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Indigenous Psychology: Grounding Science in Culture, Why and How?

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ABSTRACT

My agenda is to ground psychological science in culture by using complex rather than overly simple models of culture and using indigenous categories as criteria of a translation test to determine the adequacy of scientific models of culture. I first explore the compatibility between Chinese indigenous categories and complex models of culture, by casting in the theoretical framework of symmetry and symmetry breaking (Bolender, 2010) a series of translations performed on Fiske's (1991) relational models theory. Next, I show how the dimensional approach to culture, prevalent in mainstream psychology, fails the translation test. Ethical implications of this analysis for cross cultural psychology are discussed.

Keywords: Relational models theory, symmetry and symmetry breaking, *guanxi*, harmony, dimensional approaches to culture, orientalism

Why should psychological science be grounded in culture? The answer to this question is straightforward: In the words of Fiske (2002): "We [Western psychology] must transcend our ethnocentric framework and not just study how other cultures differ from the United States but explore what they are intrinsically" (p. 87). How to ground science in culture is a more complicated question. In this article, I offer my own solutions to this challenging task.

My agenda to ground psychological science in culture is twofold: (a) use complex, instead of overly simple models of culture, and (b) use indigenous categories as criteria of a translation test to determine the adequacy of scientific models of culture. In the following sections, I showcase Alan Fiske's (1991) fourfold model of relational cognition as an example of complex models of culture. First, I introduce three translations of Fiske—by Fiske (1991) himself, by Bolender (2010), and by my extension of Bolender (2010) to the Chinese notions of *guanxi* and harmony. Next, I examine a case of intranslatability between the dimensional model of culture and Chinese indigenous categories. Last, in the

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concluding section, I explore ethical implications of the translatability and the lack thereof of theoretical models for cross cultural psychology.

FROM COMPARISON TO TRANSLATION

Translation, according to O'Malley and Soyer (2012), is not simply a matter of knowledge moving from context A to context B, but of systems of inquiry making transformative shifts between research domains thereby opening up new possibilities for old problems. It is in this vein that I offer translation as an alternative to the haphazard comparisons prevalent in cross cultural psychology, in which high dimensional cultural systems tend to be inappropriately mapped into the one dimensional framework of population surveys.

Inspired by Charles Sanders Peirce who puts a premium on translation/interpretation in the meaning making endeavors of humans, Wallner (1994) claims that translation is the key to (true) knowledge. Reese and Overton (1970) also use translation as the criterion for testing the commensurability or incommensurability of paradigms. In the following sections, I run a translation test on Fiske's (1991) fourfold model of relational cognition, which is presented in three cycles of translation.

The first translation of Fiske's theory was by Fiske (1991) himself, who mapped out the homology between the four types of relational cognition and the four basic types of measurement scales. The second translation of Fiske (1991) was by Bolender (2010), who integrates Fiske's relational cognition with the symmetry theory of physics. Fiske (2010) points out emphatically how this second translation makes an important contribution to theory development in social science:

> John Bolender outlines not simply a new explanation of the forms of social relations, but an entirely new *kind* of explanation [. . .] Great scientific advances are based on conceiving entirely new approaches to basic phenomena, often by applying perspectives from fields previously thought to be distant to the phenomena at hand. Bolender's approach is entirely new to social science, although it is fundamental to physics and evident to biology as well. (pp. vii–viii, emphasis in the original)

In the third cycle of translation of Fiske (1991), I extend Bolender's (2010) translation to two indigenous theories of Chinese culture—Sundararajan's (2013) structural model of harmony, and Hwang's (2000, 2012) matrix of *guanxi*.

Relational Cognition: The First Translation

According to Fiske (1991), the social relations of humans, and other animals to some extent, can be modeled by four types of relational thinking which correspond to four measurement scales (see also Hwang, 2014):

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- Communal Sharing: Characterized by homogeneity, or lack of differentiation between members of the group. This type of relational thinking makes only one distinction, consisting of two non-overlapping categories: in-group versus out-group. This minimum differentiation corresponds to the nominal scale of measurement.
- Authority Ranking: Characterized by hierarchy, which serves as the major basis for differentiation between members of the group. In addition to the previous two categories of in-group and out-group, this type of relational thinking consists of a third category: greater-than and less-than. With increased differentiation, this relational thinking corresponds to the ordinal scale of measurement.
- Equality Matching: Basis for this relationship is equality or fairness in exchange, such as tit for tat. Requiring finer differentiations than Communal Sharing and Authority Ranking, the notion of equity corresponds to the interval scale of measurement.
- Market Pricing: This type of relational thinking, consistent with the rational actor model that is privileged in individualistic societies, is guided by utilitarianism, and the calculation of proper proportions as in cost/benefit analysis. The level of differentiation required to compute exact proportions is embodied in the ratio scale of measurement.

