

POLYTASKING AND HUMAN VALUES ACROSS CULTURES

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POLYTASKING AND HUMAN VALUES ACROSS CULTURES

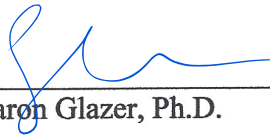
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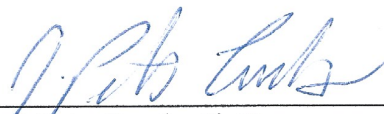
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ABSTRACT
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by Holly M. Moody

This study examines the relationship between polytasking and human values, at the individual level of analysis, across three groups from two culturally distinct countries (India and USA). Both archival and non-archival survey data are used in a combined data collection effort consisting of 401 full-time employees working at high-tech companies. Drawing on findings from research on time management behaviors and values, it was hypothesized that correlations between personal preference for polytasking and Schwartz's (1994a) higher order values (e.g., Self-Enhancement values, Openness to Change values, Self-Transcendence values, and Conservation values) would correlate in the same direction across cultures. It was also hypothesized that the magnitude of these correlations would be variant between cultural groups. The first and second hypotheses are partially supported, and the third hypothesis was not supported. Pair-wise comparisons show that the negative correlation between Self-Transcendence values and polytasking is stronger for nonIndians in the USA instead of for Indians in the USA. Although Schwartz's (1994a) higher order values have never been evaluated in relation to behavioral-oriented preference for polytasking at the individual level (i.e., polytasking), this study shows that values might relate to polytasking preferences and culture might have a role, but its role is still inconclusive. The results also have implications for hiring criteria.

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INTRODUCTION

Almost all jobs today require the ability to successfully toggle between multiple tasks. Multitasking is the action or behavior of doing multiple things at once (König & Waller, 2010) whereas monotasking is completing one task at a time (Leonard, 2008). Swiss and German researchers have found that people who are good at their jobs are most likely good at multitasking (Bühner et al., 2006). Having the capability to attend to multiple demands can have good outcomes for the individual, such as receiving high performance reviews (Kantrowitz et al., 2012).

Similar to multitasking, polytasking refers to an individual's *preference* to perform multiple tasks at the same time but, unlike multitasking, polytasking involves engaging in multiple tasks *within the same domain* (e.g. work-related tasks performed in the work environment; "Polytasking," n.d.). It is important to note that polytasking can involve multitasking, but multitasking is not polytasking. For example, the CEO of an organization who prefers to respond to her work emails while also taking a conference call is multitasking because she is doing multiple things at the same time; however, because the tasks being performed all pertain to the same common domain (in this case the work domain), it is an act of polytasking. The current paper refers to polytasking as solely pertaining to the work domain, since the current study examines employees at work.

Temporal orientation research has focused heavily on the behavior of multitasking; however, a few studies have focused on attitudes toward multi- or polytasking (Bluedorn et al., 1999; Conte & Gintoft, 2005; Conte & Jacobs, 2003; Glazer & Palekar, 2013; Kantrowitz et al., 2012). These studies have found that one predictor of

performing a variety of different activities within a given timeframe is the person's *preference* to multitask. That is, a person who multitasks well might enjoy having several tasks to perform. Research has also found that certain personality factors contribute to an individual's tendency to multitask or polytask. For example, individuals with Type A personality are characterized by a preference to engage in multiple activities at once (Palmer & Schoorman, 1999).

Basic human values (i.e., principles that guide behavior) are motivators that drive people's actions (Schwartz, 1994a) and provide insight into explaining why people do what they do. Therefore, knowing an individual's values and preference toward polytasking could help management set goals and priorities that would lead to greater well-being and motivate the employee to perform more effectively (e.g., Sagiv & Schwartz, 2000). For example, if a supervisor gives an employee a new task with a completion deadline of "as soon as possible," and the supervisor knows that the employee is achievement-oriented (i.e., the employee values achievement) and thrives on juggling between multiple tasks (i.e., has a preference for polytasking), the employee would likely stop working on the current tasks in order to start working on the new task. Starting new tasks before finishing old ones is indicative of a polytasking orientation that might be influenced by an achievement-oriented value to complete tasks. Conte et al. (1999), in fact, found a positive correlation between achievement-striving and polytasking.

At the psychological level, researchers (e.g., Glazer & Palekar, 2013; Leonard, 2008) found individual variations in preferred task orientation within different cultures, suggesting that cultural values may influence people's preferences for task orientation. Cultural values are principles that are endorsed by a culture and guide behaviors

(Schwartz, 1994a). For example, polychronicity and monochronicity represent a culture's collective attitude towards time—whether a culture focuses on events or uses the clock to guide behaviors, respectively (Hall, 1983)—and are associated with collectivism and individualism (Billing et al., 2009; Hall, 1959; Leonard, 2008; Levine & Bartlett, 1984; Levine et al., 1980). Polychronicity and monochronicity refer to the way people in a culture are reinforced to view time as static or flowing (Billing et al., 2013; Leonard, 2008). Polychronic cultures view events cyclically; events can overlap or usurp the priority of other events at any given moment (Hall, 1983). Monochronic cultures view events linearly; events have a clear start and finish. For example, in the Western world, time is variable, not static, and it is salient (Bluedorn & Denhardt, 1988).

