Combining Social Axioms with Values in Predicting Social Behaviours

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Abstract

Recently, Leung et al. (2002) have identified a pan-cultural set of five dimensions tapping beliefs about the world in which each individual functions. These general axioms may be conceptualized as individual assessments of the social context constraining one's behavioural choices. As such, we hypothesize that these beliefs about the world may be combined with measures of motivation to predict an individual's actions. To test this model, the present research examined the usefulness of these social axioms as predictors of behavioural tendencies in conjunction with four comprehensive dimensions of values (Schwartz, 1992). Hierarchical regression analyses showed that social axioms added moderate predictive power over and above that provided by values to vocational choices, methods of conflict resolution, and coping styles. Specifically, reward for application was related to preference for conventional jobs and accommodation in conflict resolution; religiosity was related to accommodation and to competition in conflict resolution; social cynicism was related negatively to collaboration and to compromise in conflict resolution, and positively to wishful thinking in coping; fate control was related positively to wishful thinking and distancing in coping; and social complexity was related to compromise and to collaboration in conflict resolution, and to problem-solving as a coping strategy. It thus seems as if measures of respondents' beliefs about the external, social world supplement measures of their internal motivations to achieve various goals. Copyright © 2004 John Wiley & Sons, Ltd.

INTRODUCTION

Attempts to predict behavior based on a person's value priorities often yield unsatisfactory results, with the direct link between values and specific behaviours shown at best to be moderate (Leung, Bond & Schwartz, 1995), and often weak (Feather & O'Brien, 1987;

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Henry, 1976). Similarly, in the domain of personality and attitude research, Mischel (1968), Fishbein and Ajzen (1975) and others have concluded that global, abstract concepts or orientations, such as personality traits and general attitudes, are not strong predictors of specific behaviour. Despite this predictive weakness at the individual level, values and other personality constructs are frequently deployed to account for cross-cultural differences in behaviour. Traditionally, culture has been defined in terms of values, and the major taxonomies of cultural difference use values as measures for mapping cultural positions *vis-à-vis* one another. This approach is firmly entrenched, despite the mixed empirical success of values at unpackaging cultural differences in individual responses (Smith & Bond, 2003).

The case for social axioms: previous research

Social axioms, or people's beliefs about how the world functions, provide a different type of general orientation that may augment the predictive power of values. Beliefs vary across a continuum of specificity (Hahn, 1973), but some beliefs are general, and may be viewed as 'generalized expectancies', a concept introduced by Rotter (1966) to characterize internal versus external locus of control. These general beliefs about the world, or social axioms, are likely to relate to social behaviours across contexts, actors, targets, and time (Leung et al., 2002). For example, locus of control, a general belief about the causes of events, has been related to how people make sense of their personal successes and failures (see, e.g., Spector, 1982). Furthermore, people commonly encounter situations where they apply what they 'know' about the world in general when making decisions about how to act (Furnham, 1988). This knowledge about the world may be construed as the personal representation that an individual develops over his or her life experiences about the distal social context constraining his or her actions in the world. It thus seems probable that adding general beliefs to trans-situational values would increase the predictive power of values with respect to behaviour.

Drawing upon research on expectancy–value theory, Leung et al. (1995) conducted research showing that what people 'know' about the world, in this case their expectancies for various outcomes, were an additional and better predictor than values, in this case outcome valences, for determining how people will behave across the domains of resource allocation, influence tactic use, and mode of conflict resolution. The predictive measures of outcome expectancy and outcome valence used in this study were behaviour specific, but we expect that more general measures of motivational pull, such as values, and of expectancies, such as general social beliefs, will likewise be supplementary predictors of individual responses.

To explore the usefulness of social axioms as predictors of social behaviour, Leung et al. (2002) conducted the first step in this project, namely, to identify a core set of pan-cultural social axioms. Based on qualitative research conducted in Hong Kong and Venezuela, and the Western literature on beliefs, Leung et al. developed a social axiom survey. Using this survey, they identified five factors of belief, which were replicated in the U.S.A., Japan, and Germany, suggesting that they may be culture general. *Social cynicism* represents a negative assessment of human nature and social events (e.g. 'Kind-hearted people usually suffer losses'). *Reward for application* refers to the position that the investment of human resources will lead to positive outcomes (e.g. 'Hard working people will achieve more in the end'). *Social complexity* refers to the view that there are multiple solutions to social issues, and that the outcome of events is uncertain (e.g. 'One has to deal with matters

according to the specific circumstances'). *Fate control* refers to the general belief that social events are influenced by impersonal, external forces (e.g. 'Fate determines one's successes and failures'). Finally, *spirituality* (now labelled *religiosity* by Leung & Bond, in press) refers to the view that spiritual forces influence the human world and that religious institutions exert a positive effect on social outcomes (e.g. 'Religious people are more likely to maintain moral standards'). These five dimensions and their core defining items have now been identified in 40 national groups (Leung & Bond, in press).

