

## Folk theory of social change

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People have a folk theory of social change (FTSC). A typical Western FTSC stipulates that as a society becomes more industrialized, it undergoes a natural course of social change, in which a communal society marked by communal relationships becomes a qualitatively different, agentic society where market-based exchange relationships prevail. People use this folk theory to predict a society's future and estimate its past, to understand contemporary cross-cultural differences, and to make decisions about social policies. Nonetheless, the FTSC is not particularly consistent with the existing cross-cultural research on industrialization and cultural differences, and needs to be examined carefully.

*Key words:* culture, folk theory, individualism, stereotype.

### Introduction

What was our society like centuries ago, what is our society like today, and what will our society look like in the future? Where did we come from and where are we going? More generally, how do societies change over time? These are often-asked questions in the changing world today. These questions are particularly pertinent to Asia (Yang, 1998, 2003; Hwang, 2003), where social changes are acutely felt in today's globalizing world. Undoubtedly, just as we are capable of construing our individual selves in time – thinking of ourselves as having our own past and future (Ross, 1989; Ross & Buehler, 2004, for review) – we are capable of construing our society's past and future. People describe specific historical events differently depending on their salient social identities (Huang & Liu, 2004; Liu & Hilton, 2005; Sahdra & Ross, 2007; Paez *et al.*, 2008) and people have some ideas about the future of the relationship between men and women (Diekmann & Eagly, 2000).

However, beyond knowledge and memories about specific historical events and future trends, people are capable of speaking about general patterns of change of their societies. In everyday discourse, at least in Australia, people often lament the changing, and increasingly callous, nature of interpersonal relationships in modern society, and nostalgically comment on their childhood when, at least in their memory, they were enveloped in the warm glow of a community. We believe these are expressions of a folk theory of social change (FTSC), which postulates a natural course of evolution from traditional community to modern society. Just as people use their folk theories about various

domains of knowledge to make sense of their current observations and predict future events (for physics, McCloskey & Kohl, 1983; Krist, Fieberg, & Wilkening, 1993; for biology, Atran, 1998; Medin & Atran, 2004; for psychology, Malle, 1999; and for race, Hirschfeld, 2001), they may also use a FTSC to understand their observations about their own and other societies, and to predict future events and possibilities.

In the present paper, we examine a FTSC and its psychological implications in Australia, a generally Western European-based industrialized country. This immediately raises two questions. First, beyond the descriptive value of a FTSC in Australia, does it have any effect on significant social psychological processes? We believe it does. As we will outline in greater detail later, a FTSC contributes to people's judgments and decisions about their own and other societies. Second, do results reported in the present paper generalize to other countries, especially in Asia, where signs of social change are visible and prevalent? In particular, is it a peculiarly Western folk theory, and do people in different cultures have different FTSCs? This is a question that goes beyond the scope of this paper, and it needs to be explored elsewhere. Here, we focus on demonstrating the features of a Western FTSC and its psychological consequences, which can provide the foundation for examining cultural and regional differences in future research.

### Western folk theory of social change

Social change was a founding question for social sciences. Such notable forefathers as Tönnies (1955), Durkheim (1964), Marx (1976) and Weber (1958) all theorized about the sociocultural change from traditional to modern society in their theories of Western modernization. Although their theories about the mechanisms of modernization vary, they

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generally assumed that a traditional society where people live in a close-knit community, producing goods and services for their own consumption, has evolved into a modern one where they live in the urbanized environment and engage in exchange relationships with others, trading goods and services in a monetary system (Kashima & Foddy, 2002, for a review). Tönnies' (1955) portrait of society evolving from *Gemeinschaft* to *Gesellschaft*, and Durkheim's (1964) depiction of change from mechanical solidarity to organic solidarity are two most prominent examples.

Although empirical historical research of Western Europe (Macfarlane, 1978) and cross-cultural research of modernization and its effects on attitudes and values (Matsumoto, Kudoh, & Takeuchi, 1996; Chang, Wong, & Koh, 2003; Kashima *et al.*, 2004) suggest that social changes may be more complex and variable, with some theorists arguing that social changes instigated by industrialization can take different forms in different societies and cultures – an argument against convergence (Bendix, 1967; Gusfield, 1967; Tu, 1996, 2000). Nonetheless, the image of a relentless social change from a traditional community to a modern society appears to have taken a strong hold on the public imagination at least in Western industrialized societies. In the present paper, we postulate that a Western folk theory of social change is largely in line with the classical theories of social change from the traditional to the modern, and that it has three significant components: (i) a change belief that there is a significant change in social life from traditional to modern forms of sociality; (ii) a naturalness belief that there is a natural course of evolution for a society; and (iii) a universality belief that a FTSC is universally applicable to all societies, so that it can be used to understand contemporary cultural differences.

### **Change belief**

We supposed that a Western folk theory of social change is likely to have some resemblance to the classical theories of the modernization of Europe. There are two potential reasons for this. One is that a Western folk theory may be based on the social scientific theories of social change. The social scientific theories of modernization are likely circulated in the society in simplified forms through mass media, school education and the like. In other words, it may be an aspect of commonsense. Another reason is that both social scientific and folk theories may reflect the common historical facts with a proviso that the social scientific theories are more sophisticated and refined than the folk theories. Therefore, we expect that people would believe in a social change from a traditional community lifestyle to a modern urban lifestyle.

A. Fiske and his colleagues' (Fiske, 1992; Fiske, Haslam, & Fiske, 1991; Haslam, 1994a, b) relational

models theory helps us to operationalize this more concretely. According to this theory, people have four models of human sociality to understand and regulate their interpersonal relationships. Communal Sharing (CS) means that people engage in the sharing of resources regardless of status and power; Authority Ranking (AR) implies a status differentiation between a higher status authority and a lower status subordinate; Equality Matching (EM) implies an equal exchange of resources between people; and Market Pricing (MP) suggests a transaction or exchanges of different resources in a market place. It is our contention that a folk theory of social change regards traditional people as engaging in more Communal Sharing (community lifestyle) and less Market Pricing (urban lifestyle) than those living in modern societies.

Furthermore, this folk theory of social change implies a broader attribution of stereotypical characteristics to traditional and modern groups: traditional groups are seen to be communal (or warmer), but less agentic (or less competent) than modern groups. As Eagly and her colleagues (Eagly & Kite, 1987; Eagly & Mladinic, 1989; Eagly, Wood, & Diekmann, 2000) noted, stereotypes about groups are often characterized by dimensions of agency and communality. Not only are gender stereotypes marked by the contrast between agentic men and communal women, but also national stereotypes are often characterized by these contents. Phalet and Poppe (1997) and Poppe and Linssen (1999) found similar configurations of European national stereotypes. More recently, S. Fiske, Cuddy, Glick, and Xu (2002) advanced a two-dimensional model of stereotype content. According to them, much of the content of stereotypes can be described in terms of the dimensions of warmth and competence, which are akin to communality and agency. Although these dimensions are semantically independent of each other, stereotypes often contain a complementary mixture of the two: a competent group is seen to be cold, and a warm group is regarded as incompetent (Glick & Fiske, 1996, 1999, 2001). Provided that Communal Sharing implies the unconditional giving of resources to the needy, a perceived prevalence of Communal Sharing in a traditional community may imply warmth; Market Pricing commonly involves calculated profit maximization, and a perceived prevalence of Market Pricing in modern societies may then signify competence.

Beyond the sheer semantic associations between Communal Sharing and warmth and those between Market Pricing and competence, a folk theory may regard the process of technological advances, industrialization and the spread of market economy as a mechanism of social change. As the technology of manufacturing and communication advances (e.g. industrial and information technology), greater industrialization and deepening market economy would ensue. Indeed, this configuration of changes in society may be seen to imply a greater demand

on people's competence; to make use of advanced technology and to be able to survive in the contemporary world, people must be more technically competent. In the modern technologically advanced society, people may then be seen to be more competent than those in the traditional community. Given the complementarity of agency and communal-ity (competence and warmth), a greater competence accorded the modern society may lead people to attribute a lower level of warmth to it. Indeed, Judd, James-Hawkins, Yzerbyt, and Kashima (2005) showed that people attribute complementarity to groups when there is none. They contrasted two fictitious groups by providing behavioural information about their members that imply warmth and competence. When more competent behaviours were attributed to one group than the other (and therefore one group was seen to be more competent than the other), although there was no real difference between the groups in warmth, the more competent group was rated as less warm. In other words, a FTSC may hold that as a traditional community changes into a more modern form, it may become more competent, but less warm. In combination, a folk theory of social change may contain the change belief that there is a qualitative difference between traditional and modern societies: a traditional community may be seen to show more Communal Sharing and less Market Pricing, and be warmer and less competent, than a modern society.

### **Naturalness belief**

The change belief aspect of a Western folk theory of social change may be based on the historical experience of Western societies and social scientific theorizing of this process, as we noted. However, a FTSC contains another component, the naturalness belief, which claims that the change from the traditional to the modern is a natural course of human history, and that not only was it true in the past, our society will continue to change in the same way into the future. Just like a child grows up to become an adult, and a caterpillar to become a butterfly, a group is assumed to grow and evolve naturally from its traditional form to a more and more modern form. Diekmann and Eagly (2000) showed that people consider gender relations to undergo systematic changes in the future, showing the presence of a temporal dimension to stereotypes about gender. Our claim is that this dimension is central to a FTSC, and that this may be regarded as a form of essentialism (Haslam, Bastian, Bain, & Kashima, 2006). Psychological essentialism (Medin & Ortony, 1989; Rothbart & Taylor, 1992; Haslam, Rothschild, & Ernst 2000; Yzerbyt, Corneille, & Estrada, 2001; also see Yzerbyt, Judd, & Corneille, 2004) is people's belief that there is an underlying essence of a category. For instance, an essentialist belief about femininity imputes a deep, natural essence that determines the membership of the social category of women and

causes their surface characteristics. Although essentialism is typically equated with the belief that the underlying essence is unchangeable and unchanging, we suggest that an unchangeable, immanent essence may be believed to unfold naturally over time to cause changes in natural biological growth (e.g. from caterpillars to butterflies). Likewise, people may believe that the change from the traditional to the modern is natural, an unfolding of a group's essence. To the extent that an unchangeable essence is believed to cause a natural course of change, it may be regarded as a form of essentialism. Indeed, in one of the earliest uses of the term essentialism, Popper (1962; also see Popper, 1957) criticized Plato, Hegel and Marx of essentializing human history; that is, of theorizing that human history unfolds over time in a natural course of social evolution. Likewise, a FTSC may essentialize social change as a natural course of history.