Different cultures favor different relational cognitions, which may also go through modifications in time. For instance, in traditional China, Market Pricing might be used for out-groups only, but in modern China the conceptual space of Market Pricing has expanded to include work and social life. However, a clear sense of the in-group and out-group distinction is still there in China, such that it might be offensive to apply Market Pricing to family ties, in contrast to individualistic societies, where it may not be offensive to apply Market Pricing to intimate relations, because of a less clear distinction drawn between in-group and out-group.

From Relational Cognition to Physics

The second translation of Fiske (1991) is made possible by Bolender, who grounds cognition in physics. According to Bolender (2010), the principle of symmetry and symmetry breaking that governs the physical world (Zee, 1986) is applicable to the thought processes as delineated by the fourfold relational model of Fiske. In lay terms, symmetry is synonymous with invariance or homogeneity. A hypothetically perfect symmetry may be understood in the sense of an undifferentiated wholeness, which dwindles through spontaneous symmetry breaking (to be explained later) that gives rise to differences and differentiations, with the more differentiation, the more loss of symmetry. The Chinese story about symmetry and its breakdown is found in the *Chuang Tzu*, in which we read about the demise of the

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primordial being *Hun-tun*, who died when his good intentioned friends drilled seven apertures of sense perceptions into him (see Watson, 1996, p. 95).

In technical terms, Bolender (2010) defines symmetry and symmetry breaking in terms of transformations, namely, invariance refers to invariance in transformation; and difference to loss of invariance in transformation. A transformation is "a rule for moving things around" (p. 10); a symmetry is a "transformation that makes no relevant difference" (p. 10). He gives the example of water in a glass to illustrate the notion of invariance in transformations: "No matter which way you rotate it, and no matter to what degree, it will look the same" (p. 27). Liberality or freedom of movement—in the sense of having unrestricted admissible transformations—seems to be an intrinsic property of symmetry, as Bolender puts it: "greater liberality is a greater symmetry" (p. 118).

Unrestricted admissible transformations can be observed in a family meal or people at a party drinking from a punch bowl: "One drinks three cups; another only one. But if the numbers had been reversed, it would have made no social difference. This is a symmetry" (p. 87). The type of relational cognition that best captures this symmetry is Communal Sharing (CS), according to Bolender: "In CS, one takes whatever one needs or desires, and one gives whatever one can [without making any difference to the relation]" (p. 88). After Communal Sharing, there is a descending chain of symmetry subgroups, as a result of spontaneous symmetry breaking, to be explained in the next section.

A descending chain of symmetry subgroups. Bolender (2010) invites us to imagine a perfectly still pond, in which "every part of the pond is identical to every other part: a high degree of symmetry" (p. 23). With the slightest wind, the pond ripples. This is spontaneous symmetry breaking, a process ubiquitous in nature. Consider, for instance, the formation of ice crystals:

> Suppose there is a spherical drop of water that freezes into an ice crystal. The symmetries of the crystal are striking, but the drop was even more symmetrical than the crystal. Liquid water is the same in all directions. The snowflake is the same in six directions. What one finds in the ice crystal is a reduction of symmetry, a breaking of it. (p. 25)

Using "the phase transitions from plasma to gas to liquid to solid" (p. 95) as an illustration, Bolender shows that symmetry breaking results in a descending sequence of subgroups of symmetry, descending "in the sense that each symmetry group after the first is a subgroup of the one before it" (p. 27). For instance, the group for ice crystal is a subgroup of the group for liquid water. Bolender explains that "The symmetries of the snowflake were present all along in the water drop. The loss of the other symmetries was necessary in order for the human observer to notice the symmetries of the snowflake" (p. 27).

