EFFECTS OF INTROSPECTION ABOUT REASONS FOR VALUES: EXTENDING RESEARCH ON VALUES-AS-TRUISMS

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In past research, analyzing reasons for values that involve promoting the welfare of others (i.e., self-transcendence values) caused them to change—a finding that occurs only when values lack prior cognitive support (Maio & Olson, 1998). In the present research, we tested whether analyzing reasons for values serving different motivations (e.g., conservation, self-enhancement) at different social levels (personal vs. societal) causes them to change. Experiment 1 replicated the finding that analyzing reasons for self-transcendence values causes these values to change, while extending this finding to three other types of values described by Schwartz (1992): conservation, openness, and self-enhancement values. Experiment 2 revealed the analyzing reasons effect for two types of social values described by Inglehart (1971): materialist and postmaterialist values. These results extend previous research on the malleability of values by showing that introspection has similar effects on many different kinds of values.

Like salmon relentlessly fighting their way upstream to spawn each year, many of these MPs are responding instinctively to the liberal, metropolitan values they hold dear: Indeed hold so firmly and deeply as to be barely conscious of having them. London (Daily Mail, July 22, 1998, p. 8).

This newspaper commentary suggests two important points about social values, which are abstract ideals that people consider to be important in their lives (Feather, 1990; Rokeach, 1973; Schwartz, 1992). First,
social values (e.g., equality, tolerance) are implicated in many important social issues and are often cited in political discussions. Indeed, psychological research has reified the importance of values by examining their role in a range of important social phenomena, such as ambivalence (Katz & Hass, 1988), stereotyping (Esses, Haddock, & Zanna, 1993), deviance (Feather & Cross, 1975), estrangement (Bernard & Maio, 2002), ideological reasoning (Tetlock, 1986), persuasion (Johnson & Eagly, 1989), and prosocial behavior (Maio, Olson, Allen, & Bernard, 2001). The available evidence indicates that values are central as psychological constructs (Feather, 1990; Rokeach, 1973; Verplanken & Holland, 2002).

The commentary also asserts that values are held so firmly and deeply that people fail to be conscious of them. As a result, people may not reflect on their values, and they may, in fact, find it difficult to retrieve arguments supporting their values. Consistent with this view, Maio and Olson (1998) proposed that values are widely shared and that this consensus reduces the perceived need to build cognitive support for values, even though there may be media debate over value-related issues. For example, following September 11, 2001, there has been extensive media discussion and polarized views over the measures needed to uphold national security (a conservation value) in Western nations, but there has been little debate about the desirability of national security per se. Its desirability is obvious, so extensive generation of reasons for and against this value has not occurred, nor is it regarded as necessary. In general, public discussions of values fail to reveal how values can be questioned (see also Maio, 2002) and, as a result, values may be sustained primarily by strong feelings and past behavioral experiences associated with values and not by cognitive, reasoned support. The extant research supports this values-as-truisms hypothesis, but it has examined only a small subset of values from contemporary models (Maio & Olson, 1998). Given the pitfalls of relying on a small sample of stimuli to form conclusions about a much larger population (Wells & Windschitl, 1999), it is vital that research reexamines this hypothesis for a larger and more representative set of values. The present research uses two cross-culturally validated and comprehensive models of values to address this issue.

PRIOR EVIDENCE

Although the values-as-truisms hypothesis is consistent with some prior conceptualizations of values (e.g., Inglehart, 1997; Keniston, 1965;
Tetlock, Peterson, & Lerner, 1996), other theory and research suggest that people exert substantial effort to elaborate their beliefs on personally relevant topics (e.g., Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986). Given that values are regarded as important guiding principles and psychological structures, it might be expected that people would exert considerable effort to elaborate their values. Indeed, many value theorists have operationalized values as conscious goals that can be articulated (Allport, 1961; Feather, 1995; Rokeach, 1973; Schwartz, 1992), which suggests that values can potentially exist as reasoned entities. In particular, Rokeach (1973) proposed that, as people mature, they think extensively about values in order to prioritize some values over others, which may lead to the development of cognitive support for these values.

To begin empirically examining this issue, Maio and Olson (1998) tested whether people possess cognitive support for self-transcendence values, which involve promoting the welfare of others (e.g., forgiveness, helpfulness; see Schwartz, 1992). Their paradigm for examining cognitive support was based on findings obtained by Wilson and his colleagues, who found that analyzing reasons for one’s attitude toward an object (e.g., a beverage) causes attitude change only when attitudes have a “strong, amorphous affective component with few supporting cognitions” (Wilson, Dunn, Kraft, & Lisle, 1989, p. 308). This effect depends on the absence of cognitive support because people who have little cognitive support are forced to report random reasons that may be inconsistent with their attitudes, causing their attitudes to change. In contrast, people who possess strong cognitive support can access reasons that are consistent with their attitudes, leading to no attitude change.