### **Universality belief**

Clearly, a FTSC's proper domain is historical changes of a society; it constitutes everyday, lay explanations of social change over time within a single society. However, it may also be used to make sense of perceived contemporary cultural variations around the globe. This universality belief may be a third component of a Western FTSC. Intellectual history abounds with examples of misapplications of an evolutionary theory for an understanding of contemporary cultural differences (see Jahoda, 1992, 1999, for extensive reviews). In typical cases, less advanced societies were understood to be at lower stages of social evolution relative to more advanced societies. Likewise, people may believe in the universal applicability of the folk theory of social change, so that all societies are believed to undergo the same natural course of social change. If this were the case, a group of people in a traditional social condition and another group living in a modern social condition within the same historical period would also be believed to exhibit differences analogous to the traditional and modern times of one society. To put it differently, a Western FTSC may be falsely universalized, and may also colour stereotypes about social groups and their members within a given period of history. Phalet and Poppe's (1997) and Poppe and Linssen's (1999) research on national stereotypes in Europe are consistent with this conjecture. They found that nation states that were perceived to be more industrialized were seen to be more competent, but less warm.

### **Present research**

In the present paper, we report four studies in which the three propositions described earlier are tested and supported. First, there is a change belief that a society changes from a traditional community to a modern form, that the

modern society is more competent, but less warm, than the traditional community, and that Communal Sharing is more prevalent, but Market Pricing is less prevalent, in the traditional community than in the modern society. Second, people hold the naturalness belief that this change is a natural course of social change. Third, there is a universality belief, in which people generalize this folk theory to all societies and therefore assume that contemporary cultural differences among groups can also be explained in terms of the FTSC. Then, we report one study that explores the role of a Western FTSC in Australians' stereotypes about various countries around the world, and another study in which it is shown to play a significant role in people's policy preference.

## Experiment 1

To examine whether the change belief and the universality belief are part of a FTSC, we gave descriptions of a traditional society and a modern society in three different ways. One was a general description that portrays a traditional society as agricultural, rural and poor, whereas a modern society as industrial, urban and economically well off. A second description was a personal narrative account of the same information with reference to specific individuals' names: Ray, the grandfather and Tom, his grandson. In a third style, a traditional society and a modern society were described comparatively as though they were cross-cultural comparisons. If people hold the change belief as part of a folk theory of social change, they would attribute Communal Sharing and Market Pricing actions, and ascribe warmth and competence differentially to the traditional and modern form of one society in both its generic historical and personalized descriptions. In addition, if people hold the universality belief, they may make similar judgments about the cross-cultural comparisons between different societies with the traditional and modern form.

## Method

*Participants and procedure.* Eighty seven undergraduate students (26 men and 61 women) at the University of Melbourne participated in this experiment as part of the requirement for a first year psychology course. Participants responded to a questionnaire that contained all the materials.

A thumbnail description of traditional and modern societies was constructed on the basis of a general review of the literature of Western modernization (Kashima & Foddy, 2002). Four general aspects were extracted (industrialization, economy, urbanism, technology), and a brief characterization was provided on each aspect for the modern and traditional societies. In one version (historical change), the

traditional society was said to have changed over history to become the modern society. A personal narrative version (personal testimony) was constructed from this original, so that the same information was presented from a single person's perspective; the traditional society was described as a 100-year-old man's (Ray's) personal account and the modern society was described as his 20-year-old grandson's (Tom's) personal account. In a third version (cultural comparison), one society was described as modern and the other as traditional: two names were used, Nuroshi and Zinata, and counterbalanced in two versions (see Appendix). Thus, there were altogether four types of descriptions, which were randomly assigned to participants.

After a description was given, participants were asked to make judgments about both the traditional and modern societies with regard to the action and personality of people who live in each historical period. The two societies were evaluated on a series of personality adjectives on 11-point scales (0 = not at all; 10 = extremely): adjectives for the agency dimension were assertive, calculating, competent, confident, intellectual, and logical; those for the communality dimension were cold (reverse), compassionate, considerate, unfriendly (reverse), unsympathetic (reverse), and warm. Adjectives were appropriately coded so that a higher number indicated a higher level on a given dimension, and averaged to construct the indices of agency and communality judgments. Each had an adequate reliability (alphas varied from 0.73 to 0.83), and they were uncorrelated ( $r = -0.17$  for traditional and  $-0.02$  for modern; both non-significant).

Five descriptions of each of the four relational modes (Communal Sharing, Authority Ranking, Equality Matching, and Market Pricing) were presented in a random order. Participants were asked to rate on an 11-point scale how accurately each statement described how people would typically relate to each other in the traditional and modern societies (0 = not at all true; 5 = somewhat true; 10 = very true). These descriptions were taken from Haslam and Fiske (1999), who found these items to constitute four distinct factors that correspond to the four relational models in a confirmatory factor analysis. Ratings of the five items for each model were averaged. Finally, there was a brief demographics questionnaire.

## Results and discussion

The agency and communality ratings about the modern and traditional societies were subjected to a three-way factorial ANOVA with target (modern vs traditional society) and dimension (agency vs communality) as within-participants factors and description type (historical change, personal testimony, two versions of cultural comparisons) as a between-participants factor. The only significant effect was due to a target by dimension interaction  $F(1,77) = 244.10$ ,



$\eta^2 = 0.76$ , Wilks'  $\Lambda = 0.24$ . As expected, the modern society was rated as more agentic, but less communal than the traditional society (Table 1). There were no main or interaction effects involving description type, suggesting that people had similar views about modern and traditional societies whether they were cross-culturally compared or one society was said to have changed over time.

The ratings about four modes of interpersonal relationships were subjected to a three-way factorial ANOVA with target (modern vs traditional) and mode (CS, AR, EM, MP) as within-participants factors and description style as a between-participants factor. Although target and mode main effects were significant,  $F(1,77) = 7.90$ ,  $\eta^2 = 0.09$ ,

Wilks'  $\Lambda = 0.91$ , and  $F(3,75) = 15.17$ ,  $\eta^2 = 0.39$ , Wilks'  $\Lambda = 0.62$ , they were qualified by the interaction of these two factors,  $F(3,75) = 78.05$ ,  $\eta^2 = 0.76$ , Wilks'  $\Lambda = 0.24$ . As expected, Communal Sharing relationships were seen to be more likely, and Market Pricing less likely, in the traditional society than in the modern society. Somewhat unexpectedly, Equality Matching was seen to be more likely in the traditional than in the modern society (Table 2). No significant difference was observed for Authority Ranking.

To explore whether beliefs about the relational models can explain the impression ratings, we computed the differences in impression and relational models ratings between the modern and the traditional societies by subtracting the traditional scores from the modern ones. We then regressed each of the agency and communality difference scores on the relational models difference scores. The agency difference was significantly predicted by Communal Sharing, and the communality difference was significantly predicted by Communal Sharing and marginally by Market Pricing (Table 3). University students appear to have a romantic image of Communal Sharing relationships being more prevalent in the traditional society.

In this study, we provided fairly detailed descriptions of the modern and traditional societies, and found that, as expected, the modern society was seen to be more agentic but less communal than the traditional society; people thought Market Pricing relations were more prevalent and Communal Sharing relations were less prevalent in the modern society than in the traditional society. Perceived differences in the prevalence of Communal Sharing and Market Pricing relations appear to have been related to the perceived differences in impression of agency and communality.

**Table 1** Mean agency and communality ratings

|                | Society     | Agency      | Communality  |
|----------------|-------------|-------------|--------------|
| Experiment 1   | Traditional | 5.00 (0.16) | 7.98 (0.16)  |
|                | Modern      | 7.82 (0.11) | 5.06 (0.16)  |
| T-M difference | $t(84)$     | 14.96*      | -13.39*      |
| Experiment 2   | Traditional | 0.59 (0.11) | 1.89 (0.14)  |
|                | Modern      | 1.72 (0.12) | -0.78 (0.15) |
| T-M difference | $t(98)$     | 10.61*      | -6.68*       |
| Experiment 3   | Traditional | 0.75 (0.14) | 1.53 (0.18)  |
|                | Modern      | 1.28 (0.16) | -0.35 (0.16) |
| T-M difference | $t(69)$     | 7.90*       | -2.76*       |
| Experiment 4   | Traditional | 0.59 (0.17) | 2.55 (0.16)  |
|                | Modern      | 2.13 (0.13) | -0.60 (0.16) |
| T-M difference | $t(63)$     | 13.01*      | -6.98*       |

Values within parentheses are standard errors;  $t(df)$  reports  $t$ -values for comparing traditional and modern societies.

\* $p < 0.01$ .