Bolender claims that spontaneous loss of symmetry takes place also in thought. He demonstrates that Fiske's fourfold relational cognition constitutes such a

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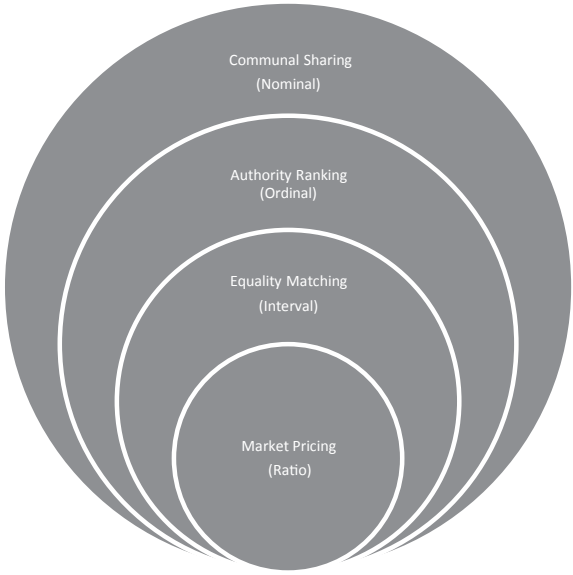


Figure 1. Fiske's (1991) fourfold relational cognition as a descending chain of symmetry subgroups, with corresponding measurement scales.
Note. (in parenthesis) = four measurement scales.

descending sequence of symmetry subgroups, corresponding to the four measurement scales, which can be summed up in Figure 1.

As shown in Figure 1, Communal Sharing represents the group of symmetry that contains the symmetries of all subgroups—Authority Ranking, Equality Matching, and Market Pricing; Authority Ranking contains the symmetries of Equality Matching and Market Pricing; Equality Matching contains the symmetries of Market Pricing, while Market Pricing is the last phase of relational cognition, having lost all the other symmetries, akin to the ice crystal or the solid state of matter.

Bolender's formulation predicts that restriction in admissible transformations will increase, as we go down the descending chain of symmetry subgroups in Fiske's (1991) fourfold relational model. This point can be illustrated by the hypothetical scenario of a meal time:

- Communal Sharing: It makes no difference, so far as group harmony is concerned, whoever eats or drinks more than the next person at a family meal.
- Authority Ranking: So long as the elders get to be served first, or are seated at the head table, guests are free to eat and drink as they like without disrupting the group harmony.

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- Equality Matching: There is more restriction in admissible transformations. For instance, all guests are allowed the same amount of free drinks at the party; no one can drink more than the other without paying.
- Market Pricing: Admissible transformations become much more restricted. For instance, a $10 plate and a $30 plate cannot be switched among the unrelated customers at a restaurant.

In the third translation of Fiske (1991), I extend Bolender's (2010) framework of symmetry to two Chinese cultural categories, first *guanxi*, then harmony.

A descending chain of symmetry subgroups in guanxi. The Chinese notion of *guanxi* refers to affect based social connections. According to Hwang (2000), *guanxi* consists of three types, expressive ties among family members, mixed ties among friends and acquaintances, and instrumental ties among strangers. Hwang's *guanxi* matrix is compatible and mutually illuminating with the descending chain of symmetry subgroups as adumbrated by Bolender (2010) in terms of the phase transitions from plasma to gas to liquid to solid.

As Table 1 shows, the high energy states of plasma and gas correspond to the expressive ties of the in-group, which are relationships based primarily on *qing* (feelings). This is consistent with the claim of Fiske (1991) that the more symmetrical the model, such as Communal Sharing and Authority Ranking, the more it is associated with powerful, primitive emotions. Conversely, the lower energy state is less symmetrical. Thus the instrumental ties of the out-group (strangers) are primarily based on the cold cognition of calculative thinking, characteristic of MP. The relational type of thinking characteristic of mixed ties is Equality Matching, in which equity is an important consideration.

The mixed ties serve the important function as a transitional phase. Corresponding to liquid which is a transitional phase between the high energy states of plasma and gas and the low energy state of solids (see Table 1), mixed ties constitute a transitional phase between the hot cognition of in-group (Communal Sharing and Authority Ranking) and the cold cognition of out-group (Market Pricing). A transitional phase is where both symmetry breaking and symmetry restoration are operative, such that water can become ice and ice, water, depending on the temperature; or friends can become strangers, and strangers, friends, depending on the principles of Equality Matching (such as reciprocity of helpful behavior).