This logic can be extended to values. If people lack cognitive support for their values, then analyzing reasons for values should cause people to access a few novel, accessible thoughts that are sometimes more and sometimes less supportive of the values, causing value change. Maio and Olson (1998) found that participants who analyzed reasons for a set of self-transcendence values (e.g., forgiveness, helpfulness) changed their ratings of those values significantly more than did participants in the control condition. More important, the effect of analyzing reasons was eliminated when participants were given a prior opportunity to build cognitive support for the values. Thus, as with Wilson’s research on attitudes, the effect of analyzing reasons on value change appears to
reflect a lack of cognitive support for values. This explanation was supported by additional results. Specifically, participants were able to list (on average) only two reasons for each value, despite being able to list almost five reasons for liking or disliking different beverages (e.g., milk). Moreover, participants indicated strong positive feelings about the values and strong relations between feelings about values and ratings of value importance. Overall, this evidence supported the view that the motivational significance of values derives more from affective support than from cognitive support.

As expected, Maio and Olson (1998) also found very strong agreement with the self-transcendence values; in fact, participants gave stronger endorsements for the values than they did for the medical truisms (e.g., “mental illness is not contagious”) that had been examined by McGuire (1964). This finding was consistent with the fact that values are defined as abstract ideals that are important guiding principles in people’s lives (Rokeach, 1973; Schwartz, 1992), although there are individual differences in value endorsements. Indeed, it is the intrinsic importance of values that distinguishes them from related social psychological constructs, such as attitudes. Furthermore, values are central psychological constructs, which determine both attitudes and behavior (Gold & Robbins, 1979; Gold & Russ, 1977; Rokeach, 1973; Thomsen, Lavine, & Kounios, 1996). The notion that values are strong, central concepts in people’s motivational hierarchies is compatible with the values-as-truisms hypothesis because it assumes that the strength of values is drawn from their affective and behavioral support (Maio & Olson, 1998). Thus, values that lack cognitive support should not be regarded as identical to attitudes that lack cognitive support, because values are still psychologically important due to their strong affective basis and centrality in cognitive networks.

Subsequent research has illustrated the social importance of these findings. In two studies, Maio et al. (2001) demonstrated that making salient reasons regarding the values of helpfulness and equality elicited more subsequent helpful and egalitarian behavior in situations that pre-

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1. In contrast to values, attitudes are dispositions to evaluate an attitude object (e.g., a political candidate) with some degree of favor or disfavor (Eagly & Chaiken, 1998). Consequently, the two constructs are measured differently. Attitudes are rated using scales reflecting varying degrees of favorability toward an object, whereas values are rated in terms of their importance as guiding principles in one’s life. Thus, while people may often express unfavorable attitudes, most values are rated as being very important (Schwartz, 1992).
resented strong incentives to ignore these values, over and above the effect of making the values themselves salient. In addition, Bernard, Maio, and Olson (2003) found that the value of equality was vulnerable to a simple persuasive attack, but not when the value was given prior cognitive support. In fact, the provision of cognitive support for equality protected equality-relevant attitudes and other relevant values (e.g., forgiveness, helpfulness) from persuasive attack. In sum, the results so far indicate that truisms are a valid metaphor for self-transcendence values and that the truistic nature of these values has important social consequences.

TYPES OF VALUES: MOTIVATIONS AND SOCIAL LEVEL

The most obvious way to further test the values-as-truisms hypothesis is by applying it to all of the value types identified by Schwartz (1992). Schwartz proposed that social values represent three universal requirements of human existence: needs of individuals as biological organisms (e.g., pleasure, a varied life), requisites of coordinated social interactions (e.g., helpfulness, honesty), and the survival welfare needs of groups, such as protection against impulses and actions that threaten individual and group survival (e.g., obedience and social order). On the basis of these needs, Schwartz derived a model of values consisting of 10 motivationally distinct value types, which can be arranged in a circumplex structure to form four higher order value domains: conservation, openness, self-enhancement, and self-transcendence (see Figure 1). In this structure, the simultaneous pursuit of adjacent value domains (e.g., openness and self-transcendence) is possible, whereas the pursuit of opposite value domains (e.g., self-enhancement and self-transcendence) generates conflict. Consequently, individuals who emphasize self-enhancement values tend to place less importance on self-transcendence values (and vice versa), whereas people who emphasize conservation values tend to place less importance on openness values (and vice versa). This theory has been examined and validated in more than 200 samples from over 60 countries (Schwartz, 1992, 1996). Thus, testing the values-as-truisms hypothesis in all of the value domains in Schwartz’s model would constitute an important extension of past research.

It would also be useful to extend the values-as-truisms hypothesis to other conceptualizations of values altogether. Ronald Inglehart’s (1971, 1977, 1990, 1997) model of social values is important to consider because, like Schwartz’s (1992) theory, Inglehart’s model has been supported by
extensive cross-cultural research across 43 societies using a variety of empirical tests (e.g., factor analyses, comparison over time, and comparison of different age groups; Inglehart, 1990, 1997). In addition, Inglehart’s model measures values at a different level of analysis than Schwartz’s model. Whereas Schwartz focuses on people’s perceptions of the importance of values in their personal lives, Inglehart focuses on people’s perceptions of the importance of values for the country in which they live.
Braithwaite and Scott (1991) point out that Inglehart’s “work warrants special consideration because of its theoretical base in Maslow’s (1962) theory of human needs” (p. 669). This basis in Maslow’s theory is evident in Inglehart’s distinction between materialist and postmaterialist values. The materialist values reflect Maslow’s (1954, 1962) conception of basic needs, including sustenance and safety. According to Inglehart’s model, these needs must be satisfied before postmaterialist values are given priority, because postmaterialist values reflect Maslow’s (1954, 1962) higher order needs: belongingness, esteem, intellectual fulfillment, and aesthetic pleasure. Inglehart therefore predicted and found that economic development and the rise of the welfare state during the previous century coincided with less concern about materialist values, such as economic and physical security. In contrast, there is now more concern with postmaterialist values, such as freedom, self-expression, and quality of life.²