**Table 2** Mean relational models ratings for traditional and modern societies

| Experiment     | Society     | CS          | AR          | EM          | MP          |
|----------------|-------------|-------------|-------------|-------------|-------------|
| Experiment 1   | Traditional | 7.55 (0.14) | 6.15 (0.22) | 5.92 (0.16) | 5.38 (0.17) |
|                | Modern      | 4.29 (0.15) | 6.70 (0.17) | 5.23 (0.17) | 7.28 (0.15) |
| T-M difference | $t(84)$     | 16.31*      | -1.91       | 2.84*       | -8.74*      |
| Experiment 2   | Traditional | 7.20 (0.12) | 6.71 (0.14) | 5.56 (0.14) | 5.43 (0.14) |
|                | Modern      | 4.35 (0.14) | 6.35 (0.14) | 5.40 (0.14) | 6.96 (0.14) |
| T-M difference | $t(100)$    | 12.77*      | 1.75        | 0.79        | -7.63*      |
| Experiment 3   | Traditional | 7.05 (0.16) | 7.12 (0.16) | 5.50 (0.15) | 5.38 (0.17) |
|                | Modern      | 4.61 (0.17) | 6.21 (0.20) | 5.66 (0.17) | 6.89 (0.14) |
| T-M difference | $t(69)$     | 10.19*      | 3.32*       | -0.69       | -6.79*      |
| Experiment 4   | Traditional | 7.77 (0.14) | 7.08 (0.22) | 5.72 (0.16) | 4.75 (0.17) |
|                | Modern      | 4.01 (0.15) | 6.25 (0.17) | 5.79 (0.17) | 7.36 (0.15) |
| T-M difference | $t(63)$     | 16.88*      | 3.31*       | -0.33       | -11.91*     |

Values within parentheses are standard errors;  $t(df)$  reports  $t$ -values for comparing traditional and modern societies.

\* $p < 0.01$ .

AR, Authority Ranking; CS, Communal Sharing; EM, Equality Matching; MP, Market Pricing.

**Table 3** Regression analyses predicting the difference between traditional and modern societies in agency and communality by differences in Communal Sharing, Authority Ranking, Equality Matching and Market Pricing

| Experiment   | DV          | $R^2$ | Standardized Regression Coefficients |     |         |        |       |        |
|--------------|-------------|-------|--------------------------------------|-----|---------|--------|-------|--------|
|              |             |       | $F$                                  | df† | CS      | AR     | EM    | MP     |
| Experiment 1 | Agency      | 0.26  | 6.92**                               | 80  | -0.39** | 0.02   | 0.19  | 0.19   |
|              | Communality | 0.27  | 7.21**                               | 80  | 0.42**  | 0.02   | -0.00 | -0.24* |
| Experiment 2 | Agency      | 0.18  | 5.06**                               | 95  | -0.26*  | 0.07   | 0.07  | 0.25   |
|              | Communality | 0.33  | 11.46**                              | 95  | 0.56**  | -0.11  | -0.04 | -0.02  |
| Experiment 3 | Agency      | 0.15  | 2.83*                                | 65  | -0.10   | -0.31* | 0.32* | -0.14  |
|              | Communality | 0.34  | 8.53**                               | 65  | 0.57**  | -0.13  | -0.18 | 0.22   |
| Experiment 4 | Agency      | 0.11  | 1.85                                 | 59  | -0.38*  | 0.03   | 0.09  | -0.12  |
|              | Communality | 0.32  | 6.93**                               | 59  | 0.59**  | -0.25* | 0.02  | 0.11   |

\*\* $p < 0.01$ ; \* $p = 0.05$ .

†Error degrees of freedom for the  $F$ -test for the overall  $R^2$ .

AR, Authority Ranking; CS, Community Sharing; EM, Equality Matching; MP, Market Pricing.

It is also noteworthy that these perceptions were present regardless of the type of descriptions given to the participants. Whether one society was said to have changed from the traditional to the modern (described from generic or personal perspectives) or two societies were compared cross-culturally, the participants inferred the same pattern of differences between the modern and the traditional types of societies. A FTSC appears to be applied to a temporal change as well as to cross-cultural comparisons.

Although these results were clearly consistent with the proposed FTSC, demonstrating the existence of change and universality beliefs, it is possible that the descriptions provided about the modern and traditional societies inadvertently contained some explicit information about interpersonal relations and personality characteristics. In Experiment 2, a minimal description was provided to rule out this possibility.

## Experiment 2

In this experiment, the modern and traditional social forms were described by simple phrases: 'modern society' and 'traditional society', which differed in their levels of industrialisation and technological advances without further details as in Experiment 1. In addition, Experiment 2 examined whether a Western FTSC contained the naturalness belief, which stipulates that the traditional form naturally evolves into the modern form. We constructed a scenario in which a society changed over time from the traditional form to the modern form, a society changed over time from the modern form to the traditional form, and a society 'returned' over time from the modern form to the traditional form. In the latter case, it was made clear that people in this society chose to return to the traditional way of life. If a

Western FTSC contains the naturalness belief, societies that changed from the modern to the traditional would be regarded as less natural than societies that changed from the traditional to the modern.

## Method

**Participants and procedure.** One hundred and one undergraduate students (20 men and 81 women) participated in the experiment in groups of up to 30. In a questionnaire, a society and its change pattern was briefly described:

[Historical change] Back then, people lived in a 'traditional' society, where industry was not widespread and people lived their lives in similar ways to their ancestors. In contrast, now people live in a 'modern', technologically advanced society, with high levels of industrialization.

[Reverse change] Back then, people lived in a 'modern', technologically advanced society, with high levels of industrialization. In contrast, now people live in a 'traditional' society, where industry is not widespread and people live their lives in similar ways to their ancestors.

[Deliberate return] Back then, people lived in a 'modern', technologically advanced society, with high levels of industrialization. In contrast, now people have returned to a 'traditional' way of life, where industry is not widespread and people live their lives in similar ways to their ancestors.

This time, we used a slightly different set of personality traits to index agency and communality. In Experiment 1, we did not have reversed items for the agency index, and the number of reversed items was not balanced for the communality index. We borrowed the adjectives used by Judd *et al.* (2005) for agency (capable, assertive, independent; reversed items = disorganised, lazy, unskilled)

and communality (warm, considerate, caring; reversed items = insensitive, unfriendly, unsympathetic). Ratings were made of the extent to which each trait applied, in general, to people in each society for the modern and traditional time periods on an 11-point scale (0 = not at all; 10 = extremely). The three agency items were averaged, the reversed agency items were averaged, and the latter was subtracted from the former to compute the agency index; an analogous procedure was used for the communality index. The same set of relational models items were used and rated in the same way as in Experiment 1.

In order to examine the naturalness aspect of the FTSC, we also asked the participants to evaluate what they thought of the described societal change. Three items were included for this purpose: 'This course of change is a natural one,' 'This course of change is due to factors inherent in society itself,' and 'Very little could be done to alter this course of change.' A response was made on a seven-point scale (1 = strongly disagree; 4 = neither agree nor disagree; and 7 = strongly agree). These items formed a single dimension according to a principal component analysis and were averaged to index how natural the social change was perceived to be; Cronbach's alpha was 0.84. Finally, a demographic questionnaire was included.

## Results and discussion

First, we conducted a one-way ANOVA to examine the naturalness belief of FTSC. We expected that the historical change scenario is perceived to be more natural than the reverse change or deliberate return scenarios. Consistent with this, the effect of description type was significant,  $F(2,96) = 3.66$ ,  $p < 0.05$ . A planned contrast between the historical change scenario ( $M = 4.89$ ) and the other two scenarios was significant,  $t(96) = 2.65$ ,  $p < 0.01$ ; a planned contrast between the reverse change ( $M = 4.20$ ) and the deliberate return ( $M = 4.00$ ) was not significant,  $t(96) = -0.60$ . The pattern of social change from the tradi-

tional to the modern was seen to be a more natural course of history than the pattern of change from the modern to the traditional form.

An ANOVA was conducted on the agency and communality indices with description type (historical change, reverse change, deliberate return), target (modern vs traditional) and dimension (agency vs communality) as independent variables. The first was a between-participants factor; the latter two were within-participant factors. Replicating the results of Experiment 1, the modern social form was rated as more agentic, but less communal than the traditional form (Table 1), with a significant interaction of target and dimension,  $F(1,96) = 129.53$ ,  $\eta^2 = 0.57$ ,  $\Lambda = 0.43$ . Although both society and dimension main effects were significant this time:  $F(1,96) = 32.92$ ,  $\eta^2 = 0.26$ ,  $\Lambda = 0.75$ , and  $F(1,96) = 34.36$ ,  $\eta^2 = 0.26$ ,  $\Lambda = 0.74$ , they cannot be interpreted meaningfully in light of the interaction effect. There was no main or interaction effect involving description type, suggesting that people believed that the social forms strongly shaped the personality characteristics of the occupants of the society.