Combining values with social axioms to predict behaviour

The current study sought to demonstrate that a combination of values and social axioms would yield significantly better results for predicting social behaviour than the use of values alone. This study employed the revised Schwartz (1992) value survey as a comprehensive measure of values together with the Social Axioms Survey developed earlier by Leung et al. (2002) to predict three classes of behavioural tendencies: styles of conflict resolution, ways of coping, and vocational interests. These three behaviours were chosen because they are distinct from one another, and because they have been subjected to considerable cross-cultural research where value differences are often used as an explanation for the observed differences. For example, avoidance was preferred as a strategy for conflict resolution by persons in several cultural groups who endorsed the values of tradition and conformity (Morris et al., 1998); cross-cultural differences in coping style have been explained in terms of differences between Japanese and Americans in 'individualistic Western values' by O'Connor and Shimizu (2002); Farh, Leong, and Law (1998) explained their pattern of results from Hong Kong using their participants' endorsement of traditional Chinese values to account for their vocational preferences. In all three domains of responding, then, the construct of values has been proposed as a mechanism for explaining individual differences and differences across cultural groups.

As research on social axioms is just beginning, there is no previous work to guide the development of specific hypotheses about the linkage between these general beliefs and the three domains of behaviour examined in this study. We offer some speculations instead. For the domain of vocational preferences, we expect that reward for application should be related to preference for jobs where the effort–reward relation is clearer. According to the vocational taxonomy proposed by Holland (1985), enterprising (e.g. sales manager) and investigative (e.g. engineer) jobs seem to provide a clearer link between effort and tangible reward, and we expect a relationship between reward for application and preference for these two types of occupation. We also expect a significant correlation between social complexity and preference for artistic jobs (e.g. architect). Finally, religiosity is related to agreeableness (Leung & Bond, 1998) and a belief that one is positively inter-dependent with others, so we expect that the endorsement of religiosity will predict a preference for jobs with a social orientation (e.g. social worker). People high in religiosity should welcome the opportunity to provide services to others, a core element of jobs in this category.

In the domain of conflict resolution, we expect that social cynicism should show a negative correlation with collaboration, a strategy for dealing with interdependences that requires mutual trust. Previous research has shown that social cynicism is correlated with low interpersonal trust (Singelis, Hubbard, Her, & An, 2003), a correlation that we believe derives from the belief that the other will exploit you if the opportunity arises. Because of

its pluralistic emphasis, social complexity should be related to compromise and collaboration. In fact, Singelis et al. (2003) found a correlation between social complexity and cognitive flexibility, which is important for achieving comprise and collaboration in conflictual situations. Accommodation involves the acceptance of any outcome without resisting. Fate control should be related to accommodation because of the passivity in the face of external forces involved in the endorsement of fate's power. Finally, religiosity should be related to accommodation because of their mutual emphasis on sociality and agreeableness.

In the domain of coping, social cynicism should be related to wishful thinking, and to distancing because of the tendency for people high in social cynicism to believe that their problems are caused by social institutions and others who impede their personal progress. Seeking of support and ventilation should also be avoided by persons high in social cynicism. Because of its support for trying hard, reward for application should show a positive correlation with problem-solving, a coping strategy that requires grappling with the problem actively. Because of its legitimation of passivity, fate control should show positive correlations with wishful thinking and distancing. This last hypothesis is consistent with the finding of Singelis et al. (2003) of a positive correlation between social cynicism and external locus of control which is related to fate control.

To sum up, our long-term objective is to develop a framework based on social axioms and values for understanding those factors responsible for generating cultural similarities and differences in the social behaviour of individuals (see, e.g., Smith & Bond, 2003). The use of behaviours that have already been subjected to cross-cultural investigation helps set the stage for subsequent research into fuller models to explain the relative strength of these behaviours across individuals and across cultural groups. The present study is considered a first step towards demonstrating the need to integrate values with social axioms in order to construct complementary and theoretically more complex frameworks for understanding and predicting specific behaviours. We conceptualize social axioms as being individual perceptions of the social context, so that their integration with the motivational construct of values could provide one approach to producing more contextually responsive models of individual functioning (see, e.g., Shoda & Mischel, 1996).