It is feasible that the Inglehart values lend themselves more easily to the generation of cognitive support than the previously examined self-transcendence values due to their social orientation and concreteness. Indeed, the media frequently present debate about nationwide agendas such as the fight against crime, the need to maintain a high rate of economic growth, more individual participation in the political process, and protection of our cities and countryside. Similarly, motives underlying some of the other Schwartz values may be more easily justified than the motives underlying self-transcendence values. For example, given the motivational power of self-interest (Batson et al., 1999), individuals may generate reasons relatively easily for self-enhancement values that directly promote personal welfare (e.g., achievement, power). Nevertheless, the values-as-truisms hypothesis focuses on the notion

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² However, the relation between satisfaction of material needs and endorsements of materialist and postmaterialist values has not been consistently supported. For example, Marks (1997) found that parents’ socioeconomic status was negatively related to their children’s endorsement of postmaterialist values; in contrast, the number of consumer items the family of origin possessed was related to lower endorsement of materialist values, thus supporting Inglehart’s hypothesis. However, this latter effect was weak and became nonsignificant when other variables were considered. Nonetheless, other researchers have found that advantageous socioeconomic circumstances are likely to be associated with increased importance of postmaterialist values, whereas teenagers who grow up in disadvantaged socioeconomic circumstances are likely to place high value on materialist values (Kasser, Ryan, Zax, & Sameroff, 1995).
that people simply do not question the logical basis of their values. It predicts that values acquire cognitive support only after people perceive that a value they hold has been challenged or receives little popular support. If it rarely occurs to people that their values can be questioned, the potential ease of justifying different motives underlying values should be largely irrelevant to the amount of cognitive support generated for them. Similarly, in relation to the Inglehart values, Tetlock et al. (1996) asserted that the public debate about societal values focuses on how they are achieved and not on the merits of the values themselves. (This hypothesis is consistent with Inglehart’s theory itself.) In short, we expected that all of the Schwartz and Inglehart values would be truistic because they are rarely questioned. Therefore, analyzing reasons for the Schwartz and Inglehart values should cause them to change, as found in the prior research on self-transcendence values.

**EXPERIMENT 1**

The purpose of this experiment was to test whether analyzing reasons for the Schwartz values causes these values to change. Consistent with previous research (e.g., Maio & Olson, 1998), we expected that participants who analyzed their reasons for self-transcendence values would change these values more than participants who did not analyze their reasons for the values. We also expected that analyzing reasons for self-transcendence values would not cause conservation and openness values to change, because Schwartz’s (1992, 1996) extensive cross-cultural research has found that conservation and openness values tap different motives than self-transcendence values. It was unclear whether analyzing reasons for self-transcendence values would also affect self-enhancement values, because ratings of the importance of self-enhancement values tend to be negatively related to ratings of the importance of self-transcendence values.

In addition, we expected that the non-controversial nature of conservation, openness, and self-enhancement values would cause them to change following an analysis of reasons for conservation, openness, and self-enhancement values, respectively. We expected that analyzing reasons for these types of values would not affect adjacent value types in Schwartz’s model (see Figure 1). For example, analyzing reasons for conservation values should cause the most value change on conservation values and should not affect self-enhancement values or self-tran-
scendence values. It was less clear whether analyzing reasons for one value type (e.g., conservation) would also affect the opposing value type in the circumplex model (e.g., openness).

METHOD

Participants
Participants were 100 undergraduate students (22 men, 76 women, and 2 who did not indicate sex) who participated for course credit or £4. The mean age was 20.85 years. Five additional participants were deleted because of suspicion.

Procedure
Participants took part individually. They were told that they would be participating in several studies and would be asked to indicate their attitudes and opinions on a variety of topics. The experimenter stated that each study was short and, consequently, all of the studies were being combined into the same session.

Premanipulation Values. In the first study, participants completed a shortened version of the Schwartz Value Survey (1992). This version contained four conservation values (national security, respect for tradition, self-discipline, and social order), four openness values (creativity, daring, freedom, and a varied life), four self-enhancement values (ambitious, influential, success, and wealth) and four self-transcendence values (equality, forgiving, helpful, and protecting the environment). In this survey, each of the 16 values was printed beside a definition of the value (e.g., helpful: working for the welfare of others). Participants were asked to rate each value in terms of its importance as a guiding principle in their life. They rated the values by using a 9-point scale that was marked with the same scale labels as used by Schwartz (1992): -1 (opposed to my values), 0 (not important), 3 (moderately important), 6 (very important), and 7 (extremely important). To prevent participants from detecting a hypothesis linking the first and second measures of values, it was necessary to create a cover story (see also Maio & Olson, 1998). Participants were (falsely) told that the first value survey was designed 10 years ago. To ensure that participants carefully thought about each value rating, they were asked to read the entire list of values before rating any of the values. In addition, they were asked to take their time and
to ensure that each rating accurately reflected the importance of the value to them.