However, going up the echelon of symmetry subgroups—transition from mixed ties to the expressive ties of in group—is not likely to happen under normal circumstances: Just as the transition from water to gas and plasma requires much higher energy states, the transition from friends (Equality Matching) to lovers (Communal Sharing) would entail a quantum jump. Thus Hwang (2000) points out that not all transitions are created equal—there is a near impenetrable boundary (see Table 1) by the between the in-group (Communal Sharing and Authority Ranking) and the mixed ties (Equality Matching), whereas the

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Table 1. An expanded model of relational cognition cast in the framework of symmetry breaking

Descending Chain of Symmetry Sub-groups			
Phase Transition of Matter	Relational Cognition	Types of *guanxi*	Proportion of *qing* (feelings) (shaded) and calculative thinking (blank)
Plasma Gas	CS(Nominal) AR (Ordinal)	Expressive Ties (in group)	
Liquid	EM (Interval)	Mixed Ties Transitional phase: *la guanxi* (seeking connections)	
Solid	MP (Ratio)	Instrumental Ties (out group)	

Note. CS = communal sharing; AR = authority ranking; EM = equality matching; MP = market pricing. (in parenthesis, underlined) = four measurement scales; Thick border = near impenetrable boundary.

boundary between Equality Matching and Market Pricing is relatively penetrable. The transition from Market Pricing to Equality Matching can be understood in terms of symmetry restoration.

According to Bolender (2010), symmetry breaking without symmetry restoration would be "freezing without thawing" (p. 86). Conversely, "the shift from MP (Market Pricing) to EM (Equality Matching)" is "a symmetry restoration, just as the melting of a snowflake is a restoration of symmetry" (p. 118). This shift from Market Pricing to Equality Matching is referred to by Hwang (2000) as *la guanxi* (seeking affective connections), which names a process that "may enable a person with instrumental ties to penetrate the relatively weak psychological boundary and transform the relationship into a mixed tie" (pp. 169–170).

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So much for my translation of Hwang's (2012) *guanxi* matrix. Now I extend the theoretical framework of symmetry (Bolender, 2010) to another cultural category—the Chinese notion of harmony.

Harmony as Symmetry. The Chinese term for harmony is "*he*" or "*ho*" which is derived from terms for musical instruments and the cooking cauldron (Lu, 2004). With regard to cooking, a statement in the *Tso Chuan*, attributed to Zen Tsu (died 493 B.C.), stated that "Harmony is like soup. There being water and heat, sour flavoring and pickles, salt and peaches, with a bright fire of wood, the cook harmonizing all the ingredients in the cooking of the fish and flesh" (Fung, 1962, p. 107). In reference to music, it is said in another classical text, the *Book of Documents*: "When the eight instruments are in good accord and do not encroach upon one another, then the spirits and man will be brought into harmony" (Holzman, 1978, p. 23). Note the salience of multiplicity and diversity, as symbolized by the multiple ingredients of the soup and the large number of musical instrument, in the above discourse on harmony. Thus Sundararajan (2013) defines harmony as a high dimensional structure that computes the equilibrium among multiple systems.

Equilibrium can be understood as a folk theory of symmetry. Whereas the modern account of the primordial symmetry breaking is the Big Bang, a Chinese variant of the theme can be found in the *Dao de jing* (Ch. 42): "The Dao begets the One; the One begets two; two beget three; and three beget the myriad things" (Lynn, 1999, p. 135). A loose translation goes something like this: In the mythical beginning was the primordial symmetry or equilibrium, which, through spontaneous symmetry breaking (One begets two; two beget three, and so on), gives rise to differences which in turn give rise to the manifold world.

One of the most insightful formulations of harmony is found in *The Doctrine of the Mean* (1971):

> While there are no stirrings of pleasure, anger, sorrow, or joy, the mind may be said to be in the state of EQUILIBRIUM. When those feelings have been stirred, and they act in their due degree, there ensues what may be called the state of HARMONY. (p. 384, emphasis in the original)

Note here that harmony is differentiated from equilibrium along the divide between pre- and post-perturbation. Cast in the framework of symmetry and symmetry breaking, this passage tells a story that goes something like this: The original symmetry, referred to as equilibrium, is characteristic of the pre-perturbation state of the mind, which, often compared to still waters in the Taoist texts, is a condition in which homogeneity looms large. Emotional episodes result in symmetry breaking; and successful symmetry restoration is referred to as harmony, in the words of Fung (1962): "To have the emotions welling up and yet in due proportion is also a state of the mean [equilibrium]" (p. 107). As such,

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harmony is not the original but the second, restored symmetry, otherwise known as dynamic equilibrium (Fung, 1962).