An ANOVA was conducted on the relational models ratings with description type, target, and relational models dimensions as independent variables. The target-dimension interaction was significant,  $F(3,96) = 56.59$ ,  $\eta^2 = 0.64$ ,  $\Lambda = 0.36$ : in the traditional social form, Communal Sharing relations were seen to be more prevalent, and Market Pricing relations were less prevalent than in the modern form (Table 2). Although target and dimension main effects were significant,  $F(1,98) = 17.97$ ,  $\eta^2 = 0.16$ ,  $\Lambda = 0.85$ , and  $F(3,96) = 37.20$ ,  $\eta^2 = 0.54$ ,  $\Lambda = 0.46$ , respectively, they cannot be meaningfully interpreted. This time, however, the three-way interaction involving description type, target, and dimension was also significant,  $F(6,92) = 2.33$ ,  $\eta^2 = 0.07$ ,  $\Lambda = 0.87$ . Inspection of the means (Table 4) suggests that for each description type, the basic pattern of a target-dimension interaction was present: the traditional form was seen to have more CS and less MP than the

**Table 4** Mean relational models ratings for traditional and modern societies as a function of different social change scenarios in Experiment 2

| Scenario                 | Target      | CS    | AR   | EM   | MP   |
|--------------------------|-------------|-------|------|------|------|
| Historical Change        | Traditional | 7.29  | 7.26 | 5.53 | 5.32 |
|                          | Modern      | 5.18  | 6.33 | 5.81 | 7.06 |
| Reverse Change           | Traditional | 7.26  | 6.07 | 5.39 | 5.23 |
|                          | Modern      | 3.61  | 6.25 | 5.01 | 6.92 |
| Deliberate Return        | Traditional | 7.05  | 6.80 | 5.76 | 5.73 |
|                          | Modern      | 4.27  | 6.46 | 5.39 | 6.91 |
| Scenario $\times$ Target | $F(2,98)$   | 4.18* | 2.46 | 1.08 | 0.78 |

\* $p < 0.05$ .

AR, Authority Ranking; CS, Community Sharing; EM, Equality Matching; MP, Market Pricing.

modern. Nonetheless, to shed light on the three-way interaction, a series of ANOVAs was conducted for each relational model's dimension with description type and target as factors. There was an interaction involving description type and target only for Communal Sharing (Table 4). Although the traditional social form was seen to involve a similar level of Communal Sharing relations in all scenarios, the modern social form was seen to involve far less Communal Sharing in the reverse change scenario than in the historical change scenario with the deliberate return scenario in-between. Participants may have tried to construct a causal story to explain why the modern society 'went backwards' to the traditional form; perhaps because the modern society became so extremely lacking in Communal Sharing, the society may have broken down and degenerated to a more traditional lifestyle (reverse change).

Regression analyses were again conducted to predict the modern-traditional differences in personality ratings by modern-traditional differences in relational models ratings (Table 3). Replicating the results of Experiment 1, perceived difference in Communal Sharing predicted both the difference scores in agency and communality ratings. In this experiment, however, the difference in Market Pricing did not play a significant role.

### Experiment 3

In the previous experiments, descriptions of both traditional and modern societies were provided, and judgments were made about them. These results clearly showed that, on the basis of even minimum information, people can form impressions about the overall sociality of a society. However, these may not be sufficient to argue that the basis of their impressions is a kind of naïve theory; a theory, whether naïve or scientific, should help people go beyond the information given. After all, one of the central functions of a theory is to help us predict what is to happen in the future, and to estimate what must have happened in the past, based on the current observation. Therefore, a stronger test of the postulate that people have a folk theory of social change is to see whether people predict that a traditional society undergoes a change to a modern form, or estimate that a modern society would have had a traditional form in the past, even in the absence of clear descriptions about the form of sociality of the future or the past.

### Method

*Participants and procedure.* Seventy undergraduate students (18 men and 52 women) at the University of Melbourne participated in the experiment. They received a questionnaire in which a description of the current state of

a society was provided and a question was posed as to what its future is likely to be (prediction) or what its past would have been like (estimation).

[Prediction condition] This society is a 'traditional' one, where industry is not widespread and people live their lives in similar ways to their ancestors. Based on what you know about how people might live in this type of society, we'd like you to think about how people are NOW, and how they might be in the FUTURE, several hundred years from now.

[Estimation condition] This society is a 'modern', technologically advanced one, with high levels of industrialization. Based on what you know about how people might live in this type of society, we'd like you to think about how people are NOW, and how they might have been in the PAST, several hundred years ago.

The two time periods were then evaluated in terms of the personality traits and relational models items used in Experiment 2. They then reported their demographic backgrounds.

### Results and discussion

An ANOVA was conducted on the agency and communality indices with condition (prediction vs estimation) and dimension (agency vs communality) as independent variables. The current state for the prediction condition was coded as traditional and its future form, as modern; the current state for the estimation condition was coded as modern and its past form, as traditional. This variable was again called target. There was a significant interaction of target and dimension,  $F(1,67) = 55.83$ ,  $\eta^2 = 0.46$ ,  $\Lambda = 0.55$ ; The target effect on each dimension was significant (Table 1), showing that the modern form was evaluated to be more agentic, but less communal than the traditional form. Although both society and dimension main effects were significant:  $F(1,67) = 19.95$ ,  $\eta^2 = 0.23$ ,  $\Lambda = 0.77$ , and  $F(1,67) = 9.15$ ,  $\eta^2 = 0.12$ ,  $\Lambda = 0.88$ , they cannot be interpreted meaningfully in light of the interaction effect. There was no main or interaction effect of condition.

An ANOVA was conducted on the relational models ratings with condition, target, and relational models dimensions as independent variables. The target-dimension interaction was significant,  $F(3,66) = 39.28$ ,  $\eta^2 = 0.64$ ,  $\Lambda = 0.36$ : in the traditional social form, Communal Sharing relations were seen to be more prevalent, and Market Pricing relations were less prevalent than in the modern form (Table 2). Although target and dimension main effects were significant,  $F(1,68) = 13.29$ ,  $\eta^2 = 0.16$ ,  $\Lambda = 0.84$ , and  $F(3,66) = 20.95$ ,  $\eta^2 = 0.49$ ,  $\Lambda = 0.51$ , respectively, they cannot be meaningfully interpreted. A three-way interaction involving condition, target, and dimension was also significant,  $F(3,66) = 2.84$ ,  $\eta^2 = 0.11$ ,  $\Lambda = 0.89$ . Inspection of the means (Table 5) suggests that for each condition, the



**Table 5** Mean relational models ratings for traditional and modern societies in the prediction and estimation conditions in Experiment 3

| Condition                 | Target      | CS   | AR   | EM   | MP   |
|---------------------------|-------------|------|------|------|------|
| Prediction                | Traditional | 7.01 | 6.66 | 5.24 | 5.51 |
|                           | Modern      | 4.47 | 6.18 | 5.55 | 6.65 |
| Estimation                | Traditional | 7.09 | 7.58 | 5.75 | 5.25 |
|                           | Modern      | 4.74 | 6.25 | 5.76 | 7.14 |
| Condition $\times$ Target | $F(1,68)$   | 0.15 | 2.41 | 0.43 | 2.84 |

AR, Authority Ranking; CS, Community Sharing; EM, Equality Matching; MP, Market Pricing.

basic pattern of a target-dimension interaction was present: the traditional form was seen to have more CS and less MP than the modern. Nonetheless, to shed light on the three-way interaction, a series of ANOVAs was conducted for each relational models dimension with condition and target as factors. An interaction of these factors was marginally significant for Market Pricing (Table 4). People rated the prevalence of Market Pricing to be more markedly different between the modern and the traditional forms in the estimation condition than in the prediction condition.

Regression analyses were again conducted to predict the modern-traditional differences in personality ratings by modern-traditional differences in relational models ratings (Table 3). Replicating the results of the previous experiments, perceived difference in Communal Sharing predicted the difference scores in communality ratings. However, the agency ratings were predicted negatively by Authority Ranking and positively by Equality Matching. Market Pricing was not a significant predictor for either. It is important to note that Communal Sharing was a consistent negative predictor of the agency in the previous experiments, but that it failed to predict agency in this experiment. One potential reason is that the traditional versus the modern contrast did not produce as strong an effect on Communal Sharing in this experiment as in the others. Effects of the FTSC appear to be somewhat weaker when it is used to make predictions or estimations about social conditions. Clearly, the use of the FTSC in inferential processes needs further examination.

Extending the previous results, this experiment showed that the FTSC is used to predict a society's future and to estimate a society's past. When a society's current state was described as traditional, its future was predicted to be modern; when a society was described to be currently modern, its past was estimated to be traditional. Even without explicit descriptions of what the future or the past may be like, people attributed 'traditional' and 'modern' characteristics to the corresponding historical periods. This strengthens the postulate that FTSC has both the naturalness and change beliefs as its parts. It is presumably

because of the FTSC's naturalness belief that people would predict the future and estimate the past along the time line; it is because of the FTSC's change belief that the past and future were attributed the traditional and modern characteristics, respectively.

Nevertheless, the current design has limitations. We did not ask people to predict what will happen to the modern society, nor did we ask them to estimate where the traditional society might have come from. As well, the relationships between relational models dimensions and personality ratings were somewhat different from those in the previous studies, suggesting a need for further clarification of these relationships in inferential processes. A future study should explore a broader use of a FTSC for inferences in an even longer time perspective, and examine the relationships among its components when it is used in inferential processes.

## Experiment 4

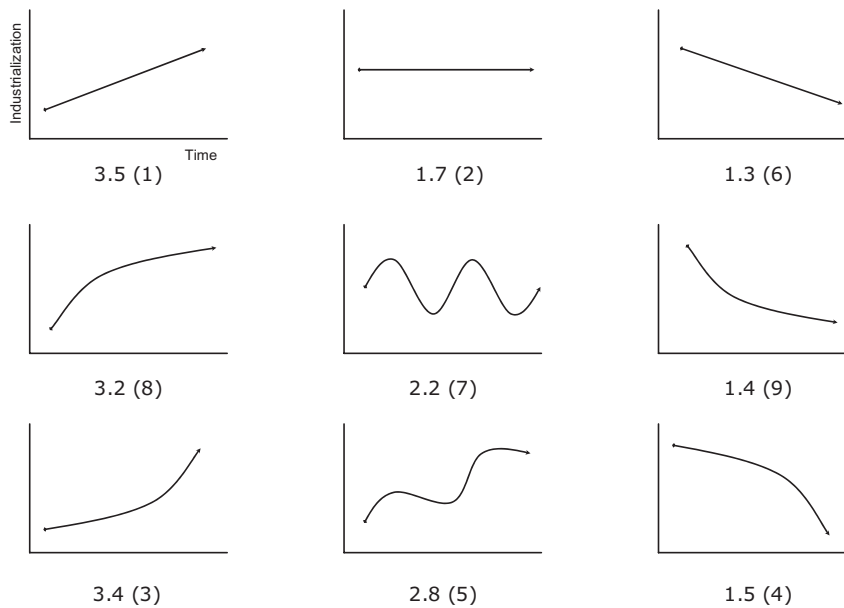
In this experiment, we investigated the universality aspect of the Western FTSC; that is, whether the Western FTSC is believed to be universally applicable and therefore applied to cross-cultural comparisons as well.