**Individual Difference Measures.** In the second study, participants completed measures of idealism (Wojciszke, 1987), need for cognition (Cacioppo & Petty, 1982), and personal need for structure (Neuberg & Newson, 1993). Maio and Olson (1998) found that the effect of analyzing reasons on value change was robust across a wide range of individual difference variables: self-monitoring, self-consciousness, dogmatism, moral absolutism, religion-as-quest, and right-wing authoritarianism. These variables tap rigidity in using or thinking about values in their application to issues, but not the tendency to think about reasons underlying values. Thus, the null effects of these individual differences were consistent with the notion that values are truisms because of the failure to question them, rather than resulting from personal styles in thinking about value-relevant issues. As expected, the individual differences measures in the present study did not moderate the effects of analyzing reasons, and for the sake of brevity the findings are not presented.

**Experimental Manipulation.** In the third study, participants were randomly allocated to one of the four experimental conditions (conservation, openness, self-enhancement, and self-transcendence) or to the control condition. Participants in the experimental conditions were asked to analyze their reasons for considering four conservation values, four openness values, four self-enhancement values, or four self-transcendence values to be important or unimportant. Participants were given a separate page to list their reasons for each value. All four pages were presented in a booklet that contained the following instructions, which were taken directly from Maio and Olson (1998):

> In the following pages, several different values are listed. For each value, please take a few minutes to think about why you think the value is important or unimportant to you, as a guiding principle in your life. That is, go over in your mind what makes each value important or unimportant to you. Analyze your reasons very carefully, and then write your reasons on the lines beneath each value. Be as specific as possible, and list as many reasons as you can think of. (p. 298)

The instructions in the control condition were similar to the instructions in the experimental conditions. The principal difference was that participants in the control condition were asked to analyze their reasons for liking or disliking four different beverages (coffee, colas, milk, and orange juice), rather than their reasons for considering four values to be impor-
tant or unimportant. All participants were told that they would have 20 minutes to list their reasons. After 20 minutes, the experimenter placed the booklets in a blank envelope and proceeded to the next study.

Postmanipulation Values. In the fourth study, participants completed a second value survey. Participants were told that this was a new survey, called the “Revised Value Survey,” which added 40 values to the 16 values measured in the original value survey. The experimenter stated that the original survey may not include enough values and, therefore, he developed a revised survey with additional values. He also stated that because the revised survey was a new survey, he needed to do extensive research to show that it is an improvement over the old survey. As part of this research, he needed to conduct a complex statistical technique called factor analysis. In the Revised Value Survey, each of the 56 values was printed beside a definition of the value. Participants were asked to rate the importance of the 56 values in terms of their importance as a guiding principle in their life. The first 16 values were the same as the values in the initial value survey, and the values were rated using the same scale and procedure as in the initial value survey. Finally, participants were probed for suspicion and debriefed.

RESULTS AND DISCUSSION

Magnitude of Value Change
For each value that was present in both of the value surveys (e.g., freedom, helpful, obedient, power), we calculated the magnitude (i.e., absolute value) of the difference between each participant’s first and second rating of the value. Each participant’s average value change was calculated for the conservation, openness, self-enhancement, and self-transcendence values. These value change scores were then analyzed in a 5 (reasons analysis: control vs. conservation vs. openness vs. self-enhancement vs. self-transcendence) × 4 (value type: conservation vs. openness vs. self-enhancement vs. self-transcendence) mixed-model ANOVA, with the last factor varying within subjects. Results indicated a significant main effect of reasons analysis, $F (4, 95) = 2.84, p < .03$, such that participants in the control condition exhibited less value change ($M = .36$) than did participants who analyzed reasons for their self-transcendence values ($M = .56$), $t (95) = 2.91, p < .01$, or their self-enhancement values ($M = .51$), $t (95) = 2.23, p < .05$. There was also a main effect of value type, $F (3, 285) = 4.85, p < .03$, such that participants exhibited less change
on the self-transcendence values (M = .38) than on the conservation values (M = .54), t (95) = 3.53, p < .05, openness values (M = .46), t (95) = 1.81, p < .05, and self-enhancement values (M = .47), t (95) = 1.80, p < .05. Both of these effects were qualified by a Reasons Analysis `ValueType interaction, F (12, 285) = 2.55, p < .05, which is depicted in Table 1. Examination of the interaction strongly supported our predictions. Conservation values changed significantly more in the conservation values analysis condition than in the control condition, t (285) = 3.55, p < .001. In contrast, openness, self-enhancement, and self-transcendence values did not change reliably more in the conservation values analysis condition than in the control condition (all p’s > .40). Furthermore, participants who analyzed reasons for their conservation values changed their conservation values more than they changed their openness values, t (285) = 3.79, p < .001, self-enhancement values, t (285) = 4.31, p < .001, and self-transcendence values, t (285) = 3.92, p < .001.