As Sundararajan (2013) points out, the Chinese notion of harmony as a dynamic equilibrium has far reaching implications. First, not hankering after the primordial symmetry where homogeneity reigns supreme, harmony as a second, restored equilibrium thrives in the aftermath of symmetry breaking, in a world rife with difference and diversity. Second, in order to thrive in a world of diversity, harmony is necessarily a high dimensional system that allows for a complicated relationship of balancing and counter-balancing among multiple and diverse subsystems in order for the whole system to function properly. Put another way, harmony capitalizes on a holistic multi-systems perspective that takes into consideration the agenda of a wide spectrum of sub-systems, and that favors the strategy not to eliminate differences, but rather to accept and work with them. This observation is consistent with the fact that, according to Hwang (2000), maintenance of harmony is the preferred approach to problem solving in the expressive ties. To further elaborate on these properties of harmony, I resort to Bolender's (2010) framework of symmetry.

Recall that, according to Bolender (2010), symmetry entails unrestrictedness in admissible transformations. If we understand admissible transformations in terms of differences that make no difference, then we can predict that tolerance of difference is in direct proportion to harmony. Indeed, there seems to be a connection between the holistic, multi-systems perspective of harmony and its high tolerance of difference. This point can be illustrated by the Chinese expression "It does not matter" (in Chinese "*mei guanxi*" which means literally "no *guanxi*," or "no effect on the relationship") as a harmony maintenance technique. This expression can be paraphrased as follows: Whatever difference there is as a result of the transformation (the son lost money in the family business), it does not change anything so far as the relationship is concerned (we are still family), because the difference is cancelled out or counterbalanced by so many other factors (our affection for one another, etc.), when seen from the holistic multi-systems perspective of harmony. Another case in point is the both-and logic, which renders differences invisible by playing them off of each other. This order-preserving transformation privileged by harmony is known as the principle of complementarity (Peng & Nisbett, 1999), a metaphysics that stresses the importance of considering the opposing forces of *yin* and *yang* (Fang, 2010; Li, 2011) as needed antipode and complement to each other.

The connection between harmony and tolerance of difference can be illustrated by the chain of symmetry subgroups in relational cognition. Difference can be examined along two registers, disagreement and agreement. Agreement is essential for social transactions; the requirement for agreement can be relaxed or strict, the latter insists on explicit agreement, whereas the former does not (i.e., implicit agreement shall suffice). Based on these considerations, tolerance of difference can be gauged by the extent to which the maximum number of disagreements and

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implicit agreements allowed, on the one hand; and minimum number of explicit agreements required, on the other, in order for harmony to be maintained. This yardstick of tolerance of difference can be applied to Fiske's (1991) fourfold model of relational cognition:

- Communal Sharing: In this context, a gaze, a smile, or a nod makes no informational difference in communicating the message that "we are in perfect agreement." Here explicit agreement is not needed; implicit agreement is always there in spite of a large discrepancy (disagreement) between the means of communication, ranging from gestures to facial expressions to verbal exchanges.
- Authority Ranking: Disagreement is restricted in the hierarchical context, resulting in a two-levels-of-truth approach, in which explicit agreement is needed only partially, leaving some leeway for disagreement at the implicit level. This two-levels-of-truth approach is made possible by the dialectics of *yin* and *yang*, a Chinese principle of metaphysics that allows the conflict resolution strategy of "obey publicly and defy privately" (Hwang, 2000, p. 172).
- Equality Matching: Implicit agreements are still functional, but there is the increasing need for explicit agreements, such as the consensus on turn taking. Disagreements are relatively more restricted in comparison to those in Communal Sharing and Authority Ranking, to be elaborated below.
- Market Pricing: Implicit agreements are no longer sufficient; explicit agreements are a must; and disagreements are highly restricted for transactions to go smoothly. For instance, there can be no deals, if the two parties of the transaction do not agree upon the price of the commodity for sale.