METHOD

Participants

Participants were 180 undergraduate students, 90 males and 90 females, taking introductory psychology courses at the Chinese University of Hong Kong. They completed the questionnaires in order to fulfil course credits. There were 81.3% of the participants with age '20 years or less', while the rest were in the '21–30 years' category.

Procedure and materials

A battery of five paper and pencil surveys was administered. The first two surveys tapped into the predictor variables, namely, social axioms and values. The other three surveys assessed self-reported behavioural responses for the dependent variables, namely, vocational interests, styles of conflict resolution, and ways of coping. The materials had all originally been written in English and subsequently translated into Chinese by competent bilinguals, using the method of back-translation.

The social axioms survey
The first part of the questionnaire consisted of 60 items taken from the top loading beliefs in the factor analysis of those items used in Hong Kong and Venezuela and then validated in Japan, Germany, and the U.S.A. (Leung et al., 2002). Each item was scored on a five-point scale from 1, strongly disbelieve, to 5, strongly believe. Five social axiom dimensions were included. Social cynicism was measured by 18 items, e.g. 'Powerful people tend to exploit others' ($\alpha = 0.79$, average item–whole correlation $= 0.37$); reward for application, 14 items, e.g. 'One will succeed if he/she really tries' ($\alpha = 0.72$, average item–whole correlation $= 0.33$); social complexity, 11 items, e.g. 'Human behaviour changes with the social context' ($\alpha = 0.67$, average item–whole correlation $= 0.33$); fate control, seven items, e.g. 'All things in the universe have been determined' ($\alpha = 0.59$, average item–whole correlation $= 0.31$); and religiosity, eight items, e.g. 'Belief in a religion makes people good citizens' ($\alpha = 0.78$, average item–whole correlation $= 0.49$). Note that for the calculation of the above alphas, one item was dropped from each of social complexity and fate control due to a nearly zero and a small, negative item–total correlation found, respectively.

The values survey
The second survey administered was the revised Schwartz (1992) value survey consisting of 56 items. Participants were required to indicate how important each value (e.g. 'Social justice', 'Independent', 'Humble', etc.) was 'as a guiding principle in your life' on a nine-point scale. The scale ranged from –1, 'opposed to my values', through 0, 'not important', 3, 'important', 6, 'very important', to 7, 'of supreme importance'. Originally, Schwartz combined these items to form ten domains of values. Instead, we followed the circular model proposed by Schwartz (1992; Schwartz & Sagiv, 1995) to formulate four basic value dimensions based on adjacent value types. Self-enhancement was measured by 13 items from the adjacent domains of power, achievement, and hedonism ($\alpha = 0.85$, average item–whole correlation $= 0.52$); conservation by 16 items from the adjacent domains of conformity, tradition, and security ($\alpha = 0.81$, average item–whole correlation $= 0.43$); self-transcendence by 18 items from the adjacent domains of universalism and benevolence ($\alpha = 0.84$, average item–whole correlation $= 0.43$); and openness to change by nine items from the adjacent domains of self-direction and stimulation ($\alpha = 0.75$, average item–whole correlation $= 0.42$). Schwartz posited that hedonism links to both openness to change and self-enhancement. We included it only in self-enhancement because we judged from the item wordings that hedonism was conceptually more relevant to achievement and power. Also, we could thereby avoid duplication of elements in regression analysis when we entered the four values as predictors in a block.

The vocational interest survey
The third survey administrated was adapted from the Holland (1985) Vocational Interest Survey, and consisted of 22 items. Participants were required to indicate whether they 'like', 'dislike', or 'have no opinion' with regard to a variety of occupational types. Only five types were included here: four items for conventional occupations (e.g. accountant, banker; $\alpha = 0.82$, average item–whole correlation $= 0.64$), five items for enterprising occupations (e.g. sales representative, manager of a department store; $\alpha = 0.60$, average item–whole correlation $= 0.38$), six items for artistic occupations (e.g. architect, writer; $\alpha = 0.63$, average item–whole correlation $= 0.39$), five items for investigative occupations (e.g., science teacher, engineer; $\alpha = 0.44$, average item–whole correlation $= 0.23$), and three items for social occupations (e.g. social worker, counsellor; $\alpha = 0.69$, average item–whole

correlation = 0.53). The realistic category was excluded because it involves concrete, physical tasks that are uniformly unlikely to be preferred by university graduates. Due to the low alpha for investigative occupations, analysis was not conducted for this variable.