Collectivistic cultures reinforce relationships, and view time as a function of relationship priorities (Hofstede, 2001). In other words, people are encouraged to think more about supporting relationships. In some cultures, certain relationships take precedence over others and therefore people will attend to events involving relationships of greater priority than events involving people for whom relationships are less important. This cultural practice reinforces polychronicity (Billing et al., 2009; Hall, 1959; Levine & Bartlett, 1984; Levine et al., 1980), as people are encouraged to jump between events that entail different domains of relationships. Similarly, individualistic cultures reinforce individual needs over relationships (Hofstede, 2011); the clock serves as the entity with which a person must negotiate engagements. This practice of using the clock to guide one's time refers to monochronicity (Billing et al., 2009; Hall, 1983). In monochronic cultures, people are encouraged to engage in one task at a time through to completion before moving onto another task (Hall, 1983). This information about

polychronicity and monochronicity is important as one of the goals of this study is to determine if the relationship between values and polytasking at the individual level of analysis is invariant across cultures.

Further, while we know that human values guide behaviors, there is little information correlating human (individual level) values with individuals' preference for polytasking [i.e., an individual's preference to *perform* many (work-related) tasks in a given timeframe]. Thus, there is little information to explain the reasons why some people endorse polytasking and others monotasking (i.e., preference to *do* many tasks in a given timeframe vs. preference to complete one task at a time). This study attempts to examine the link between human values and individuals' preferences for mono- or polytasking, drawing on findings from research on time management behaviors and values, to guide the conceptual justification and theoretical rationale for the presented hypotheses.

Focal Population

The high-tech industry in Silicon Valley in California is the center of technological innovation and exportation, bringing in talent from all over the world in order to keep up with other high-tech global cities (Alarcón, 1999; Massaro, 2017; Saxenian, 2002). In fact, by the year 2000, “over half (53%) of Silicon Valley's scientists and engineers were foreign-born. Indian and Chinese immigrants alone accounted for over one-quarter of the region's scientists and engineers, or approximately 20,000 Indian and 20,000 Chinese (5,000 Taiwan- and 15,000 Mainland-born) engineers” (Saxenian, 2005, p. 36). While the number of foreign-born high-tech workers in Silicon Valley (38%) is high relative to the state and nation, the proportion is even larger for those in the

core working age group: 67% of 25- to 44- year-olds holding tech jobs are foreign-born (Massaro, 2017).

One of the stressors commonly expressed amongst high-tech employees in Silicon Valley is temporal orientations toward deadlines that do not match that which is expected (Hazan, 2005). This study, therefore, extends current knowledge to assess the extent to which values relate to polytasking across three cultural groups: Asian Indians in USA (henceforth Indians in the USA), Asian Indians in India (henceforth Asian Indians are referred to only as Indians in India), and Americans of non-Asian Indian background (henceforth referred to as nonIndians in the USA or nonIndian Americans). These populations were chosen for three reasons. First, Silicon Valley is home to a large number of Asian Indians (Saxenian, 2005). Second, India and the United States of America (USA) differ in time orientation (i.e., polychronic and monochronic, respectively, Hall, 1983). Third, Asian Indians in both India and USA and non-Asian Indians in the USA endorse polytasking differently (Glazer & Palekar, 2013).

Study Summary

In this study, I attend to individual level preference for polytasking, as the focus is on what individuals prefer and not what is culturally practiced. Since “individuals develop [a] temporal orientation in response to cultural values of their societies” (Doob, 1971, as cited in Billing et al., 2009, p. 212), I expect that the relationship between values and task orientation will be in the same direction across cultures, but the magnitude of the relationships will differ between nonIndians in the USA, Indians in the USA, and Indians in India. Specifically, polytasking will positively correlate with Self-Enhancement and Openness to Change values, and negatively correlate with Self-Transcendence and

Conservation values (see Table 1 for definitions). Also, the positive correlations between polytasking and Self-Enhancement and Openness to Change values will be stronger for nonIndians in USA, than Indians in the USA, and weak (but still positive) for Indians in India. The negative correlations between polytasking and Self-Transcendence and Conservation values will be stronger for Indians in India, followed by Indians in USA, and weak (but still negative) for nonIndians in USA. Understanding the relationship between values and task orientation at the individual level of analysis and learning how these correlations are similar or different between cultural contexts can be useful for developing programs that enable immigrants to acclimate to their host society.

In the next section, I present literature on values, task orientation, and the relationship between the two. Additionally, I expand on the rationale for focusing on Indians in India, Indians in the USA, and nonIndians in the USA. Finally, I conclude the literature review section with three hypotheses.