Mutually illuminating translations. Contrary to the stereotypical image of the collectivistic cultures in which one sacrifices independent thinking in the service of the group, or resorts to self-effacement as a means of maintaining group "harmony" (Matsumoto, 1989), Asians may maintain harmony by a counter-balancing act of the *yin* and *yang* duality (Sundararajan, 2013), a dialectics which allows much room for differences (read "admissible transformations"). A case in point is the two-levels-of-truth approach to harmony maintenance, which makes it possible to conform to conventions in one's outer, public reality, while remaining a nonconformist in one's inner reality. The possible edge of advantage in cognitive flexibility and creativity conferred by this approach to harmony maintenance can be illustrated by the physicist Nobel laureate Hideki Yukawa (1973), who attributed his creativity to his rebelliousness in a characteristically Asian way—docile on the outside, but a rebel on the inside:

> I can never work on a problem that I've been told to solve by someone else. My subconscious always *rebels* against being ordered to do something. Personally, I look on myself as a *docile* kind of man . . . (p. 37, emphasis added)

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The binary oppositions—such as inside versus outside, private versus public, individual versus group, implicit versus explicit, and so on—are deployed as two sides of the *yin* and *yang* duality playing off of each other, such that the difference resulting from a transformation on one side of the duality is balanced off by the opposite transformation on the other side. This is true even in the larger context of Chinese traditions, where Confucianism and Taoism are the two hands that constantly counterbalance each other throughout history—whatever the former ties the latter unties. This point is often missed by cross cultural researchers who bemoan the lack of creativity in China's formal educational system, which is under the hegemony of Confucianism, without looking elsewhere, in the arts and poetics for instance, where creativity has been fostered by Taoism for thousands of years, a fact duly acknowledged by Yukawa (1973).

In comparison to Communal Sharing and Authority Ranking, the mixed ties (Equality Matching) allow for relatively less admissible transformations. This point can be demonstrated by non-human primates who come to each other's aid in times of need. Studies (e.g., Cheney, Moscovice, Heesen, Mundry, & Seyfarth, 2010) show that when a primate sounds a "help" call, relatives come to help regardless of their recent history of interactions—"because we are family" as the Communal Sharing and AR types of relational thinking would say. By contrast, among un-related primates, the decision to help or not hinges on the nature of the recent encounter—grooming versus a fight, for instance, the former motivates helpful behavior whereas the latter does not. Thus whereas in AR and Communal Sharing, lack of reciprocity may be overlooked as one of the many admissible transformations, such infraction constitutes an inadmissible transformation in Equality-Matching-based transactions, such as that among friends and acquaintances. In sum, the Equality Matching principle of "you scratch my back and I'll scratch yours" constitutes the determining factor as to whether a primate gets a helper or not in time of need outside family and relatives. Put another way, even the lower primates seem to understand the importance of *la guanxi* (seeking affective connections).

Lastly, the Chinese saying "Don't treat me like an out-group" suggests that the Chinese seem to have an aversion toward Market Pricing. This point can be illuminated by an ancient debate. Mencius once argued against the Mo'ist ethics of universal love. He insisted on the distinction between in-group and out-group, which the universal love of the Mo'ists threatened to undermine by advocating "treating people on the street as dearly as one would treat one's father" (Tu, 1985, p. 243). Tu (1985) points out that the reason behind Mencius's objection is not the refusal to extend one's love for kin so much as the horror of emotional disengagement—to reduce the richness of the father-son relationship to the "one-dimensional encounters we normally have with people on the street, our good intention of caring for strangers as dearly as we care for our parents may result in treating our dear ones as indifferently as we treat strangers" (pp. 243–244). This aversion toward Market Pricing can have two manifestations—aversion to being

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treated as a stranger, and aversion toward strangers. While the traditional Chinese aversion or indifference to strangers is decreasing with the expanding market place in the globalizing era, the aversion to being treated like a stranger seems to persist, as evidenced by the eagerness with which people seek to eliminate their stranger status through connections (*la guanxi*).

The foregoing analysis shows that the theoretical frameworks of Fiske (1991), Bolender (2010), Hwang (2000, 2014), and Sundararajan (2013) can map nicely onto each other. In particular, Hwang (2000), and Sundararajan (2013) are mutually illuminating, as should be, since they are addressing the same set of indigenous categories. Now I turn to some translations that don't work so well.

WHERE TRANSLATIONS FAIL

According to Oyserman, Coon, and Kemmelmeier (2002), collectivistic cultures are characterized by "the permanent bonds formed among similar others," whereas individualistic cultures by "temporary relations formed in complex societies among dissimilar others" (p. 3, emphasis added). Dissimilar others, characteristic of the market place, are basically a collection of strangers. Transaction among strangers depends therefore on explicit rules, with a restricted set of admissible transformations. By contrast, harmony among similar others, characteristic of in groups, can be maintained by implicit rules that are relatively flexible and admit of a relatively large number of admissible transformations. This formulation, consistent with the foregoing analysis, predicts that tolerance of differences in interpersonal transactions would be relatively higher in collectivistic cultures than in individualistic cultures. However, a very different picture is presented in a large scale cross culture study by Gelfand et al. (2011), which found that along the divide between collectivism and individualism fall the distinction between tight and loose cultures. Tight cultures "have many strong norms and a low tolerance of deviant behavior," whereas loose cultures "have weak social norms and a high tolerance of deviant behavior" (p. 1100). For instance, collectivistic cultures "have a more restricted range of appropriate behavior, have high censuring potential, and leave little room for individual discretion" (p. 1101).