### Method

Sixty-three undergraduate students (17 men and 46 women) at the University of Melbourne participated in the experiment. In a questionnaire, one society was described as modern and the other society was described as traditional. Ratings were sought about the two societies on the same set of personality traits and relational models items as in Experiments 2 and 3. Two fictitious names (Nuroshi and Zinata) were given to the societies, and counterbalanced between two versions of the questionnaire. Then, nine patterns of 'natural social change' in levels of industrialization were shown (Fig. 1), and the likelihood that each of these change patterns would occur naturally was judged on a six-point scale (0 = impossible, 1 = highly unlikely, 2 = unlikely, 3 = likely, 4 = highly likely, 5 = certain). Participants then reported their demographics.

### Results and discussion

An ANOVA was conducted on the agency and communality ratings with condition (two versions of the questionnaire), target (traditional vs modern), and dimension (agency vs communality) as independent variables. There was a significant interaction of target and dimension  $F(1,62) = 131.70$ ,  $\eta^2 = 0.68$ ,  $\Lambda = 0.32$ : again, simple main effects analyses showed that the modern society was evaluated to be more agentic, but less communal than the



**Figure 1** Patterns of industrialization shown to participants in Study 4, and their mean likelihood ratings. Likelihood ratings of patterns of social change: 0, impossible; 3, likely; 5, certain.

traditional society (Table 1). Although both target and dimension main effects were significant:  $F(1,62) = 42.99$ ,  $\eta^2 = 0.41$ ,  $\Lambda = 0.59$ , and  $F(1,62) = 12.35$ ,  $\eta^2 = 0.17$ ,  $\Lambda = 0.83$ , they cannot be interpreted meaningfully in light of the interaction effect. There was no main or interaction effect of questionnaire version.

The relational models ratings were analyzed by ANOVA with condition, target, and relational models dimensions as independent variables. The target-dimension interaction was significant,  $F(3,60) = 82.61$ ,  $\eta^2 = 0.81$ ,  $\Lambda = 0.20$ : in the traditional social form, Communal Sharing relations were seen to be more prevalent, and Market Pricing relations were less prevalent than in the modern form (Table 2). Although target and dimension main effects were significant,  $F(1,62) = 18.57$ ,  $\eta^2 = 0.23$ ,  $\Lambda = 0.77$ , and  $F(3,60) = 23.70$ ,  $\eta^2 = 0.54$ ,  $\Lambda = 0.46$ , respectively, they cannot be meaningfully interpreted. There were no main or interaction effects involving questionnaire version.

Regression analyses of the modern-traditional differences in personality ratings were conducted with modern-traditional differences in relational models ratings as predictors (Table 3). Replicating the results of all experiments, perceived difference in Communal Sharing predicted the difference scores in communality ratings. In addition, the difference in Authority Ranking negatively predicted this variable. For agency, the Communal Sharing was the only significant negative predictor, as in Experiments 1 and 2.

Finally, the likelihood ratings of the natural courses of social change were examined. A questionnaire version (2)  $\times$  pattern (9) mixed-design ANOVA showed that only a main effect of pattern was significant,  $F(8,49) = 35.08$ ,  $\eta^2 = 0.85$ . The upward patterns (items 1, 3, and 8) were rated as more likely than the other patterns (see Fig. 1 for means).

**Table 6** Correlations of the upward industrialization index with agency and communality as well as relational models ratings in Experiment 4

|             | Ag     | Com   | CS   | AR   | EM    | MP     |
|-------------|--------|-------|------|------|-------|--------|
| Traditional | -0.02  | 0.19  | 0.09 | 0.01 | 0.24* | -0.04  |
| Modern      | 0.28** | -0.04 | 0.02 | 0.05 | 0.07  | 0.29** |

\*\* $p < 0.05$ ; \* $p = 0.055$ .

AR, Authority Ranking; CS, Community Sharing; EM, Equality Matching; MP, Market Pricing.

The ratings of the nine change patterns were then submitted to a principal component analysis; one component was extracted. The two ratings of the change patterns that did not load highly (i.e. items 2 and 7; loadings below 0.35) were removed; the remaining seven change pattern ratings formed a clear one factor, with all items loading above 0.35. The downward pattern (items 4, 5, 6 and 9) were reverse coded (their loadings were opposite to the upward patterns (i.e. items 1, 3 and 8) and averaged to construct a scale of belief in upward industrialization. This scale had the overall  $\alpha = 0.79$  and correlated significantly with the agency and Market Pricing ratings for the modern society (Table 6). Again, generally consistent with our expectation, those who believed that the natural course of social change is to industrialize thought that the modern society was more agentic and had more Market Pricing relationships.

People clearly have a belief that a society naturally industrializes over time; the graphical pattern of social change that shows an increase was rated to be consistently more likely than other patterns of change. This is consistent with the

Western FTSC's naturalness belief. Furthermore, the belief that the level of industrialization increases over time significantly correlated with the agency and Market Pricing ratings for the modern society, suggesting that those who believe in a natural industrialization of a society believe that a modern social form has predominantly Market Pricing relationships and is more competent. This finding connects the naturalness belief of the FTSC with its change aspect. Most critically, as we found in Experiment 1, this FTSC is applied to cross-cultural comparisons as well, suggesting that the universality belief is an aspect of FTSC.

## Experiment 5

In the experiments so far, we have presented evidence for the change, naturalness, and universality components of the Western FTSC. In short, Australian participants in these studies held a naïve theory that a society naturally changes from a traditional to a modern form as technology develops and the society industrializes. Accompanied with this change is a societal change from a warm and less competent community to a less warm and more competent agentic society.

Does this FTSC play a role in these people's social perception and behaviour? One possible arena is national stereotypes. As mentioned earlier, Phalet and Poppe's (1997) and Poppe and Linssen's (1999) work is generally consistent with this conjecture. However, it is worth re-examining this hypothesis in the post-September 11 era, in which international conflicts are more abundant especially in so-called developing countries. Australia has been involved in some of those conflicts (e.g. Afghanistan, Iraq) as part of the coalition with the USA and the United Kingdom. This presents an intriguing possibility. One's nation's relationships with other countries (e.g. conflict, cooperation) are likely to affect national stereotypes, and conflict-laden relationships with outgroups tend to make the stereotypes of those groups less warm (S. Fiske *et al.*, 2002). However, the Western FTSC would regard economically less advantaged countries as more communal. If perceptions of industrialization are, even under these circumstances, indeed, predictive of perceived communality and agency of the countries as the Western FTSC suggests, this will provide further evidence for the significance of a FTSC in colouring people's stereotypes.

## Method

*Participants and procedure.* Participants were 48 undergraduate students (11 men and 37 women) at the University of Melbourne who took part in the experiment as part of their course requirement. They were asked to complete a questionnaire in a group of 10–25 and later debriefed.

**Table 7** Countries that were included in each of the two country sets

| Continent | Country Set 1              | Country Set 2 |
|-----------|----------------------------|---------------|
| Asia      | Australia                  | Australia     |
|           | Japan                      | South Korea   |
|           | People's Republic of China | Indonesia     |
|           | Malaysia                   | India         |
|           | Afghanistan                | Iran          |
| Africa    | Kenya                      | South Africa  |
|           | Cameroon                   | Algeria       |
| Europe    | Great Britain (UK)         | Germany       |
|           | Italy                      | Greece        |
|           | Poland                     | Russia        |
| America   | USA                        | Canada        |
|           | Argentina                  | Brazil        |

*Questionnaire.* Each questionnaire contained two sections, the first of which asked participants to indicate their beliefs about two sets of 12 countries. In constructing each set, we selected countries with which we expected participants would have greater or lesser familiarity, across the following four continents: Asia (five countries including Australia), Africa (two countries), Europe (three countries) and America (two countries). Table 7 lists the countries. The countries were presented in two different orders for each set: the first, a random ordering of the countries (the only constraint that Australia was not presented first) and the second, the reverse of this order. This resulted in four questionnaire versions (2 country sets  $\times$  2 presentation orders).

An identical set of questions was asked about each of the 12 countries. First, participants were asked to rate how applicable warmth- and competence-related adjectives were for describing the country using 11-point scales (0 = not at all applicable, 10 = applicable). There were six warmth-related adjectives: warm, unfriendly, unsympathetic, insensitive, considerate and caring; and six competence-related adjectives: disorganized, capable, assertive, lazy, independent and unskilled. These adjectives were presented in a random order. Next, participants indicated their perceptions of the country's level of industrialization by rating the extent to which the country was industrialized, wealthy, and had advanced technology on five-point scales (1 = not very much, 5 = a great deal).

The participants were then asked to indicate their level of subjective familiarity with the country on two questions (how familiar are you with the country, how well informed about the country are you?) and their perception of the relationship between the country and Australia on two questions (how hostile is this country to Australia, how friendly is Australia's relationship with this country?). These four familiarity and relationship questions used a five-point response scale (1 = not at all, 5 = very). Finally,

to measure objective familiarity with the country, participants were asked the following three questions, using a dichotomous response scale (1 = yes, 2 = no): have you ever lived in or visited the country, do you personally know someone who lives or lived in or comes from the country, and are you, or is your family, from this country?