Styles of conflict resolution
The fourth survey was based on the work of Rahim (1983), and consisted of 50 statements that measure five conflict resolution styles. This measure was derived from the scale of Morris et al. (1998), itself based upon 28 of Rahim's original 35 statements, which they extended to 53. Accommodation was measured by 11 items, e.g. 'I try to satisfy the expectations of the other party' ($\alpha = 0.85$, average item–whole correlation = 0.52); competition by nine items, e.g. 'I argue my case with the other party to show the merits of my position' ($\alpha = 0.78$, average item–whole correlation = 0.46); compromise by nine items, e.g. 'I try to find a middle course to resolve an impasse' ($\alpha = 0.72$, average item–whole correlation = 0.40); collaboration by 12 items, e.g. 'I try to investigate an issue with the other party to find a solution acceptable to us' ($\alpha = 0.68$, average item–whole correlation = 0.34); and avoidance by nine items, e.g. 'I try to stay away from disagreement with the other party' ($\alpha = 0.67$, average item–whole correlation = 0.35). Participants were required to indicate the extent to which they agreed with a statement as characterizing to their approach to dealing with conflicts. Each item was scored on five-point scales, labelled from 'strongly disagree' to 'strongly agree'.

Coping styles
Finally, the fifth survey administered included 20 items from the original 'Ways of Coping' survey by Lazarus and Folkman (1984), which was designed to test a transactional model of psychological stress and coping. The items selected were based on research by Chan (1998) in Hong Kong that assessed the factor structure of these items. The survey consisted of a checklist of behaviourally based strategies in a statement form requesting the participants to indicate the extent to which they used each strategy.

Based on Chan's (1998) work, each statement was assigned to a category of behaviour that belonged to one of four discrete coping styles: problem-solving was measured by six items, e.g. 'Know what to do and double effort' ($\alpha = 0.60$, average item–whole correlation = 0.34); distancing by five items, e.g. 'Try to forget the whole thing' ($\alpha = 0.61$, average item–whole correlation = 0.36); support and ventilation by six items, e.g. 'Talk to someone about my feeling' ($\alpha = 0.81$, average item–whole correlation = 0.57); and wishful thinking by three items, e.g. 'Have fantasies or wishes about the outcome' ($\alpha = 0.69$, average item–whole correlation = 0.51). Note that these four coping styles are somewhat different from the original five coping styles of Lazarus and Folkman (1984) (anger withdrawal, dependency, adapting, distancing, and expanding thoughts and actions), since we wished to ensure that the dimensions of coping measured in this study were as emically sensitive as possible. Chan's prior research provided such indigenously responsive groupings. Each item was scored on a four-point scale, with labels ranging from 'never use it' to 'always use it'.

RESULTS

Correlations between social axioms and values

A correlation matrix was constructed to assess the degree of independence between values and social axioms (see Table 1). The axiom dimension of social cynicism was positively

Table 1.   Correlations between social axioms and values

	Social cynicism	Reward for application	Social complexity	Fate control	Religiosity
Self-enhancement	0.35***	0.01	0.02	0.12	−0.21**
Conservation	0.09	0.30***	0.10	0.18*	0.34***
Self-transcendence	0.00	0.32***	0.23**	−0.01	0.23**
Openness to change	0.13	0.11	0.18*	−0.10	−0.12

$N = 180$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

related to self-enhancement values. The axiom dimension of reward for application was positively related to conservation and self-transcendence values. The axiom dimension of social complexity was positively related to self-transcendence and openness to change values. The axiom dimension of fate control was positively related to conservation values. Finally, the axiom dimension of religiosity was positively related to conservation and self-transcendence values, but negatively related to self-enhancement values.[1] The highest correlation between values and beliefs in this set was 0.35.