According to Wallner (1994), if the proposition in one scientific theory cannot be translated into the language of another, the method or procedure for attaining this proposition should be interrogated. In the following sections, I explore the possibility that this stereotype of intolerance of difference in collectivistic cultures may be an artifact of the dimensional approach to culture.

The Dimensional Approach to Culture

The goal of the dimensional approach is to "specify the quantifiable dimensions of culture that can account for psychological differences between people of different

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cultures" (Zhou & Cacioppo, 2010, p. 61). On this account, cultures are measured by their positions along a continuum that is anchored on two antithetical points, such as collectivism versus individualism. As with many other practices in mainstream psychology, the dimensional approach to culture is based on a universalism that is infested by individualism (Danziger, 2006), such that the rationality of Market Pricing—the relational cognition characteristic of individualism (Fiske, 1991)—tends to be privileged as the measure of all things. For instance, in the study of Gelfand et al. (2011), the focus is on control, a mode of transaction characteristic of the instrumental ties among strangers. Control is measured in terms of external control—the strength of societal norms or degree of situational constraint—and internal control, such as prevention self-guides, self-regulation, and self-monitoring abilities. Since, according to Fiske (1991), Market Pricing is the least likely model to result in any socially significant relations, it is inappropriate to use the Market-Pricing-based rationality as a measure of social relations across cultures. This point is elaborated in the following sections.

The procrustean bed of the one dimensional model. The Market-Pricing-based rationality privileges explicit expressions and either/or logic, which are part and parcel of the highly restricted admissible transformations of a symmetry sub-group that is situated at the end of a sequence of symmetry break down (see Fig. 1). As such, the Market-Pricing-based rationality leaves out much that is operative as admissible transformations—such as the both-and logic and implicit expressions of thinking and feeling—in systems with relatively higher degree of symmetry, as is the case with collectivistic societies. For illustration, the one dimensional approach to culture may be compared and contrasted with the Chinese notion of harmony, in which *yin* and *yang* constitute two dimensions, rather than two anchor points on one dimension (see Figure 2).

Corresponding to the *yin* and *yang* duality are the distinctions between inner and outer reality, private and public life, implicit and explicit beliefs, and individual and group interests. Harmony entails a both-and, rather than either/or, relationship between any two dimensions mentioned above. This observation calls into question the appropriateness of some measures in cross cultural studies. For instance, the use of forced choice items of independence versus interdependence on participants who perceive the tasks of life not in terms of a choice between two orders of reality—individual versus group interests, etc.—so much as affirming both realities, and negotiating for a viable relationship between the two (Fang, 2010).

Difference to whom? Another problem with the dimensional approach lies in the fact that the selection of dimensions are prone to the dictates of ethnocentrism. The dimensional approach has spawned many dichotomies such as individualism versus collectivism, and independent versus interdependent self construals. Such dichotomous views of culture perpetuate the long shadows of orientalism:

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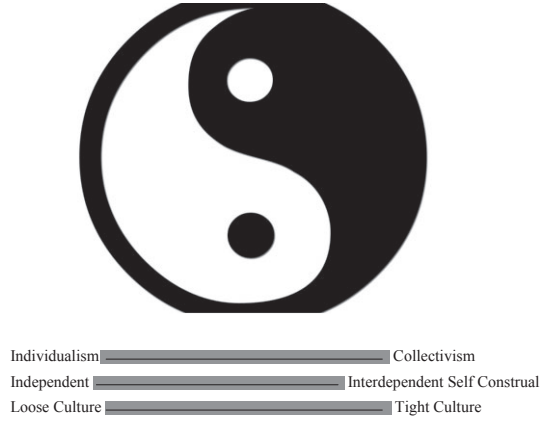


Figure 2. Dimensionality in models of culture.
Upper panel: *Yin-yang* duality has two dimensions.
Lower panel: One dimensional models, as shown in three of the dimensional approach to culture.