LITERATURE REVIEW

In the late 1980s, interest in temporal issues in organization and management literature began to develop (Bluedorn & Denhardt, 1988). Researchers recognized that perceptions of time shape individual personality, motivation, mood, perceived stressors, judgments, and decision-making (Billing et al., 2009; Zimbardo & Boyd, 1999). It became further evident that temporal orientation impacts how well an expatriate adjusts to a new culture. Managers from monochronic cultures (e.g., USA) were oftentimes becoming frustrated when working in polychronic countries (e.g., India; Bluedorn & Denhardt, 1988). It was presumed that the frustration stemmed from incongruence

between host and immigrant temporal preference for fulfilling work tasks, as Glazer and Palekar (2013) showed that temporal incongruence relates to strain.

Specifically, using a portion of the same dataset of high-tech workers that will be used in this thesis, Glazer and Palekar (2013) found that non-Asian Indians in the USA preferred polytasking more than Asian Indians in both the USA and India did. Moreover, Asian Indians in the USA did not differ significantly from Asian Indians in India on preference to polytask. The researchers suggested that national culture might have a strong influence on individual preference for polytasking, such that India's cultural attributes influence Asian Indians in the USA more strongly than do U.S. cultural attributes. Their research highlights the importance of studying and understanding temporal orientation at the individual level of analysis. Similarly, researchers identified values as a correlate to subjective well-being (Sagiv & Schwartz, 2000), but there is little information on how values and task orientation relate with each other. Each one relates to strain, but the question remains: Do they relate with each other?

Values

Values reflect principles that people desire to live by and thus motivate people as they strive to fulfill their values (Schwartz, 1992b; 1994a; Schwartz et al., 2012). Values are not what one has, but what one strives to have, and can be examined at both the cultural and individual levels (Schwartz, 2012). Values shape how people interpret and judge events, behaviors, and individuals (Fischer, 2013), and are a component of cognition.

Value Types

Schwartz (1992b) developed the Theory of Basic Human Values. He theorized

that people in all societies maintain basic human values (i.e., power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security), but to differing degrees. These ten basic human values are considered to be an aspect of personality (Schwartz, 2017) and have been found to remain relatively stable across a person's lifetime (Bardi et al., 2009; see Table 1 and Figure 1).

The basic human values are based on three responses to universal requirements, with which all individuals and societies must cope: Needs of individuals as biological organisms, fundamentals of coordinated social interaction, and necessities for smooth functioning and survival of groups (Ros et al., 1999; Schwartz, 2012). The ten basic values (see Figure 2) are further organized into higher order values: Openness to Change values, Conservation values, Self-Enhancement values, and Self-Transcendence values (Schwartz, 1992b). Openness to Change values (stimulation, self-direction, and hedonism values) oppose Conservation values (security, conformity, and tradition values). Self-Enhancement values (power, achievement, and hedonism values – note hedonism value is calculated in both Openness to Change and Self-Enhancement values per Schwartz, 1994a) oppose Self-Transcendence values (benevolence and universalism values).

Bardi et al. (2009) found that, within a person, Schwartz's (1992b) basic human values are relatively stable over time and only increase or decrease by a very small amount. If these values do change, it is due to a significant event occurring and changes in these values will automatically change complementary and opposing values. Values are motivating factors that influence how people interpret events. For example, values related to how people explained the bombings of September 11, 2001 in the USA (Cohrs et al., 2005; Whitley, 1999) can provide insights into politics, such as an individual's or