The second section assessed participants' beliefs about the pattern of social change. Participants were asked to indicate which personality traits are more prevalent in traditional societies than in modern societies or vice versa. They were then presented with the list of six warmth, six competence and four industrialization adjectives described above, and were required to indicate whether they thought each adjective applied more to modern or traditional societies on 11-point scales ( $-5 =$  applies more to traditional societies,  $+5 =$  applies more to modern societies).

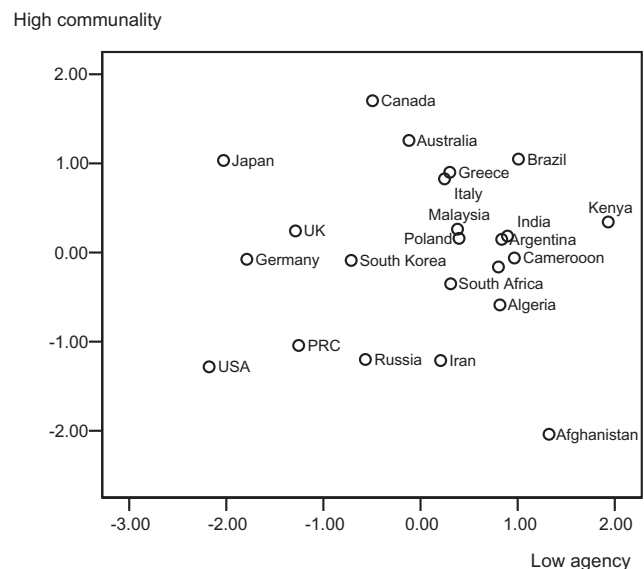
## Results and discussion

*Western folk theory of social change.* Indices of the Western FTSC were constructed by indexing the extent to which communality and agency were believed to be associated with modern or traditional societies. We averaged the ratings for warm, cold, competent and incompetent traits separately, and subtracted the average coldness (incompetence) from the average warmth (competence) and halving the difference. Each subscale indicated the extent to which communality (agency) was associated with modernity (positive number) or traditionality (negative number;  $\alpha = 0.82$  and  $0.81$ , respectively, for communality and competence). As expected, communality was more associated with traditionality ( $M = -1.90$ ; significantly different from zero,  $t(47) = -7.01$ ,  $p < 0.001$ ), but agency was more associated with modernity ( $M = 2.02$ , significantly different from zero,  $t(47) = 11.65$ ,  $p < 0.001$ ). These participants endorsed a Western FTSC.

*National stereotypes.* Analyses of national stereotypes were conducted using a nation as a unit of analysis because nation-level relations between development and stereotypes are of critical importance, and because multi-level analyses would not give stable parameter estimates given the relatively small number of participants. Therefore, all ratings were averaged across participants, and mean ratings were computed for each target country. First, to compute perceived communality, the mean ratings on warmth traits were added together and the mean ratings on coldness traits were subtracted from the sum ( $\alpha = 0.98$ ). Similarly, perceived agency was computed by subtracting the sum of the mean incompetence trait ratings from the sum of the mean competence trait ratings for each country ( $\alpha = 0.90$ ). Second, we computed the index of perceptions of national development by averaging the ratings of technological advancement,

industrialization and wealth ( $\alpha = 0.99$ ). Third, the index of intergroup conflict was computed by averaging the rating of hostility to one's own country and the reverse-coded rating of cooperative relationship with one's own country ( $\alpha = 0.82$ ). Finally, we subjected the indices of familiarity (percentages of respondents who have lived in a given country, whose family is from the country, who personally know someone from the country, mean rating of familiarity, mean rating of how well informed they are) to a principal component analysis. The eigenvalues clearly suggested a one-factor solution. The factor loadings were all above  $0.88$  ( $\alpha = 0.89$ ). The regression method was then used to estimate the factor score; we computed the values so that a higher number indicated greater familiarity.

The trait ratings of 23 countries ( $12 \times 2$  sets minus 1 because Australia was included in both sets) were averaged to produce country profiles, which were then submitted to a multidimensional scaling program (ALSCAL). Specifically, Euclidean distances were computed between the country profiles, and an ordinal MDS model was fit to the distance matrix. A two-dimensional solution fit the data well with  $R^2$  of 0.98 and the stress value of 0.07. The first and second dimensions correlated with agency and communality at  $-0.98$  and  $0.95$ , respectively, clearly indicating that the first dimension captured the absence of agency and the second, the presence of communality. The stimulus configuration is presented in Figure 2.



**Figure 2** Multidimensional scaling solution of national stereotypes (perceptions of nations). X and Y axes are generally aligned with a low level of agency and a high level of communality (X and Y axes correlated with perceived agency and communality at  $-0.98$  and  $0.95$ ).



**Table 8** Correlations between stereotypes, conflict, national development, and familiarity

|             | Communality | Agency | Conflict | Development |
|-------------|-------------|--------|----------|-------------|
| Competence  | -0.15       |        |          |             |
| Conflict    | -0.54**     | -0.49* |          |             |
| Development | 0.02        | 0.94** | -0.65**  |             |
| Familiarity | 0.08        | 0.53** | -0.55**  | 0.69**      |

$N = 23$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ .

**Table 9** Partial correlations between conflict, national development, and national stereotypes

|             | Communality | Agency |
|-------------|-------------|--------|
| Conflict    | -0.70**     | 0.38   |
| Development | -0.44*      | 0.94** |

$df = 20$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ .

Correlations between the indices across countries (Table 8) showed that, as expected, conflict negatively correlated with communality, whereas national development positively correlated with agency. However, national development did not correlate with communality, contrary to our expectation. Nevertheless, there were some confounds that may have masked the predicted relationships: conflict and development correlated negatively, and agency, development, and conflict significantly correlated with familiarity. To control for these confounds, we computed partial correlations. To examine the relationship involving conflict, we controlled for familiarity and development; for the relationships involving development, we controlled for familiarity and conflict (Table 9). Consistent with the expectation, conflict correlated negatively with warmth, but development correlated positively with competence and negatively with warmth. In other words, national stereotypes are consistent with the Western FTSC: developed countries are seen to be more agentic, but less communal than developing countries, when perceived conflict and familiarity are controlled. It is interesting to note that when the confounds were controlled for, the correlation between competence and warmth was negative ( $pr = -0.55$ ,  $p < 0.01$ ;  $pr = -0.47$ ,  $p < 0.05$ , respectively, when development and conflict were controlled for).

In addition, perceived communality, agency, and national development were correlated with Hofstede's (2001) individualism index and GDP per capita to explore whether stereotypes had some factual basis.<sup>1</sup> Unfortunately, Hofstede's scores were unavailable for some countries (Algeria, Afghanistan, Iran, Poland and Russia). The score for the People's Republic of China was estimated by averaging the scores for Hong Kong, Singapore and Taiwan; the scores

for Kenya and Cameroon were estimated from the regional scores for Eastern and Western Africa. The GDP per capita was taken from *The World Factbook* (CIA, 2008), which was mainly based on 2007 data. Intriguingly, neither perceived communality nor agency significantly correlated with Hofstede's individualism,  $r(18) = 0.12$  and  $0.43$ . Instead, actual per capita GDP was highly correlated with perceived national development and perceived competence,  $r(23) = 0.91$  and  $0.75$ ,  $p < 0.05$ , respectively. These patterns of correlations did not change even when perceived conflict and familiarity were controlled for. Given the large number of missing data points for Hofstede's scores, the results should be interpreted with a great deal of caution. However, they imply that communality and agency national stereotypes may not have a strong empirical basis. Instead, they are mostly based on accurate perceptions of the countries' national wealth, and competence levels may have been inferred from the perceptions of national development using FTSC.

All in all, although actual national stereotypes reflect a multitude of factors (e.g. intergroup conflict, familiarity, national development), a Western FTSC that contrasts warmer but less competent communal living with a colder but more competent modern society was associated with participants' perceptions of the industrial development of countries. The national stereotypes may affect these people's attitudes and preferences about a variety of national and international policies.

## Experiment 6

In this last experiment, we show that the folk theory of social change is consequential, influencing socially significant attitudes and behaviours. We investigated whether a FTSC can form a basis for public opinions and social policies, which have implications for macro sociopolitical processes.

Imagine a country that is rapidly industrializing and increasingly wealthy (e.g. some countries in Asia such as the People's Republic of China). If its policy makers use the FTSC, they may fear that their country will be less communal in the near future. They may then institute a

policy that is designed to foster communal orientations in people, which are, in turn, assumed to help people live better lives. The growing popularity of concepts such as social capital (Field, 2003) and the World Bank's interest (Dasgupta & Serageldin, 2000) in policies that may help to build social capital might be understood in this context. Social capital is a collection of various resources that function to help people carry out their goal-directed social actions which are made available through social networks (Lin, 2001). If declining communal relationships would deplete social capital as the society becomes wealthy, it would make sense to set community-oriented social policies that help to build social capital and sustain the community.

What about public reactions to such policies? If people believe that communal relationships in their society are likely to decline in the future, would they support the community-oriented social policies? Their reactions to community-oriented social policies may not be uniformly positive and, in fact, they may depend on whether they think such social policies can have effects on the course of social change. However, if they believe a decline of communality is an inevitable consequence, which no human intervention can arrest, they may not have any strong feelings about community development. In contrast, if they believe social policies can intervene in this otherwise natural course of social change, and communal relationships can be sustained, they may support the policies of community building. To extend Dweck, Chiu, Hong, and their colleagues' theorizing about implicit theories (Dweck, Chiu, & Hong 1995; Chiu, Dweck, Tong, & Fu, 1997), a belief in fundamental changeability or unchangeability of social processes may be called an implicit theory of society. Those who believe social processes cannot be altered may be called entity theorists, whereas those who believe they can be incremental theorists of society.