> Throughout the exchange between Europeans and their "others" that began systematically half a millennium ago, the one idea that has scarcely varied is that there is an "us" and a "them," each quite settled, clear, unassailably self-evident. (Said, 1993, p. xxv)

To elaborate on this point, I explore the possibility that the difference shored up by some one dimensional measures may be a difference that actually makes no difference psychologically to the local culture. Consider the need for structure allegedly characteristic of the tight, collectivistic cultures. Gelfand et al. (2011) found that need for structure cut across the board in both inner and outer control: "the higher (or lower) degree of social regulation that exists at the societal level is mirrored in the higher (or lower) amount of self-regulation at the individual level in tight and loose nations, respectively" (p. 1101). But external and internal control may have very different meaning and valence, a disparity that contributes to a dynamism of antagonism and synergy between the opposing forces of *yin* and *yang*—a dynamism sustained by harmony's duality of inner and outer reality, but is completely glossed over by the one dimensional approach.

High external control entails a decrease in personal liberty, thus fitting the tight culture profile. But internal control, such as better impulse control and higher self-monitoring ability, on the contrary, entails an increase in autonomy which contributes importantly to a personal sense of freedom. Thus tightness, in the sense of high control and low freedom, seen from the one dimensional perspective may not be a psychological reality of the local culture that computes the trade-offs between the inner and the outer freedom. Recall that according to Bolender (2010), the symmetries of snowflakes are not visible in a drop of water, which

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contains a plethora of all possible symmetries of the snowflake such that it is only when all other symmetries are lost through freezing that the symmetries of one particular snowflake become visible. By the same token, the one dimensional approach to culture is the explanatory model of a frozen universe—the universe of science that has lost much of the richness and complexity of a world of higher symmetry where cultures inhabit.

SUMMARY AND CONCLUSION

In this paper, I argue that to ground science in culture is to use complex models. Using the notion of symmetry as a common denominator to facilitate cross translations, I have demonstrated the compatibility between complex models of culture and Chinese indigenous categories. I have also examined the incompatibility between the dimensional approach to culture and indigenous cultural categories. I showed how misrepresentations happen, when the multi-dimensional cultural categories are processed through the grid of one dimensional measures that render into unnecessary dichotomies, such as individualism versus collectivism, the higher dimensional gestalt of the indigenous cultural categories. Triandis (e.g., Triandis & Gelfand, 2012) and others have also pointed out the discrepancy between the different units of analysis: Collectivism and individualism are opposites when population (which unfortunately tends to be referred to as "culture" in the field) is the unit of analysis. By contrast, when individuals are the units of analysis, collectivism and individualism can be orthogonal to each other, such that a person can be high on both tendencies. Cast in the present framework, the shift from persons to aggregate data of the population signifies a strategic move from the higher dimensional to lower dimensional units of analysis—a movement that goes against the grain of grounding science in culture canvassed here.

By way of conclusion, I add an ethical dimension to the argument for grounding science in culture. For a start, I suggest that, although there is no consensus on the definition of culture (Jahoda, 2012), we reserve the term "culture" for an integrative approach that honors the complexity of the phenomena under investigation. Just as the term "person" can be differentiated from brain mechanisms and behaviors as belonging to a higher, more holistic level of analysis, cultural analysis can be differentiated from population studies.

Ethical considerations for privileging the structurally complex categories of culture may be argued along the line of distinction in cognitive processing between person and object recognition. Person recognition entails a complex, configural processing which consists of perceiving relations and configurations among the constitutive parts of a stimulus (Maurer, Le Grand, & Mondloch, 2002). In contrast is object recognition that capitalizes on analytic processing which does not take into account configural relations among the stimulus parts. This distinction between person and object recognition is important when it

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comes to the question of how to perceive the other, especially in light of the accumulating evidence that objectifying others has a dehumanizing effect (Loughnan, Haslam, Murnane, Vaes, Reynolds, & Suitner, 2010).

As Abramson (2012) points out, all the existing models of culture can be useful, depending on the context. It seems to me that depending on the research agenda, simple models such as the dimensional approach can generate useful information for cross population comparisons (Gelfand et al., 2011), and within population studies (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). When it comes to cross cultural comparisons, however, more complex, higher dimensional models of culture that, akin to person recognition, take into account configural relations is warranted, if psychology is to extend its campaign against objectifying the "other" from gender (Bernard, Gervais, Allen, Campomizzi, & Klein, 2012) to the international arena.

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