To further assess the relationships between values and social axioms, the four dimensions of values were entered as a block to predict the five dimensions of social axioms. All five axiom dimensions of social cynicism, reward for application, social complexity, fate control, and religiosity were predicted at a mild to moderate level by the four value dimensions. Their R squares and F values were for social cynicism $R^2 = 0.13$, $F(4, 175) = 6.47$, $p < 0.001$; for reward for application $R^2 = 0.12$, $F(4, 175) = 6.04$, $p < 0.001$; for social complexity $R^2 = 0.08$, $F(4, 175) = 3.66$, $p < 0.01$: for fate control $R^2 = 0.09$, $F(4, 175) = 4.32$, $p < 0.01$, and for religiosity $R^2 = 0.19$, $F(4, 175) = 10.04$, $p < 0.001$, respectively. These results suggest that the five dimensions of social axioms are mildly or only moderately related to the value dimensions. This mild to moderate relationship allows both constructs to contribute separate variance to the three types of behavioural tendency, and so may be examined as separate predictors.

Regression analyses

Table 2 shows the correlations between the social axioms and the three sets of behavioural tendencies. It is against these results that our speculations about the relationships between social axioms and vocational choice, styles of conflict resolution and modes of coping should be assessed. Only one of four predictions was confirmed for vocational choice; three of five for conflict resolution, with the other two, namely social cynicism with collaboration and fate control with accommodation, marginally significant in the predicted direction; four of six predictions were confirmed for coping.

Next, hierarchical regressions were conducted to address the crucial question of whether the addition of social axioms significantly increased our predictive power after entering

[1]An examination of the relationships between social axioms and the 10 value types showed that social cynicism had a positive correlation with the value domains of power, achievement, security, hedonism, and self-direction. Reward for application had a positive correlation with the value domains of universalism, self-direction, benevolence, security, tradition, and conformity. Social complexity had a positive correlation with the value domains of self-direction, security, universalism, and benevolence. Fate control had a positive correlation with the value domains of tradition and security. Finally, religiosity had a positive correlation with the value domains of tradition, benevolence, conformity, and universalism, but had a negative correlation with hedonism and power.

Table 2.   Correlations between social axioms and behavioral variables

	Social cynicism	Reward for application	Social complexity	Fate control	Religiosity
Vocational interest					
Conventional	0.10	0.12	−0.05	−0.03	−0.15*
Enterprising	0.12	0.05	−0.01	0.04	−0.09
Artistic	0.05	−0.09	−0.03	0.00	−0.00
Investigative	—	—	—	—	—
Social	−0.15*	0.23**	0.14	0.07	0.22**
Conflict resolution					
Accommodation	0.02	0.33***	0.09	0.13	0.31***
Competition	0.22**	−0.01	−0.09	0.05	0.09
Compromise	−0.11	0.15*	0.18*	0.11	0.10
Collaboration	−0.14	0.17*	0.22**	0.05	0.04
Avoidance	0.06	0.06	0.09	0.14	0.09
Coping strategies					
Problem solving	−0.03	0.15*	0.22**	−0.07	0.04
Distancing	0.07	0.07	0.02	0.15*	0.01
Wishful thinking	0.23**	−0.06	0.06	0.22*	0.03
Support and ventilation	−0.02	−0.02	0.09	−0.02	0.05

$N = 180$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

values for these three sets of behaviours. Dimensions of value (i.e. self-enhancement, conservation, self-transcendence, and openness to change) were entered as a block in step one. In step two, dimensions of social axioms were entered one at a time, so that a rigorous test of the contribution of a particular dimension of social axioms could be undertaken.[2]

Step 1: values alone

The 14 dependent variables from the three behavioural response measures were examined individually, and Table 3 shows the results. For vocational choices, when values as a block were entered into the regression equation, the results were significant for all four of the vocational choices assessed. Respondents preferred conventional occupations when they held stronger self-enhancement values, F change$(4, 175) = 14.73$, $p < 0.001$. Respondents preferred enterprising occupations when they held stronger self-enhancement values, F change$(4, 175) = 2.49$, $p < 0.05$. Respondents preferred artistic occupations when they had stronger self-transcendence values, but disliked them when they held stronger conservation values, F change$(4, 175) = 5.26$, $p < 0.001$. Respondents preferred social occupations when they held stronger self-transcendence values, but disliked then when they held stronger self-enhancement values, F change$(4, 175) = 9.13$, $p < 0.001$.

   In predicting conflict resolution styles, the results were significant for four of the five dimensions. Respondents tended to adopt an accommodation style to handle conflicts when they held stronger conservation values, F change$(4, 175) = 5.29$, $p < 0.001$.