Table 1*Basic Human Value Types and Definitions*

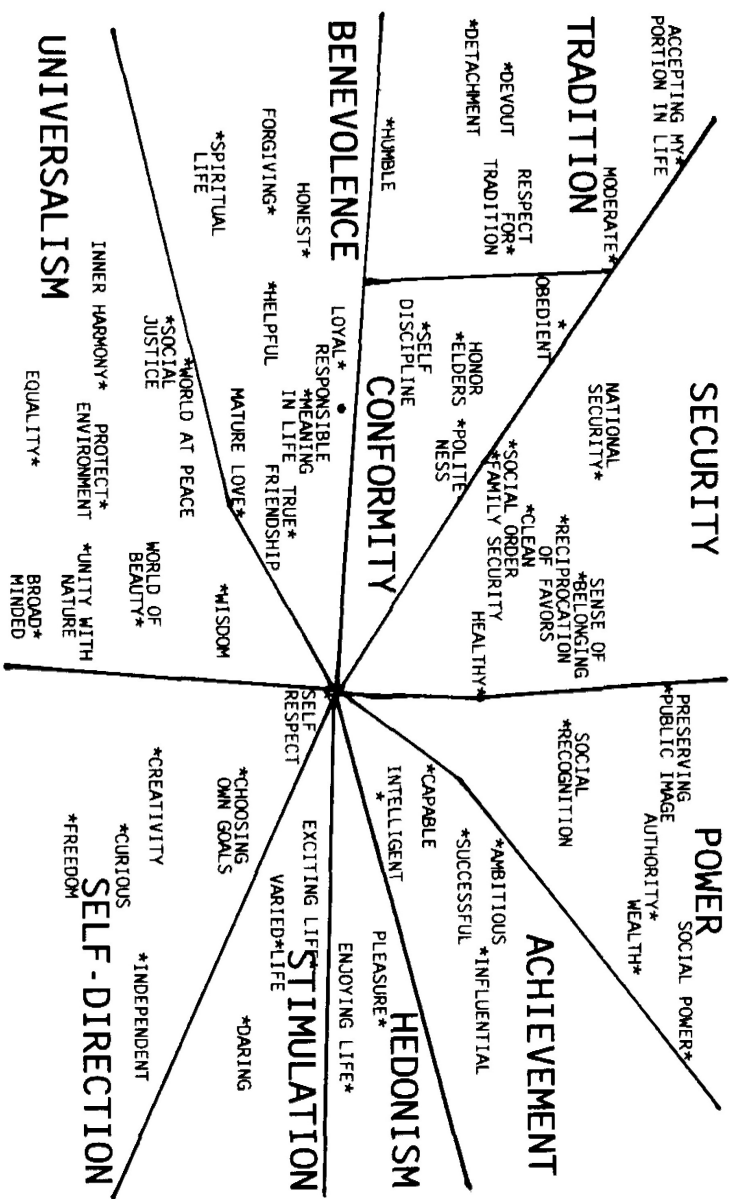
Types:	Definitions
POWER:	Social status and prestige, control or dominance over people and resources (e.g., Social Power, Authority, Wealth).
ACHIEVEMENT:	Personal success through demonstrating competence according to social standards (e.g., Successful, Capable, Ambitious, Influential).
HEDONISM:	Pleasure and sensuous gratification for oneself (e.g., Pleasure, Enjoying Life).
STIMULATION:	Excitement, novelty and challenge in life (e.g., Daring, a Varied Life, an Exciting Life).
SELF-DIRECTION:	Independent thought and action-choosing, creating, exploring (e.g., Creativity, Freedom, Independent, Curious, Choosing own Goals).
UNIVERSALISM:	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature (e.g., Broadminded, Wisdom, Social Justice, Equality, A World at Peace, a World of Beauty, Unity with Nature, Protecting the Environment).
BENEVOLENCE:	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact (e.g., Helpful, Honest, Forgiving, Loyal, Responsible).
TRADITION:	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provides (e.g., Humble, Accepting my Portion in Life, Devout, Respect for Tradition, Moderate).
CONFORMITY:	Restraint of actions, inclinations and impulses likely to upset or harm others and violate social expectations or norms (e.g., Politeness, Obedient, Self-discipline, Honoring Parents and Elders).
SECURITY:	Safety, harmony and stability of society, of relationships, and of self (e.g., Family Security, National Security, Social Order, Clean, Reciprocation of Favors).

Note. Adapted from “Value Priorities and Social Desirability: Much Substance, Some Style,” by S. H. Schwartz et al., 1997, *British Journal of Social Psychology*, 36(1), p. 7. Copyright 2011 by John Wiley and Sons.

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Figure 1

Coplot of Basic Human Values and Items



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culture's view on immigration (Vecchione et al., 2012). Values can also explain employee relationships (i.e., workplace commitment; Cohen, 2009; Glazer et al., 2004), organizational culture (Sagiv & Schwartz, 2007), and the effectiveness of international mergers (Ahern et al., 2015). Because values are “desirable, trans-situational goals that vary in importance as guiding principles in people's lives” (Ros et al., 1999, p. 51) and temporal orientation refers to how people engage with people and their environment, it is helpful to understand how both relate with each other to further understand the complexity of culture's influence on people's experiences.

Relationships Amongst Values

Schwartz (1992b) created a circular structure model which organizes basic human values according to their higher order values (i.e., Openness to Change, Self-Enhancement, Conservation, and Self-Transcendence values), as well as by congruency. That is, they are organized by which values share the same motivators and which values do not. Values which are congruent are located near each other. Values that do not share the same motivators are positioned diametrically opposite of each other (see Figure 2).

The reasoning behind Schwartz's (1992b) organization of the circular structure is that the pursuit of one value most often conflicts with pursuit of its opposite value. For example, an individual may pursue both power and achievement values (i.e., Self-Enhancement values) because someone who is motivated by power is most likely going to also be motivated and pursue achievement in their life. However, an individual pursuing Self-Enhancement (power and achievement) values is going to conflict with also pursuing Self-Transcendence (universalism and benevolence) values.

Schwartz (2017) also notes that people pursue competing values through different

acts, at different times, and in different settings, but never in the same act. Also, when it comes to building hypotheses, many researchers examine correlations of values in isolation, rather than values in pairs according to their higher order domain (Fischer, 2013). Focusing on a single value leads to distorted and misleading results (Fischer, 2013); therefore it is important to consider values that are compatible, as well as the opposing set of values when making predictions (e.g., Self-Enhancement values vs. Self-Transcendence values and Openness to Change values vs. Conservation values; Schwartz, 1992b).