Openness values changed significantly more in the openness values analysis condition than in the control condition, t (285) = 3.20, p < .01. In contrast, conservation, self-enhancement, and self-transcendence values did not change reliably more in the openness values analysis condition than in the control condition (all p’s > .40). Furthermore, participants who analyzed reasons for their openness values changed

<table>
<thead>
<tr>
<th>Condition</th>
<th>Materialist</th>
<th>Postmaterialist</th>
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<tbody>
<tr>
<td>Control</td>
<td>.40 (50)</td>
<td>.48 (50)</td>
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<tr>
<td>Materialist</td>
<td>.54 (49)</td>
<td>.64 (49)</td>
</tr>
<tr>
<td>Postmaterialist</td>
<td>.48 (48)</td>
<td>.77 (48)</td>
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Note. Numbers in parentheses represent the number of participants contributing to the adjacent mean.
their openness values more than their self-enhancement values, \( t(285) = 2.40, p < .02 \), and self-transcendence values, \( t(285) = 3.20, p < .01 \), but not their conservation values, \( t(285) = 1.20, ns \).

Self-enhancement values changed significantly more in the self-enhancement values analysis condition than in the control condition, \( t(285) = 4.43, p < .001 \). In contrast, conservation, openness, and self-transcendence values did not change reliably more in the self-enhancement values analysis condition than in the control condition (all \( p's > .10 \)). Furthermore, participants who analyzed reasons for their self-enhancement values changed their self-enhancement values more than their conservation values, \( t(285) = 2.46, p < .02 \), openness values, \( t(285) = 2.08, p < .05 \), and self-transcendence values, \( t(285) = 3.94, p < .001 \).

Self-transcendence values changed significantly more in the self-transcendence values analysis condition than in the control condition, \( t(285) = 2.59, p < .02 \). In contrast, openness and conservation values did not change reliably more in the self-transcendence values analysis condition than in the control condition (all \( p's > .30 \)). However, self-enhancement values did change significantly more in the self-transcendence condition than in the control condition, \( t(285) = 3.49, p < .001 \). In addition, although participants who analyzed reasons their self-transcendence values tended to change their self-transcendence values more than their openness values, \( t(285) = 1.50, p < .10 \) (one-tailed), they did not change their self-transcendence values more than their conservation values, \( t(285) = .62, ns \), or their self-enhancement values, \( t(285) = -.38, ns \).

Following Maio and Olson (1998), we also examined whether analyzing reasons for values causes value polarization, that is, greater agreement with values. If analyzing reasons for values causes the values to become more important, it would not be clear whether the effect of analyzing reasons was occurring because people lack cognitive support for their values or because people possess strong schemas that guide their thinking about values (see Tesser, 1978). Consistent with Maio and Olson’s (1998) results, we expected to find that any value change occurred in both negative and positive directions. To test whether values changed in a particular direction, participants’ raw ratings of the four value types were subjected to a 5 (reasons analysis: control vs. conservation vs. openness vs. self-enhancement vs. self-transcendence) \( \times \) 4 (value type: conservation vs. openness vs. self-enhancement vs. self-transcendence) \( \times \) 2 (trial: before vs. after reasons analysis) mixed-model ANOVA. In this analysis, reasons analysis was a between-subjects vari-
able and value type and measurement trial were within-subject variables. If reasons analysis elicited directional value change, the three-way interaction should be significant. However, none of the interactions were significant. Thus, consistent with past research (Maio & Olson, 1998), value polarization cannot account for our findings.

**Supplementary Analysis: Reasons For and Against the Values**

Following previous research (e.g., Bernard et al., 2003; Maio & Olson, 1998; Maio et al., 2001), participants’ open-ended responses were content analyzed using an established coding scheme. In this coding scheme, one rater counted each participant’s reasons supporting or opposing each value. For each value, the net favorability of each participant’s reasons (number supporting minus number opposing) was calculated. A second rater independently counted 15 participants’ reasons. For all values, there were high correlations between the two coders’ ratings of the reasons, $r (13) = .98, p < .001$.

Consistent with previous research (e.g., Maio & Olson, 1998; Wilson et al., 1989), we tested whether the direction of participants’ value change was related to the reasons they listed. We expected that values would become more important to the extent that participants listed more reasons supporting than opposing their values. To test this prediction, we correlated the net favorability of participants’ reasons for a value with the net change in their ratings of the value (second rating minus the first rating). Results indicated that these correlations were positive and significant for the self-transcendence values, $r (20) = .51, p < .05$, and positive and marginally significant for self-enhancement values, $r (20) = .31, p < .09$ (one tailed). However, the correlations were not significant for the conservation values, $r (19) = -.05, ns$, or the openness values, $r (20) = -.12, ns$.