In this experiment, we tested the hypothesis that a FTSC – especially people's beliefs about future levels of communality in their society – can influence people's reactions to social policies of community building as opposed to those of economic development. Given that any social policies are likely to be chosen within a budgetary constraint, policies for community and policies for development are likely to be pitted against each other. Reflecting this situation, we chose to ask people to indicate their relative preferences for those contrasting policies. Most critically, however, we hypothesized that the relationship between FTSC and policy preference would be moderated by the implicit theory of society. Incremental theorists of society are likely to show a negative relationship between their beliefs about future communality of their society and preferences for communal social policies; they would prefer to intervene into social processes and arrest a declining communality by building a community if they believe the communality will

decline. However, entity theorists of society with their beliefs in the unchangeability of patterns of societal change would not be affected by their beliefs about the future communality of their society.

## Method

*Participants and procedure.* Eighty-six undergraduate students (23 men and 63 women) at the University of Melbourne responded to a questionnaire that contained all relevant measures.

Participants were first asked to respond to five items that were designed to tap their implicit theory of society (Societies can change even their most basic qualities (Incremental); No matter what kind of society you look at, members of the society can always change very much (Incremental); As much as I hate to admit it, you can't teach an old dog new tricks. Societies can't really change their deepest attitudes (Entity); Every society, no matter who they are, can significantly change their basic characteristics (Incremental); Societies can substantially change the kind of society they are (Entity)) on seven-point scales (1 = strongly disagree; 7 = strongly agree). When coded appropriately so that higher numbers indicated entity theory of society, these items were internally coherent ( $\alpha = 0.82$ ) and, therefore, they were averaged to index entity theory of society.

Next, participants were shown a straight timeline stretching from the left-most point marked as past and the right-most point marked as future, and asked to imagine that it represented the course of history. Five equally spaced time points were marked on this line indicated by the letters, A, B, C, D and E, with C representing the present, A and B representing the past time points, and D and E representing future time points. Participants were then asked to indicate the extent to which people, in general, at each time-point possess each of the listed traits on 11-point scales (0 = not at all; 10 = very much so). The list contained 15 traits: six warmth traits (warm, considerate, caring, honest, trustworthy, sincere), three coldness traits (unsympathetic, insensitive, unfriendly), three competence traits (independent, capable, assertive) and three incompetence traits (disorganized, lazy, unskilled). After appropriately coded, the warmth and reversed coldness items were averaged to compute communality at each time point; likewise, the competence and reversed incompetence items were averaged to compute agency at each time point (all  $\alpha$ s > 0.73).

Finally, they were asked to consider the time period from C to D; that is, from the present to the future, and asked 'If you had a certain amount of money to spend on society as it moved from time C to time D, would you spend it on . . .?' They were then given four items, each anchored by one communal policy and one contrasting policy of economic development (building community ties vs

developing the economy; fostering interpersonal relations vs fostering trade relations; assisting communities vs assisting economic markets; developing social resources vs developing material resources) and asked to indicate their preferences by using a seven-point scale. The responses were coded so that 1 indicated development-oriented policy and 7, community-oriented policy. The four ratings were reasonably internally coherent ( $\alpha = 0.65$ ) and averaged to measure preference for community-oriented policies. Participants were then asked about demographic information, debriefed, thanked and dismissed.

### Results and discussion

First, agency and communality ratings of the five time points were subjected to a two-way factorial within-subject ANOVA with dimension (agency vs communality) and time (A through E) as factors. Dimension and time main effects were both significant, Wilks's  $\Lambda = 0.91$  and  $0.86$ ,  $F(1,86) = 8.55$  and  $F(4,83) = 3.39$ ,  $\eta^2 = 0.09$  and  $0.14$ ,  $p = 0.01$  and  $0.01$ , respectively. Critically, an interaction was also significant, Wilks's  $\Lambda = 0.56$ ,  $F(4,83) = 16.18$ ,  $\eta^2 = 0.44$ ,  $p < 0.001$ . The means suggest that agency was seen to increase, whereas communality was seen to decrease, from time A to time E (Fig. 3). Even without mentioning anything about traditionality and modernity, people thought there would be a shift from low to high agency and from high to low communality in society.

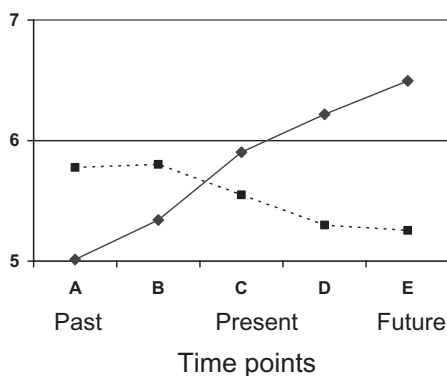
In order to explore the structure of these perceptions, a principal component analysis was conducted. A scree test showed four clear factors, which were varimax rotated. Communality ratings for C, D and E loaded on the first factor (future communality;  $\alpha = 0.92$ ), agency ratings for C, D and E on the second factor (future agency;  $\alpha = 0.92$ ), communality ratings for A and B (past communality;  $\alpha = 0.91$ ) on the third factor, and agency ratings for A and

B (past agency;  $\alpha = 0.89$ ) on the fourth. To test our hypothesis that future communality should interact with entity theory of society to predict people's preference for community-oriented social policies, we conducted a general linear model analysis with future communality, entity theory of society, and their interaction as predictors. Future communality and entity theory both had main effects,  $F(1,82) = 4.75$  and  $5.93$ ,  $\eta^2 = 0.06$  and  $0.07$ ,  $p = 0.032$  and  $0.017$ , respectively; furthermore, an interaction was also significant,  $F(1,82) = 4.19$ ,  $\eta^2 = 0.05$ ,  $p = 0.04$ . Simple slope analyses showed the predicted pattern (Fig. 4). When entity theory was one SD above the mean (i.e. entity theorists), the slope was not significantly different from zero ( $B = 0.251$ ,  $t(82) = 1.16$ ,  $p = 0.248$ ), whereas when it was one SD below it (i.e. incremental theorists), the slope was significantly negative ( $B = -0.377$ ,  $t(82) = -2.01$ ,  $p = 0.048$ ). Basically, when future communality was seen to be low, only incremental theorists showed a clear preference for community-oriented social policies.

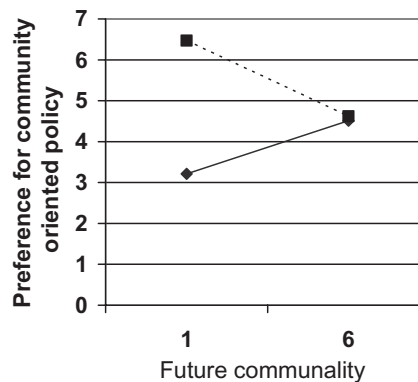
To explore any other effects of FTSC, an analogous analysis was conducted with three other factors of FTSC. None showed a significant main or interaction effect.

### General discussion

Just as people have folk theories about physical (McCloskey & Kohl, 1983; Krist *et al.*, 1993), biological (Atran, 1998; Medin & Atran, 2004) and psychological (Malle, 1999) phenomena, they have a folk theory of society (Hirschfeld, 2001). People have implicit theories about temporal dynamics of people, namely, how people may or may not change over time and by how much (Ross, 1989; Dweck, 1999). Likewise, the studies reported in this



**Figure 3** Agency and communality ratings at time points A, B, C, D and E in Experiment 6. —◆—, agency; ···■···, communality.



**Figure 4** Pattern of interaction between future communality and entity theory of society in predicting preference for community-oriented policies. —◆—, entity theorist; ···■···, incremental theorist.

paper show that people have an implicit folk theory about how society changes over time, and that it affects people's attitudes towards social issues. Clearly, there is a FTSC and it matters.

People living in an industrialized primarily Western society, namely Australia, believe that, as a society becomes more technologically advanced and industrialized, it undergoes a natural course of social change (naturalness belief), in which a communal society marked by Communal Sharing relationships changes to a qualitatively different, agentic society where Market Pricing relationships prevail (change belief). People believe that it is more natural for a society to undergo this change than a change in the reverse direction; little can be done to influence this natural course of change; and the change is caused by factors inherent in the society (Experiment 2). People use the theory to predict what a society is likely to be like in the future; they use it to estimate what a society would have been like in the past (Experiment 3). The FTSC appears to be applied universally (universality belief), so that it is used to understand contemporary cross-cultural differences between different societies (Experiment 4). Across four experiments, people's estimates of the prevalence of Communal Sharing relationships predicted their perceptions of agency negatively and communality positively. However, the estimated prevalence of Market Pricing did not show a consistent pattern of relations with perceived agency or communality; the only statistically reliable relation was a negative one with communality; in Experiment 1, increasing Market Pricing was associated with decreasing perceived communality.

Does a FTSC play a role in influencing people's judgments and decisions of importance? We attempted to provide an affirmative answer by conducting two additional studies. First, we showed that Australian undergraduates' stereotypes about various countries reflect their FTSC – when familiarity and conflict were controlled, those countries seen to be more economically developed were perceived to be more competent, but less communal than those countries that had lower levels of perceived economic development (Experiment 5). Second, people's FTSC was shown to affect their policy preference (i.e. the extent to which they prefer community building as opposed to economic development, especially when they believe that social policies can alter the future course of social change) (Experiment 6).