Furthermore, Schwartz's (1992b) model suggests that strong positive correlations between one set of compatible values (e.g., Self-Enhancement and Openness to Change values) should be matched by negative correlations between the set of values that oppose it in the circular structure (e.g., Self-Enhancement and Openness to Change values negatively correlate with Self-Transcendence and Conservation values). Schwartz describes this pattern as the sinusoidal curve. The current paper uses the sinusoidal curve to guide and display proposed relationships with preference for polytasking. Schwartz's Higher Order Values structure is displayed in Figure 2.

Defining Monotasking and Polytasking

Multitasking refers to a preference *to engage* in multiple activities within the same timeframe (Leonard, 2008), but not necessarily engaging in activities that share a common domain (e.g., driving kids to an activity while taking a work call meeting). Polytasking refers to an individual's preference *to perform* multiple tasks that are related to one another within any given time (e.g., responding to work emails while on a conference call). Monotasking, as defined by Leonard (2008), is “the preference *to*

complete one task before starting another” (p. 481).

Figure 2

Theoretical Model of Relations Among Motivational Types of Values, Higher Order Value Types, and Bipolar Value Dimensions



Note. Adapted from “Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries,” by S. H. Schwartz, 1992b, *Advances in Experimental Social Psychology*, 25(1), p. 45. Copyright 1992 by Elsevier. Adapted with permission.

The current study examines the relationship between higher order values and polytasking tendency. Therefore, an overall guiding question throughout this paper is:

What is the relationship between higher order values and polytasking?

Polytasking and Values

Human values are considered to be an aspect of personality (Schwartz, 2017) and, because values influence time management, it would make sense that certain personality types relate to polytasking or monotasking preferences. Type A Behavior Pattern is generally composed of three sub-traits, including competitive achievement motivation, time urgency, and hostility (Larsen & Buss, 2014). Type A people tend to be in a hurry and feel under pressure to get as much done in the least amount of time (Larsen & Buss, 2014). Because Type A individuals view time as a scarce resource (Landy et al., 1991), they do many things at once (Palmer & Schoorman, 1999).

Conte et al. (1999) found that polytasking significantly correlated with achievement striving ($r = .18, p < .05$) among a sample of college students. Achievement striving refers to “the tendency to be active and to work hard in achieving one's goals” (Conte et al., 1999, p. 2) and may be a subcomponent of Type A behavior pattern (Ishizaka et al., 2001). Conte and colleagues suggested that achievement-oriented individuals might prefer to work on multiple tasks at once in order to achieve more goals in the same amount of time.

Similarly, extroverts are characterized as being outgoing, talkative, and tend to gain energy in social situations (Judge et al., 1999). Therefore, it seems likely that extroverts would value stimulation (Conte & Gintoft, 2005; Conte & Jacobs, 2003) and prefer to engage in polytasking (since polytasking involves high levels of simultaneous stimulation). In fact, polytasking positively related with extroversion ($r = .22, p < .01$; Conte & Gintoft, 2005; Conte & Jacobs, 2003). Ginther and Jacobs (2014) had similar

results in that there was a positive correlation between polychronicity and extroversion ($r = .14, p < .01$).

Furthermore, Schwartz (2017) reported that extroversion positively correlates with Self-Enhancement (including stimulation, power, and achievement) values and most strongly with stimulation value ($r = .36, p < .05$). It negatively correlates with Conservation values (including conformity and tradition values). Furthermore, Self-Enhancement values and Openness to Change values complement each other (Schwartz, 1992b). Therefore, it is expected that these two dimensions will both positively correlate with polytasking. This is because Self-Enhancement values and Openness to Change values share similar qualities or motives that are found in individuals who have a strong preference for polytasking. “Polychronic cultures are by their very nature oriented to people. Any human being who is naturally drawn to other human beings and who lives in a world dominated by human relationships will be either pushed or pulled toward the polychronic end of the time spectrum” (Hall, 1983, p. 53). According to Schwartz’s (1992b) circular structure, Self-Transcendence values and Conservation values oppose Openness to Change values and Self-Enhancement values, therefore it is expected that these two dimensions (Self-Transcendence values and Conservation values) will both negatively correlate with polytasking. Self-Transcendence values and Conservation values also share similar qualities or motives found in monotasking individuals (Hall, 1983). Drawing on the findings mentioned above and given Schwartz’s (1992b) circular structure of opposing higher-order human values, it was hypothesized that:

H₁: Polytasking will positively correlate with (a) Self-Enhancement values
(composed of achievement, power, and hedonism values) and (b) Openness

to Change values (composed of stimulation, self-direction, and hedonism values), but will negatively correlate with (c) Self-Transcendence values (composed of universalism and benevolence values) and (d) Conservation values (composed of security, conformity, and tradition values).