We then tested whether these data replicated prior evidence that people listed far fewer reasons for values than for the beverages. A one-way ANOVA on the total number of reasons that participants listed for the values and the beverages revealed a significant effect of reasons analysis (control vs. conservation vs. openness vs. self-enhancement vs. self-transcendence), $F (4, 94) = 8.86, p < .001$. As expected, participants listed significantly more reasons for and against the beverages ($M = 4.71$) than they listed for and against conservation values ($M = 2.58$), $t (97) = 5.20, p < .001$, openness values ($M = 2.99$), $t (97) = 4.24, p < .001$, self-enhancement values ($M = 2.74$), $t (97) = 4.85, p < .001$, and self-transcend-
dence values, \((M = 3.13), t(97) = 3.89, p < .001\). There were no differences between the total number of reasons that participants listed for and against the four value types, all \(p's > .20\). Thus, the previously observed deficit in reasons for self-transcendence values (Maio & Olson, 1998) was replicated for the other types of values.

**SUMMARY**

Experiment 1 replicated the past effect of analyzing reasons on change in self-transcendence values, while also demonstrating that analyzing reasons for conservation, openness, and self-enhancement values causes these values to change. Consistent with past results, participants were able to list only a few reasons for each type of value. More important, participants who analyzed reasons for their self-transcendence values changed their self-transcendence values more than did participants who analyzed reasons for beverages. Similarly, analyzing reasons for conservation, openness, and self-enhancement values caused these values to change more than in the control condition. In fact, despite the complexity of our design, the results were extremely clear. Analyzing reasons for a set of values always elicited change in that set of values, but not in most other types of values. The only exception was consistent with prior value theory. Specifically, participants who analyzed reasons for their self-transcendence values changed their self-enhancement values more than did participants in the control condition. This exception is consistent with Schwartz’s (1992) model of values, which predicts that self-transcendence values are negatively related to self-enhancement values. Other evidence supports this negative relation (Bilsky & Schwartz, 1994; Feather, 1995; Schwartz, 1996), making it reasonable to expect that thinking about self-transcendence values may influence self-enhancement values.

**EXPERIMENT 2**

In Experiment 2, our principal aim was to extend the values-as-truisms metaphor to Inglehart’s (1977) model of societal values by testing whether analyzing reasons for materialist and postmaterialist societal values causes these values to change. A secondary aim was to test the values-as-truisms hypothesis in a sample of teenage participants. Maio and Olson’s (1998) tests of this hypothesis relied on young adult samples (over 17 years of age), but some prior developmental theory indicates
that teenage years (12 to 17 years of age) can be a period of high cross-examination of values and morals (e.g., Erikson, 1968; Kohlberg, 1984). Consequently, teenagers may spend time thinking about many value-relevant issues (e.g., censorship, war). Nevertheless, the values-as-truisms hypothesis predicts that thinking about these issues does not normally extend to an examination of the merits of values per se (e.g., freedom of speech, ensuring that this country has strong defense forces). Thus, it was interesting to test whether values function as truisms even in this younger sample.

METHOD

Participants
Participants were 147 school students (79 men, 67 women, and 1 who did not indicate sex). Mean age was 16.51 years. Eight additional participants were deleted for failing to follow instructions.

Procedure
Participants took part in five groups. They were told that they would be participating in several studies and would be asked to indicate their attitudes and opinions on a variety of topics.

Premanipulation Values. In the first study, participants completed measures of six materialist values (maintain a high rate of economic growth, make sure that this country has strong defense forces, maintain order in the nation, maintain a stable economy, fight rising prices, fight against crime) and six postmaterialist values (enable people to have more say about how things are done at their jobs and in their communities, progress toward a society where ideas count more than money, give people more say in governmental decisions, protect freedom of speech, progress toward a less impersonal and more humane society, make our cities and countryside more beautiful). To prevent participants from detecting a hypothesis linking the first and second value measures, we used a cover story similar to the cover story used in Experiment 1. Participants were told that the first value survey was created over 20 years ago by a researcher named Ronald Inglehart. The survey contained instructions that were adopted from Inglehart (1997):

What do you think should be the aims or values of this country over the next ten years? Here is a list of some of the aims or values to which people give
top priority. We would like you to rate how important you think each value is for this country in the next ten years. (p. 108)

To be consistent with the procedure in Experiment 1 and the previous values-as-truisms research (e.g., Maio & Olson, 1998), participants were asked to rate each value in terms of its importance for the country in the next 10 years, using the same 9-point scale as in Experiment 1. Inglehart prefers to assess value importance using a ranking procedure, but ratings of values have proven to be as reliable (e.g., Marks, 1997; Pfeiffer & Cote, 1991) and valid as rankings (e.g., Klein & Arzheimer, 1999; Maio, Roese, Seligman, & Katz, 1996).

Experimental Manipulation. In the second study, participants were randomly allocated to an experimental or control condition. Using the same instructions as in Experiment 1, participants in the experimental conditions were asked to analyze their reasons for considering either five materialist values or five postmaterialist values to be important or unimportant. Due to time constraints, participants did not generate reasons for the values labeled “maintain a stable economy” or “progress toward a society where ideas count more than money.”

Participants in the control condition were asked to analyze their reasons for liking or disliking five beverages (coffee, cola, hot chocolate, milk, and orange juice). Participants in both the experimental and control conditions were told that they would be given 25 minutes to analyze their reasons. After the time had elapsed, participants proceeded to the next study.

