rating	Indicate how important to you is each of the 40 items	"Filial piety" (obedience to parents, respect for parents)
Basic Value Survey (BVS)	Gouveia (1998, 2003)	Gouveia	6 values, 3 items each	18	Abstract	Rating	Rate importance as guiding principle in your life	"To enjoy challenges or unknown situations; to look for adventure"

Breadth. Value instruments also vary in the extent to which the items they include measure broad versus narrow constructs. Most instruments measure the ten values using the value items included in the pioneering RVS and SVS, either in an abstract manner (e.g., asking how important are helpful, freedom, successful, and social-power) or in a concrete manner (e.g., describing a person in terms of a value-item).

Recently, researchers have presented value measures that assess the ten values with broader measures. Whereas the original measures assessed several value items to measure each of the ten values, these new measures assess each value with one item, consisting of the definition of that value. Thus, for example, the CPCV (Bilsky et al. 2015) is a pairwise comparison instrument. Each pair includes the definitions of two of the ten values. Similarly, Roccas and her colleagues introduced the short and broad SVS (SBSVS) which includes 10 items, each consists of the definition of a value type and the value items that represent it (Sekerdej and Roccas 2016). Thus, to assess security, this instrument asks about the importance the respondents attribute to “Living safely in an organized, stable place. Keeping one’s family secure and happy.” Taking a somewhat different approach, each of the ten items in the Schwartz Short Value Survey (SSVS, Lindeman and Verkasalo 2005) assesses a value type, by presenting all value items that represent that value type in the SVS.

Schwartz et al. (2012) have recently proposed the Refined Theory of Values, and the PVQ-RR that measures it (see Schwartz, Chap. 3 in this book). The PVQ-RR includes 57 value items. Each three measures one of 19 value types. These 19 values can be grouped into the original ten values. Thus, they are narrower measures.

Response format and response scale. Another aspect which distinguishes among the various instruments is the response format they employ. Most instruments employ rating, but some use ranking (e.g., RVS, Rokeach 1973), pairwise comparisons (e.g., PCVS, Oishi et al. 1998; CPCV, Bilsky et al. 2015) and best–worst scaling (SVBWS, Lee et al. 2008; AVI, Collins et al. 2017). See column 7 of Table 2.3 for details. The instruments using rating vary in the scale used. Thus, for example, the SVS focuses on ratings of value importance, whereas the PVQ measures employ a different scale, asking respondents how much the person in each description resembles themselves. Both scales employ asymmetric response scales. The response scale of the SVS, for example, ranges from –1 (opposing my principles) to 0 (not important) to 3 (important) to 7 (of extreme importance). The asymmetry of response scale of value measures was designed to reflect the strong desirability of most values to most people (Schwartz 1992).

Cross-cultural validation. In developing his theory of personal values, Schwartz (1992) took a cross-cultural approach. The theory was studied in 40 samples across 20 countries (a students and a teachers sample in each), and the findings were used to refine the earlier structure, proposed by Schwartz and Bilsky (1987, 1990). The theory, as presented in 1992, has later received support in students and teachers samples in more than 70 cultures, representing all major areas of the world. Despite challenges of sample selection and instrument translation, the findings pointed to near-universals in the content and structure of personal values. Consequently, researchers can study values in any culture using the SVS. Other instruments (e.g., the PVQ and RVS questionnaires) have been studied across cultures, albeit to a

lesser extent. More research is needed to test their cross-cultural equivalence (e.g., see Davidov et al. 2008; Schwartz et al. 2012). The short measures of values (SSVS, SBSVS, TIVI) were typically developed in a single culture. They therefore call for cross-cultural validation.

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