Cultural Invariance of the Values-Polytasking Relationship

There is clear evidence that people view time differently across cultures (Glazer & Palekar, 2013; Leonard, 2008; Levine et al., 1980) and temporal orientations relate with cultural values (Billing et al., 2009). However, to my knowledge, there is no research relating Schwartz's (1994a) individual level values with individual level polychronicity (i.e., polytasking). The direction of the relationships between values and polytasking are expected to be the same across cultures, but the magnitude of the relationships between the focal variables ought to differ.

To test this assertion, I compare results of the variables' relationships with three samples originating from two discrete temporal orientations. Examining the focal variable relationships in contexts that represent monochronic and polychronic cultures, provides an opportunity to determine if the correlations are invariant across cultures or if culture influences the correlations at the individual level of analysis. The countries from which samples were drawn, represent a polychronic (India) culture and monochronic culture (USA).

Monochronicity and Polychronicity

Hall (1983) defines time as consisting of two constructs, monochronic (M-time) and polychronic (P-time). Monochronicity and polychronicity refer to a *culture's* preference of temporal orientation (how time is viewed within that culture). Cultures that

subscribe to M-time orientation view time as being linear and tangible with the capacity to be wasted, saved or spent; encourage their people to manage their time by making lists and crossing off tasks on their “To Do” lists; and manage their time around the clock (“Clock Time”). The phrase, “Time is Money” is a monochronic anthem. As Leonard (2008) describes, “time to rise and sleep is based on the clock” (p. 480). Countries that are monochronic include: USA, Germany, and Scandinavian countries (Bluedorn & Denhardt, 1988; Hall, 1983; Kaufman et al., 1991).

Polychronicity (P-Time) characterizes a culture’s preference for following events (i.e., “Event Time”) rather than the clock. It emphasizes the maintenance of relationships as a driver for the toggling between activities (Hall, 1983). In P-time cultures, people are not punished for missing appointments or running late to appointments because of their involvement with others (Hall, 1983). “The time to rise and sleep is based on the rhythm of nature or of others in the social group” (Leonard, 2008, p. 480). Countries considered polychronic are India and those in Latin America, Middle East, and around the Mediterranean Sea (Bluedorn & Denhardt, 1988; Hall, 1983; Kaufman et al., 1991).

The idea of time (or even the lack of the idea of time in a society) shapes how individuals view their world (Hall, 1983), manage their time, and coordinate their tasks (i.e., multitasking or monotasking). In some cultures, time is not a concept that is quantifiable or even known as a concept; for many, there is no clock (Hall, 1983). Life goes with the flow of events as they occur.

In contrast, in western, cosmopolitan cities, such as New York City, Paris, Munich, or Melbourne, people’s lives are regimented by the clock; people in such cities often rush to “beat the clock,” in what some might refer to as “the rat-race.” The U.S.

culture endorses getting to business meetings, school classes, or even social engagements with friends “on time,” meaning the exact time specified for the engagement. In other societies, “on time” means within the hour or within the day. Through socialization, most people within a culture come to endorse their culture’s temporal orientation. Therefore, understanding others’ conception of time can help one gain a better understanding of why individuals do what they do.

Glazer and Palekar (2013) found that country culture does influence task orientations and that there are individual variations of polytasking within cultures. Specifically, nonIndians in the USA preferred to polytask at work more than Indians in the USA and Indians in India did. Furthermore, Indians in the USA did not differ significantly from Indians in India on preference for polytasking.

The current study extends Glazer and Palekar’s (2013) work by comparing correlations of individuals’ task orientation (i.e., polytasking) and higher order values across three cultural groups: Indians in India, Indians in the USA, and nonIndians in the USA. If culture influences the relationship, then correlations will be significantly different across the cultural groups. If the relationships do not differ significantly, we may be identifying a culturally universal relationship.

USA vs. India

Schwartz (1999) found that the USA and India emphasize Mastery values (i.e., ambition, success, daring, self-sufficiency, and competence values) and Hierarchy values (i.e., social power, authority, humility, and wealth values) more than most other countries. A closer examination of these two cultural values reveals that India emphasizes Mastery and Hierarchy values more than the USA does, owing perhaps to the Indian

traditions of finely gradated social strata and caste (Dirks, 2001). India also leans more towards Conservation values (i.e., social order, respect for tradition, security, obedience, and wisdom values) than the USA, whereas the USA leans more towards Affective Autonomy values (i.e., pleasure, exciting life, and varied life values) than India does.

It is also expected that nonIndians in the USA might endorse idiocentric values (i.e., person-focused values that at the individual level reflect the culture level notion of individualism; Sorthaix & Schwartz, 2017; Triandis, 1995, as cited in Leonard, 2008), such as Self-Enhancement and Openness to Change values (including stimulation, self-direction, power, achievement, and hedonism values). In contrast, Indians in India would more likely endorse allocentric values (i.e., social-focused values that at the individual level that reflect the culture level notion of collectivism; Sorthaix & Schwartz, 2017; Triandis, 1995, as cited in Leonard, 2008), such as Self-Transcendence values (universalism and benevolence values) and Conservation values (security, conformity, and tradition values). Finally, Indians in the USA are likely to endorse growth and self-expansion values (i.e., values that represent an individual's desire to self-actualize), such as Openness to Change and Self-Transcendence values, as well as achievement values (by affirming personal competence; Sorthaix & Schwartz, 2017). Because Americans generally tend to endorse Affective Autonomy values, it is expected that:

H₂: (a) Self-Enhancement values and Openness to Change values will be strongest amongst nonIndians in the USA than amongst Indians in the USA and Indians in India. (b) Self-Transcendence values and Conservation values will be strongest amongst Indians in India compared to Indians in the USA and nonIndians in the USA. (c) Openness to Change values and Self-

Enhancement values will be strongest amongst Indians in the USA compared to Indians in India and nonIndians in the USA.