[2]We also explored the interaction effects between axioms and values in the regression analysis, following the approach of Aiken and West (1991). For each axiom dimension, we entered four, two-way interaction terms (the axiom multiplied with each of the four value dimensions) as block 3 in each regression equation. Of the 70 regression equations inspected, only four yielded a significant R square change in block 3, ranging from 0.06 to 0.09. Considering the small number of significant changes found, we regard the interaction effects between axioms and values as relatively unimportant. The interaction terms of axioms and values generally cannot explain much additional variance over and above that already provided by the additive effects of axioms and values.

Table 3. Results for the hierarchical linear regression

Dependent variables	Step 1 (all values)				Step 2 (social axiom)			
	R^2 for the block	F	Significant value	Beta	Significant axiom	Beta	R^2 change	F change
Vocational interest								
Conventional	0.25	14.73***	Self-enhancement	0.49***	Reward for application	0.19**	0.03	7.52**
Enterprising	0.05	2.49*	Self-enhancement	0.24**				
Artistic	0.11	5.26***	Conservation	−0.38***				
			Self-transcendence	0.35**				
Investigative	—	—	—	—	—	—	—	—
Social	0.17	9.13***	Self-enhancement	−0.27***				
			Self-transcendence	0.22*				
Conflict resolution								
Accommodation	0.11	5.29***	Conservation	0.36***	Reward for application	0.26***	0.06	12.87***
					Religiosity	0.22**	0.04	7.87**
Competition	0.09	4.37**	Self-enhancement	0.22*	Religiosity	0.22**	0.04	7.56**
Compromise	0.05	2.50*			Social cynicism	−0.17*	0.03	4.85*
					Social complexity	0.15*	0.02	3.92*
Collaboration	0.10	4.70**			Social cynicism	−0.16*	0.02	4.62*
					Social complexity	0.15*	0.02	4.03*
Avoidance	0.03	1.22						
Coping								
Problem-solving	0.04	1.87			Social complexity	0.18*	0.03	5.30*
Distancing	0.03	1.24			Fate control	0.16*	0.02	4.03*
Wishful thinking	0.08	3.69**	Self-enhancement	0.30	Social cynicism	0.18*	0.03	5.35*
			Openness to change	−0.23*	Fate control	0.18*	0.03	5.61*
Support and ventilation	0.07	3.30*	Self-enhancement	0.21*				
			Self-transcendence	0.27*				

For step 1, all df = (4, 175). For step 2, all df = (1, 174). Four value dimensions were entered as a block in step 1 and only value dimensions with significant betas are shown. Social axioms were entered one at a time in step 2 and only axiom dimensions with significant betas are shown.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Respondents tended to adopt a competitive style when they held stronger self-enhancement values, F change$(4, 175) = 4.37$, $p < 0.01$. For compromise and collaboration styles, no significant regression coefficient was found despite a significant F change observed, F change$(4, 175) = 2.50$, $p < 0.05$; F change$(4, 175) = 4.70$, $p < 0.01$, respectively.

In predicting coping strategies, the result was significant for two of the four dimensions. Respondents tended to endorse wishful thinking to cope with difficulties when they held stronger self-enhancement values, but tended to adopt it less when they held stronger openness to change values, F change$(4, 175) = 3.69$, $p < 0.01$. Finally, respondents tended to endorse support and ventilation to cope with difficulties when they held stronger self-transcendence and self-enhancement values, F change$(4, 175) = 3.30$, $p < 0.05$.

Step 2: adding social axioms

Regardless of whether significant results were found in step 1, social axioms were entered into the second block of the regression equation one at a time. A significant F change would indicate the unique contribution of a particular dimension of social axioms over and above that contributed by values.

Vocational interest
Reward for application predicted choice of the conventional vocations, F change$(1, 174) = 7.52$, $p < 0.01$. Respondents tended to favour conventional occupations if they had a stronger belief that hard work would lead to positive results.

Styles of conflict resolution
Reward for application predicted the conflict resolution style of accommodation, F change$(1, 174) = 12.87$, $p < 0.001$. Respondents tended to adopt an accommodation style if they endorsed the view that investment of resources will lead to pay-offs. Religiosity predicted the conflict resolution style of accommodation, F change$(1, 174) = 7.87$, $p < 0.01$, and of competition, F change$(1, 174) = 7.56$, $p < 0.01$. Respondents tended to adopt accommodative and competitive styles to handle conflict if they had a stronger belief in the positive value of religious institutions and practices. Meanwhile, social cynicism predicted the conflict resolution style of compromise, F change$(1, 174) = 4.85$, $p < 0.05$, and of collaboration, F change$(1, 174) = 4.62$, $p < 0.05$, both in a negative direction. Respondents tended less to adopt compromising and collaborative styles to handle conflict if they endorsed more cynical social beliefs. Finally, social complexity predicted the conflict resolution style of compromise, F change$(1, 174) = 3.92$, $p < 0.05$, and of collaboration, F change$(1, 174) = 4.03$, $p < 0.05$. Respondents tended more to adopt compromising or collaborative styles if they had a stronger belief in the complex determination of human behaviours.