### ***Is the folk theory of social change valid?***

If a Western FTSC is meant to describe a general trend in the history of industrialization in Western European societies, it may contain some grain of truth. It is probably broadly true that, as a society is industrialized, it tends to have more Market Pricing relationships as people have no

choice but to exchange goods and services in a marketplace for their survival. In this process, affluence may increase people's general levels of individual agency (Triandis, 1989). In a more contemporary vein, most societies in the world are now caught in the global market economy. Any society that has some industrial basis has now entered into the global market; societies can no longer exist in glorious isolation. In the globalized world, it is inevitable that a society has more Market Pricing relationships. In this regard, a FTSC is, in its broad outline, consistent with the social science's grand theories and more general observations of the world today.

Nonetheless, the cross-cultural empirical research on individualism and collectivism gives a cautionary remark on the veracity of the universality component of the Western FTSC. One aspect of a Western FTSC combined with its universality claim is that industrialization correlates positively with agency around the world. If agency is understood to be conceptually akin to individualism (Hofstede, 1980, 2001; Triandis, 1995) and independent self-construal (Markus & Kitayama, 1991), consistent with the Western FTSC, evidence suggests that economic wealth of a country (per capita GNP) correlates with individualism (Hofstede, 1980, 2001; Schimmack, Oishi, & Diener, 2005). However, two points are worth noting. First of all, perceived competence was not correlated with actual individualism (Hofstede, 2001). Second, Kashima and Kashima (2003) showed that the strong positive relation between per capita GNP and individualism was found only for the countries in which a particular type of language is used, namely, a language in which the use of a personal pronoun as the subject of a sentence is obligatory (this was called non-pronoun drop languages). Among countries in which their languages permit pronoun drops, the correlation between wealth and individualism was substantially reduced and statistically unreliable. In other words, the relation between industrialization and wealth on the one hand and agency or individualism in a society on the other may be far less clear than FTSC suggests it is. Given that non-pronoun drop languages are often used in Western Europe (Kashima & Kashima, 1998), the postulate that industrialization increases agency may be true for Western Europe just as the classical theories of Western European industrialization suggests. However, when this aspect of FTSC is applied to all cultures universally, it may become an unjustifiable generalization, a kind of stereotype not about a particular group, but about a class of groups around the globe.

Another postulate of FTSC appears to be that technological advances and industrialization drive out Communal Sharing relationships in society, and that Communal Sharing relationships decline as a society enters into the global market economy. However, the Japanese experience of industrialization also suggests that low levels of



Communal Sharing and communality are not an inevitable consequence of industrialization. During the period of Japanese industrialization, Communal Sharing relationships appear to have been retained in Japanese companies (Kashima & Callan, 1994). Employees working within a team in an organization acted as a unit that showed a great deal of cohesiveness and acted as though they belonged to a family (called *ie* in Japanese). Furthermore, Kağitçibaşı's (1996) research on the Turkish experience also provides a counterpoint. Turkish families living in urbanized affluent areas, indeed, became financially independent, obtaining goods and services through market exchange mechanisms; however, they retained high levels of emotional interdependence, keeping their Communal Sharing relationships within families, but not in the economic arena. At any rate, examining contemporary cross-cultural variations, Schimmack, Oishi, and Diener (2005) recently reported that across 40 countries in which individualism and collectivism were measured, the country means on collectivism had no systematic relations with the general index of social development. In other words, there is no systematic evidence that industrialization reduces Communal Sharing and general communality in society.

All in all, the Western FTSC is not always consistent with existing cross-cultural data. The cross-cultural literature that we reviewed suggests that its universality belief should be viewed with suspicion. A more systematic examination of the effects of industrialization and technological advances needs to be conducted before the FTSC is taken for granted to make future plans.

### Implications

A Western FTSC informs Western cultural stereotypes. As Experiment 5 showed, national stereotypes are often coloured by the nations' economic prowess. Wealthy countries are seen to be more agentic and often less communal than poorer nations. Nonetheless, stereotypes may not only influence lay people's perceptions, judgments and decisions, but also social scientists' theorizing and research. As various theorists noted (Churchland, 1979; Stich, 1983; Atran, 1998), scientific research may proceed from a folk theoretical understanding about the phenomena at hand. As Churchland and Stich noted, cognitive psychology proceeded from naïve conceptions of the mind and action explanation based on beliefs, desires and intentions. In social psychology too, theories of social cognition and behaviour abound that explain social behaviour in terms of the actor's beliefs, desires and intentions (Fishbein & Ajzen, 1975). Whether these theories will be eventually replaced or eliminated as Churchland and Stich suggested is yet to be known. Nonetheless, it seems clear that, unlike some social constructionists' suggestions of scientific theories as sheer constructions unconstrained by evidence, most

scientific theories appear to be refined with further empirical research.

The cross-cultural research on individualism and collectivism provides an intriguing case study of such a process. Hofstede's (1980) discovery of positive correlation between national wealth and individualism seems to have prompted the avalanche of research on individualism and collectivism (Kashima, 2001). Initially, research proceeded with an assumption not unlike the Western FTSC that we documented in this paper. It was dominated by the assumption that individualism (similar to agency) and collectivism (similar to communality) are bipolar opposites; wealthier North American and Western European countries were regarded as more individualistic and less collectivistic than poorer countries elsewhere. Earlier theorizing drew heavily on this cultural contrast. By now, this bipolar conception of individualism and collectivism has given way to a more sophisticated treatment of the constructs, prompted by vigorous empirical research and more sophisticated theorizing of cultural processes (for reviews, see Kashima, 2001; Oyserman, Coon, & Kimmelmeier, 2002; Schimmack *et al.*, 2005). Still, a treatment of cultural differences that is often coloured by the stereotypical contrast between East Asian and Western European cultures persists in textbooks and journal articles.

The FTSC not only informs stereotypes, but can also play a role in public opinion processes and policy decision-making and, as a result, may have social implications for macro sociopolitical processes. As Experiment 6 showed, a FTSC forms a basis for people's policy preference, especially when they have an incremental belief of society, according to which human interventions like social policies can make a difference to societal processes and, ultimately, the future course of social change. Public opinion is likely to be in favour of policies for community building if the public believes social interventions are effective if a large proportion of the people would also assume FTSC or can be convinced of its validity, and the introduction of such a social policy may be easy to justify. To the extent that the policy is effective, it may, indeed, enhance people's living conditions. A Western FTSC, however, may not always work for the people's benefit. If politicians and policy makers are afraid of increasing agency in the populace and, therefore, of losing political control over the people as the society becomes richer, they may institute a policy to curtail its citizens' social, economic and political freedoms and human rights.

There is a more insidious macro implication of a FTSC; it may become a self-fulfilling prophecy (Merton, 1948). As Deaux and Major (1989) argued with regard to gender, interpersonal interaction processes are likely to induce men and women to process information and behave in the way that is consistent with their gender stereotypes. Likewise, when people share a view about a conception of the person,

there are a number of processes that may prompt them to think and behave the way the conception of the person implies (Kashima, 2000, 2003). A cultural conception of the person is akin to stereotypes about people in one's own society that are shared by its own members (i.e. auto-stereotypes). Provided that a FTSC can underlie auto-stereotypes as well, people may conceptualize their own humanity as informed by their FTSC, and interact with each other in ways that are consistent with their auto-stereotypes. In so doing, they may end up constructing a future society that is in line with their FTSC. If this process forecloses people's attempts to explore and seek possible social worlds other than that prophesied by the FTSC, it would be a human tragedy.

### Concluding comments

What we have reported and begun to explore is a Western FTSC. As we noted in the introduction, there is no reason to assume that this is the only one. As cultural traditions and historical circumstances vary, different peoples can develop different folk theories of social change; it is critical to explore variants of folk theories of social change in different cultures. Nonetheless, social psychological implications of a Western FTSC examined in the present paper may apply more widely. To the extent that a people believe that their FTSC is universally applicable, their stereotypes may be coloured by their FTSC as we showed for the Western FTSC in Australia. Likewise, a FTSC may play a similar role in public reactions to social policies just as we reported in this paper. These issues and other implications of a FTSC need to be explored empirically across wider cultures. It is our hope that future social planning and policy decisions are informed by our awareness of our own FTSC, and its potential pitfalls, as well as the social scientific research about the reality of social change and its implications for human life.

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### End note

1. We thank Ying-yi Hong for this suggestion.

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## Appendix

### Two societies

Nuroshi people tend to live in small towns. They work with their hands, growing and preparing their own food, making their own clothes and often handcrafting their own tools. Most people are skilled at these types of manual labour, and exceptional skills in these areas are highly esteemed. Familiarity with manual skills is important for people to be able to do their jobs, for instance, knowing how to build a shed. Nuroshi people mostly produce goods themselves or in their own families. What they can't produce themselves, they obtain at local markets, often in exchange for the goods they have produced. Nuroshi people have a great respect for tradition, and tend to be cautious about using new technologies. They like to 'make things last', and try to maintain and repair their possessions for as long as possible. Mass media is not widely available, and Nuroshi people have limited information about what goes on in other parts of the world.

Zinata people tend to live in large cities. They rely to a great degree on technology and industrialization. Most food and other goods are mass-produced and distributed. There is a great emphasis on formal education, especially in science, and to be knowledgeable and technologically literate is highly esteemed. Familiarity with technology is important for people to be able to do their jobs, for instance, in knowing how to use computers. Zinata people usually obtain their goods from stores and supermarkets, and often rely on others to carry out many everyday tasks, rather than doing these tasks themselves. They embrace change and development, and they feel the need to 'keep up to date', so they are constantly updating their possessions before they get too old. The availability of many different sources of media means that they know a lot about world affairs.