Differences between the two countries were also evident in Hall's (1983) temporal research. Hall found that the USA emphasizes monochronicity, whereas India emphasizes polychronicity. In contrast to the culture level findings, at the individual level of analysis, Glazer and Palekar (2013) found that individuals in the USA, specifically non-Indians in the USA, preferred to polytask at work more than Indians in the USA and Indians in India did.

Given that Self-Enhancement values positively correlated with polytasking (Conte et al., 1999) and Indians in the USA and Indians in India had less preference for polytasking than nonIndians in the USA (Glazer & Palekar, 2013), it is expected that the relationship between Self-Enhancement values and polytasking may be stronger for nonIndians in the USA, than for Indians in the USA and Indians in India. Furthermore, the direction of the correlations between the three groups are expected to be the same, but the magnitude will be different because human motivation depends on the environment and its capacity for supporting human thriving (Fischer, 2013). Therefore, more economically developed countries encourage their individuals to grow and express themselves (Fischer, 2013). Extrapolating from these culture level findings and as depicted in Figure 3, I hypothesize that:

H₃: The positive correlations between polytasking and (a) Self-Enhancement values (achievement, power, and hedonism values) and (b) Openness to Change values (stimulation, self-direction, and hedonism values) will be stronger for nonIndians in the USA, than Indians in the USA, and least (but

still positive) for Indians in India. Furthermore, the negative relationship between polytasking and (c) Self-Transcendence values (universalism and benevolence values) and (d) Conservation values (security, conformity, and tradition values) will be stronger for Indians in India, followed by Indians in USA, and least (but still negative) for nonIndians in the USA.

Theoretical and Practical Relevance of the Study

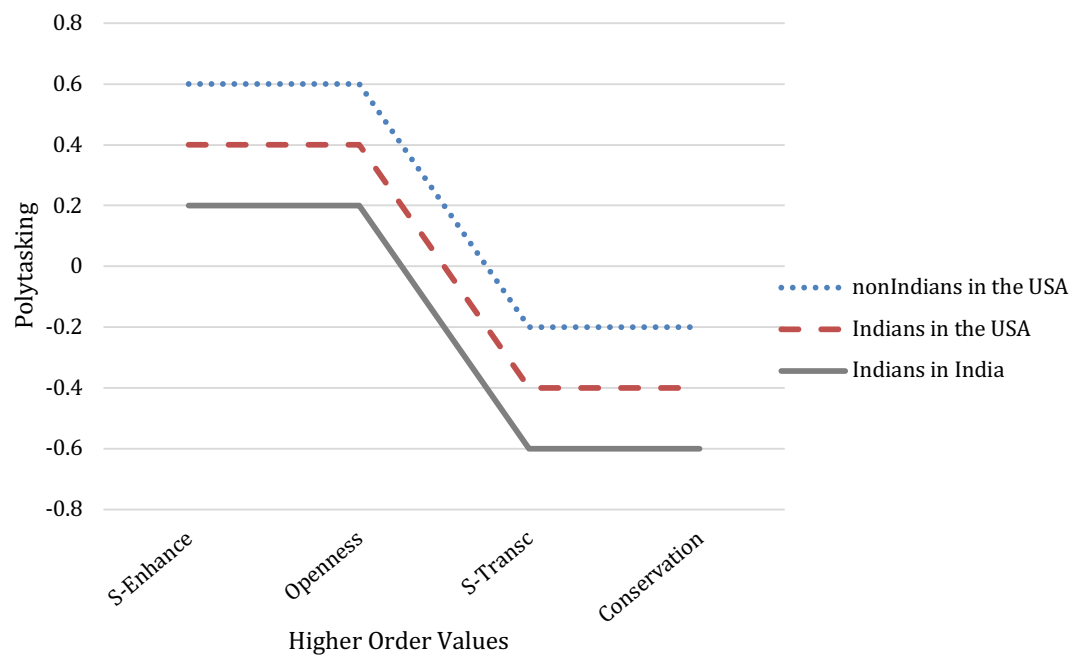
Despite research findings linking personality and temporal orientation at the individual level of analysis (Conte & Jacobs, 2003; Conte & Gintoft, 2005; Kantrowitz et al., 2012), there is little that links task orientation to basic human values. Linking the two has theoretical and practical implications. Theoretically, both values and task orientation represent cultural cognitions, that is, how people think about their experiences, make decisions about behaviors, and interpret events. Values guide behaviors (Schwartz, 1992b), whereas task orientation explains people's preference for performing tasks (at the same time or sequentially). Therefore, this study also intends to demonstrate that the relationship between values and task orientation at the individual level of analysis is culturally dependent and any programs to help people adjust to their host culture would require tailoring to both the person and the person's cultural background.