Coping styles
Social complexity predicted the coping style of problem solving, F change$(1, 174) = 5.30$, $p < 0.01$. Respondents tended to adopt a problem-solving approach to cope with difficulties if they had a stronger belief in the complex determination of human behaviours. Fate control predicted the coping style of distancing, F change$(1, 174) = 4.03$, $p < 0.05$, and of wishful thinking, F change$(1, 174) = 5.61$, $p < 0.05$. Respondents tended to distance themselves or think unrealistically when facing difficulties if they had a stronger belief in fate. Finally, social cynicism predicted the coping style of wishful

thinking, F change$(1, 174) = 5.35$, $p < 0.01$. Respondents also tended to fantasize when facing difficulties if they had endorsed more cynical social beliefs.

DISCUSSION

The relations between values and social axioms

The regression results showed that values and social axioms did not overlap much. Although social cynicism was moderately related to the value dimension of self-enhancement, the empirical overlap was small, reflecting the small conceptual overlap. Social cynicism refers to the assessment of human and social events as leading to negative outcomes for the less powerful, while the three value domains constituting self-enhancement focus on the pursuit of self-interest. The results probably suggest that those who subscribe to a cynical position about social life are thereby motivated to pursue their own welfare, and tap into a broader psychological tendency to structure the social world in terms of power. This interpretation of our results is consistent with the finding of Rupf and Boehnke (2002), who found that their German participants showed a significant relationship between social cynicism and hierarchic self-interest, which refers to the perception of interpersonal relations as hierarchical and self-serving.

The relationship between a belief in reward for application and the value dimensions of conservation and self-transcendence seems interpretable. The domains of self-transcendence are universalism and benevolence, which are compatible with the equitable emphasis undergirding reward for application. The value domains of conservation include conformity, tradition, and security. We consider that a belief in reward for application provides a cognitive support for a socially conservative worldview, helping to stabilize the polity by leading to assessments that outcomes are fairly determined through individual effort.

Social complexity correlated positively with the value dimension of self-transcendence. Perhaps a more complex view of how the social world works is associated with a sense of social inter-relatedness and compassion for others.

Fate control correlated positively with the value dimension of conservation. We judge that persons believing in the efficacy of impersonal agents in human life appreciate the vulnerability of the status quo to disruption and are concerned in consequence about preserving what has already been achieved socially.

Finally, religiosity refers to the view that non-material forces and religious institutions positively influence the functioning of the human world. It is related to the value dimensions of conservation and self-transcendence positively, and to self-enhancement negatively. This set of findings is consistent with the alignment of religious persons with regulation of self-assertion in civic life and political ideology (Keung & Bond, 2002), selflessness and interpersonal connectedness. Rupf and Boehnke (2002) also reported a negative correlation between religiosity and hierarchic self-interest in Germany. Religiosity is a set of cognitions about the socially harmonizing effect of religion and its institutional practices, supporting a motivational orientation towards self-abnegation, concern for others, and self-restraint.

Social axioms enhance the predictive power of values

Many specific relationships between social axioms and the behavioural tendencies examined were significant, after the effects of a respondent's value orientation had been

factored out through the hierarchical regression. We have used hierarchical regression to establish that social axioms add predictive power over and above that provided by values, since it has already been demonstrated that values relate to styles of conflict resolution (Morris et al., 1998), vocational choice (Sagiv, 2002), and coping styles (O'Connor & Shimizu, 2002). Social axioms are a newly added construct in our scientific armamentarium, and should justify their existence by improving our scientific reach. This extension has been demonstrated before with political attitudes (Keung & Bond, 2002), and is made possible by the generally low correlations between the social belief and value constructs.