Postmanipulation values. In the third study, participants completed a “revised” value survey. Participants were told that the second value survey was a new survey and that Inglehart had decided to update his original questionnaire in order to capture a wider range of values. This “new” survey contained 26 values, and participants were asked to rate the importance of each of the 26 values for the country over the next 10 years. The first 12 values were from the initial Inglehart survey, presented in the same order. Participants rated all of the values using the same scales and procedure as in the first value survey. Upon completion of all the surveys, participants were asked to write down their thoughts about the studies, which allowed us to test for suspicion. None of the participants expressed suspicion. Finally, participants were debriefed.
RESULTS AND DISCUSSION

Magnitude of Value Change

Each participant’s average value change was calculated for both the materialist and postmaterialist values. These value change scores were then analyzed in a 3 (reasons analysis: materialist vs. postmaterialist vs. control) × 2 (value type: materialist vs. postmaterialist) mixed-model ANOVA, with repeated measures on the second factor. Results indicated a significant main effect of value type, $F(1, 144) = 20.60, p < .001$, such that postmaterialist values changed more ($M = .63$) than did materialist values ($M = .47$). There was also a main effect of reasons analysis, $F(2, 144) = 3.63, p < .03$, such that more value change was exhibited by participants who were asked to analyze reasons for materialist values ($M = .58$) or postmaterialist values ($M = .63$) than by participants in the control (beverage analysis) condition ($M = .44$), $t(144) = 3.22, p < .01$, and $t(144) = 2.40, p < .02$.

These effects were qualified by a Reasons Analysis × Value Type interaction, $F(2, 144) = 3.52, p < .04$. Examination of this interaction (see Table 1) revealed that postmaterialist values changed significantly more in the postmaterialist analysis condition than in the control condition, $t(144) = 4.86, p < .001$. In contrast, materialist values did not change reliably more in the postmaterialist condition than in the control condition, $t(144) = 1.40, ns$. Furthermore, participants who analyzed reasons for postmaterialist values changed their postmaterialist values more than they changed their materialist values, $t(145) = 4.81, p < .001$.

Similarly, materialist values changed significantly more in the materialist analysis condition than in the control condition, $t(145) = 2.19, p < .05$. Postmaterialist values also changed more in the materialist analysis condition than in the control condition, $t(145) = 2.75, p < .01$. Participants who analyzed reasons for their materialist values did not change their materialist values more than they changed their postmaterialist values, $t(145) = 1.85, ns$.

As in Experiment 1, we tested whether the manipulation caused materialist and postmaterialist values to change in a particular direction. To test for such change, participants’ raw ratings of the materialist and postmaterialist values were subjected to a 3 (reasons analysis: materialist vs. postmaterialist vs. control) × 2 (value type: materialist vs. postmaterialist) × 2 (trial: before vs. after) mixed-model ANOVA. In this analysis, reasons analysis was a between-subjects variable, and value
Supplementary Analysis: Reasons For and Against the Values

Reasons supporting and opposing each of the materialist and postmaterialist values were counted for participants who had analyzed their reasons for these values, using the same coding scheme as in Experiment 1 and past research (Bernard et al., 2003; Maio & Olson, 1998). A second coder coded the responses from a randomly selected subset of 15 participants. There were high correlations between the two raters’ ratings of the reasons, \( r(13) = .99, p < .001 \). As in Experiment 1, we correlated the net favorability of participants’ reasons for the values with the net change in the values. Results indicated that the correlation was not significant for the materialist values, \( r(49) = .01, \text{ ns} \), but was positive and significant for the postmaterialist values, \( r(49) = .29, p < .05 \).

Consistent with Experiment 1, there was a significant difference in the total number of reasons that participants listed for the materialist values, postmaterialist values, and the beverages, \( F(2, 144) = 50.01, p < .001 \). As expected, participants listed more reasons for and against the beverages \( (M = 3.93) \) than they listed for and against materialist values \( (M = 2.08), t(144) = 8.83, p < .001 \), or postmaterialist values \( (M = 2.10), t(144) = 8.73, p < .001 \). There was no difference between the total number of reasons that participants listed for and against the materialist and postmaterialist value types, \( t(144) < 1 \).

All \( ps > .20 \). Thus, the previously observed deficit in reasons for self-transcendence values (Maio & Olson, 1998) was replicated for the other types of values.

SUMMARY

Participants were able to give only a few reasons for each materialist and postmaterialist value. More important, participants who analyzed reasons for materialist and postmaterialist values changed these values more than participants who analyzed reasons for beverages. It is also interesting that participants who analyzed reasons for materialist values changed their postmaterialist values more than participants who analyzed reasons for beverages. This finding is consistent with Inglehart’s (1977) argument that materialist values must be satisfied before the pursuit of
postmaterialist values (see also Maslow, 1954, 1962). If materialist values take precedence, generating reasons for materialist values might also instigate a change of perspective on postmaterialist values, thereby altering the perceived importance of the latter values.