Specifically, reward for application was related to the preference for conventional jobs. Conventional jobs involve routinized tasks. It seems reasonable that these jobs present a clear effort–reward link. Reward for application also predicted an accommodative approach to conflict resolution. We are surprised by this tendency to give in from those who believe in the investment–outcome link, as we would expect them to struggle for benefits in a conflictual situation. Perhaps there is a reluctance to engage in potentially disruptive behaviours on the part of persons with the more conservative position endorsed by those high in reward for application. Religiosity was related to the preference for accommodation and competition in conflict resolution. These results suggest that a general belief that religious institutions are socially beneficial increases both one's tendency to give in and to struggle against the other. This apparently paradoxical result may arise because of the more dogmatic orientations of religious persons who expect and prefer third parties or institutional procedures to intervene and resolve conflict. In their absence, one either capitulates to the other or struggles vigorously against one's competitor. We expect that those lower in religiosity have been trained differently with respect to resolving interpersonal inter-dependencies, and take a more proactive role and seek out common ground and bargaining positions. In this regard, it is expected that social cynicism related to collaboration and to compromise, both negatively. The belief of people high in social cynicism that interpersonal interdependencies result in domination by one party may explain why they reject collaboration and compromise in resolving conflicts.

A belief in the complexity of social life was associated with endorsement of both collaboration and compromise in resolving interpersonal interdependencies. The world-view that there are multiple solutions to social issues is a functional cognitive resource in contemporary social systems, especially for those socialized to the professional management of those systems, such as civil servants, politicians, and lawyers. We expect that an appreciation of the interdependency of actors and institutions predisposes a person to seek out solutions where all parties' concerns are considered.

The results with regard to coping were as expected. A belief in fate control was related to the distancing style and to wishful thinking. These fanciful, avoidant approaches in the face of difficulties are consistent with the rationale implicit in fate control, *viz.*, that changes happen independent of human agency, that difficulties are fated, and that a reversal of fortune may well occur if one simply submits, perhaps encouraging positive outcomes by wishing them to occur. Belief in social complexity related to a greater endorsement of problem solving approaches to life's varied challenges. We hypothesize that those higher in social complexity have come to that belief about the world through active and successful engagements with social systems. They have earned their belief about the complexity of the world in the struggle of social life, and a problem focused style is part of their personal orientation to life and a consequence of their effectiveness in

solving prior social difficulties. Finally, social cynicism was related to the wishful thinking style of coping. Again, persons high in social cynicism expect human relations to result in hierarchical control, and are probably high in social dominance orientation (Sidanius, 1993). They believe that concrete engagement with life's problems will produce unfair outcomes, and so revert to wishful thinking.

Directions for future research

While values and social axioms are relatively independent, the occasionally significant correlations between the two could be used as a guide in future studies to determine in what instances values and social axioms should be combined. For instance, our results showed that social cynicism is related to the value of self-enhancement. Therefore, in future studies the selection of social axioms and values could be tailored according to the aims of various research endeavours in ways that would avoid possible overlap and maximize predictive efficiency.

On the whole, however, it can be asserted that values and social beliefs are different domains of discourse, as the correlations between these two constructs are generally low or absent. We conceive of values as tapping self-aware motivational systems, and social axioms as tapping conceptions of the social context within which an actor must navigate his or her behaviour in negotiating outcomes from the world. Both constructs are worthy of study and can reveal significant results when combined that would not be the case if either were used alone. Thus, social axioms seem to offer a valuable new way for researchers to examine and explore topics within the domains of social psychology.

Social scientists use values almost exclusively to 'unpackage' the psychological effects of culture on behaviour, both conceptually and operationally. The five dimensions of social axioms, however, show high levels of equivalence in a host of cultures (Leung & Bond, in press), just as domains of value do (Schwartz, 1992). Given the power of beliefs to predict behaviour, it is possible that beliefs could likewise serve to help psychologists unpackage cultural differences in behaviour by using this complementary type of psychological construct (Smith & Bond, 2003). That is, a given difference in behaviour across two or more cultural groups may arise because of how cultural members differently construe their world, just as it may arise because of differences in how they value given outcomes.

It should be pointed out that the predictive power of values and social axioms in combination was not impressively high for any of these behavioural outcomes. The best outcome was 28% for predicting conventional vocational interests, with most outcomes being predicted at around 10–15%. In addition, the present methodology relies on self-reported measures rather than recording observed behaviours. This also limits the degree of generalizability of the findings obtained to real life settings. Given that behaviour is the focus in these studies, the present results suggest that additional personality variables, in particular personal efficacies (Bandura, 2001), should be added to the predictive mix. Furthermore, many behaviours are situationally responsive, suggesting the usefulness of incorporating other social variables, especially focusing on the perceived character of the interaction partner, into our research designs.

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