GENERAL DISCUSSION

Using two comprehensive models of social values, we predicted and found that participants generated few reasons for and against the values that serve different motivations at personal (Schwartz values) and societal (Inglehart values) levels, and the generated reasons elicited value change. These results occurred for all six types of values that were examined across both experiments, including four types of personal values (conservation, openness, self-enhancement, and self-transcendence) and two types of societal values (materialistic and postmaterialistic). Across both experiments, these effects were uninfluenced by initial differences in value importance. Experiment 1 also showed that the effect of analyzing reasons on values is robust across individual difference variables not previously examined by Maio and Olson (1998). Given that analyzing reasons for values should not and does not cause value change when people have previously formed strong cognitive support for their values (Maio & Olson, 1998), these results are consistent with the hypothesis that values lack cognitive support.

Two additional aspects of the results merit comment. First, participants’ reasons for their values did not consistently predict the direction of value change. This pattern resembled the weak correlations obtained by Maio and Olson (1998). On the one hand, these patterns may reflect difficulties involved in coding participants’ reasons. Although our raters could code participants’ reasons reliably, it is not certain that the ratings perfectly matched participants’ idiosyncratic subjective perceptions of the reasons. Participants’ own perceptions of their reasons may better predict value change. The values that yielded nonsignificant correlations were the conservation and materialist values in Experiments 1 and 2, respectively. There may be conceptual similarity between these two value types because both are concerned with maintaining the status quo. Thus, in addition to the methodological factors mentioned, it is possible that some inherent quality of these particular values caused the lack of significant correlations between reasons for these values and value change. For example, although our participants
provided some supportive reasons for the conservation and materialist values, these supportive reasons may have made some participants aware that the values were less important to them than they had previously indicated, causing negative value change that was not reflected by the favorability of the reasons (Maio & Olson, 1998).

Second, participants in Experiment 1 who thought about reasons for their self-transcendence values changed their self-enhancement values, and participants in Experiment 2 who thought about reasons for materialist values changed their postmaterialist values. As noted earlier, these changes are consistent with Schwartz’s (1992) and Inglehart’s (1990) models. Nonetheless, the effect of inducing value change on related values merits more empirical study (see Bernard et al., 2003). In particular, it would be interesting to examine the effect of providing cognitive support for multiple value domains simultaneously. For example, asking people to provide reasons for values from all four Schwartz domains should cause people to reflect on why all of their values are important or unimportant to them. As a consequence, people who perform this task should become more cognizant of ways in which different values support and oppose each other, leading to stronger relations among the values.

This issue is also relevant to the effects of introspection more generally. To this point, the extant evidence has indicated that introspecting reasons causes changes in judgments, and the new judgments are of poor quality and poor predictors of subsequent behavior (e.g., Tordesillas & Chaiken, 1999; Wilson et al., 1989; Wilson & Schooler, 1991). These changes are presumed to occur because, among people who lack extensive knowledge relevant to their judgment, introspection disrupts their ability to focus on the most important bases for the judgments; instead, these individuals focus on a set of beliefs that vary in their relevance to the focal judgment (Levine, Halberstadt, & Goldstone, 1996; Tordesillas & Chaiken, 1999). It seems possible that introspection about large sets of related attitudes can have this disruptive influence, while also affecting the coherence and complexity of systems of the attitudes. For instance, if people analyze their attitudes toward a range of healthy and nonhealthy foods, do the individuals subsequently exhibit greater interattitudinal consistency as a result of contemplating the ways in which the attitudes are interconnected? Such a result would reveal an instance where introspection may occasionally have a positive impact.
ARE ALL VALUES TRUISTIC FOR ALL PEOPLE?

Despite the cogent pattern of results, we do not argue that all values are truistic for all people. In contrast, as noted by Maio and Olson (1998), there may be certain groups of people who have generated argumentative support for specific values. For example, it is possible that self-transcendence values are less truistic for individuals who are involved in environmental groups because they may have accessible reasons for why a value such as protection of the environment is important to them. These individuals may not believe that their view is perfectly consensual and may be acting to support a value that they perceive to be challenged or poorly defended in society. For example, even though most people would say that it is important to protect the environment, environmental activists may feel that they are fighting against societal apathy. For this reason, we believe that most people may possess cognitive support for one or two central values that they have been required to defend and justify.

It is also likely that these central cognitively supported values are self-defining to those who hold them, which may help to explain why self-defining values are more predictive of behavior than values that are considered peripheral to the self (Verplanken & Holland, 2002). However, at present it is not apparent whether central values that are based primarily on affective rather than cognitive support would be more stable and less amenable to change. In order to test this, one could identify central values that are equally based in both cognitive and affective support and central values that are based primarily in affective support and subject both to a reasons analysis.³

In sum, it is worth recalling the newspaper commentary at the beginning of this article, which pointed out that people tend to respond to value-laden issues in an instinctive and nonreflective manner. In all likelihood, the extreme nature of reactions to value-relevant issues reflects the psychological basis of values themselves. By better understanding the bases of values, it may be possible to introduce interventions that help people discuss values in a more rational and logical manner, perhaps as a means of better achieving constructive resolutions to many social issues that pertain to values.

³ We thank an anonymous reviewer for this suggestion.
REFERENCES


environments to late adolescents’ materialistic and prosocial values. *Developmental Psychology, 31*, 907-914.