Practically, understanding the linkage between values and task orientation can provide further information on how to best help international workers adjust to their experiences abroad by tailoring motivation and goal strategies that align with their values and task orientation preference. If nothing else, this effect would allow for more intelligent and realistic job previews and culturally sensitive "new country" orientation

guidance for immigrants. It could also be used to raise awareness to supervisors, managers, and recruiters that there are cultural differences in chronologic perceptions.

Figure 3

*Diagram of the Theoretical Relationship Between Higher Order Values and Polytasking
Per the Sinusoidal Curve*



In short, this study seeks to understand if there is a relationship between temporal task orientation (i.e., polytasking) and human (individual level) values. And, if there is, what do the relationships look like? Are those relationships invariant across cultures? The next section presents the methodology employed, including study sample characteristics, measures, procedures, and data analytic approach. The methods section is followed by results specific to the hypotheses and the general research question. Finally, the discussion section will present an interpretation of the findings in relation to the theoretical foundations, including culture fit, as well as directions for future research.

METHODS

Participants

The current study combines archival data (collected in 2011) and newly collected data (collected in 2018 and 2019). In order to decrease variation that could be caused by differences in industry culture, participants were selected from a single business sector—high-tech, which is also the sector that employs large numbers of Indians in both India and USA (Gadgets Now, 2015; Tech in Asia, 2016). Of the archival data, 781 surveys were distributed to individuals in 63 high-tech organizations throughout the USA and India. Of these, 440 surveys were returned, yielding a return rate of 56%. However, after performing certain data cleaning procedures (mentioned in a separate section later in this thesis), 225 usable surveys were retained from the archival data.

In order to increase the sample sizes in both the Indians in USA and nonIndians in the USA groups, additional surveys were administered in 2018 and in 2019. For this data collection effort 4,030 people accessed the survey, but 3,660 did not pass the qualification questions (i.e., Do you currently live in the USA?). Additionally, of the 370 individuals who did pass the qualification questions, 45 people did not pass the attention check questions (i.e., The sum of 2 plus 2 is?). Lastly, 278 people cheated (i.e., took the survey more than once followed by a change in their answers so that they would qualify; This was checked manually). Individuals who cheated are also included in the 3,660 count of people who did not pass the qualification questions (because it was that result that motivated them to try and take the survey again changing their answers). This resulted in obtaining 217 surveys. However, after performing specific data cleaning procedures (detailed below in my procedure section), a total of 176 surveys were retained

from the 2018 and 2019 data collection effort.

Comparing Archival and New Datasets

To ensure that the archival data can be combined with the new data, I compared the archival sample and the new sample (see Tables 2 and 3) on demographics, polytasking, and higher order values (controlling for mean rating). All four samples combined consisted of 238 full-time employees working in high-tech companies including Indians in USA_{archival} ($n = 42$), Indians in USA_{new} ($n = 69$), nonIndians in USA_{archival} ($n = 20$), and nonIndians in USA_{new} ($n = 107$). There was only one significant mean difference between the archival data and the new data I collected. Polytasking was slightly lower amongst the archival group of Indians in USA ($M = 2.65$, $SE = 0.10$) compared to the new group of Indians in USA ($M = 3.04$, $SE = 0.08$). However, it is noteworthy that the correlations between polytasking and values were in the same direction and yielded the same nonsignificant results.

Final Combined Sample Demographics

The final combined sample of participants consisted of 401 full-time employees working in high-tech companies including Indians working in the USA ($n = 111$), Indians working in India ($n = 163$), and nonIndians working in the USA ($n = 127$). The nonIndian sample in the USA consisted of individuals who were a) born in the USA, b) identified with the USA the most, and c) spoke primarily English at home. Detailed demographic information on nonIndians in the USA are presented in Table 4.

The combined datasets included primarily male respondents (76.1%). Ages ranged from 20 to 65 years of age ($M = 33.34$, $SD = 9.34$) and the majority of respondents were married (54.1%). Most of the respondents (50.4%) had their bachelor's

degree and 36.2% had a master's degree. Almost all of the respondents (98%) were full-time working employees.

Table 2

Means (Standard Deviation) and Frequency of Socio-Demographic Information

Comparing Archival Data and New Data

	Indians in USA		nonIndians in USA	
Variables	Archival	New	Archival	New
Sample size for analyses	42	69	20	107
Sex:				
Male	66.7%	71.0%	70.0%	72.0%
Female	33.3%	29.0%	30.0%	28.0%
Average age	30.2 (4.59)	28.2 (6.17)	37.7 (6.91)	33.1 (8.52)
Education level:				
High school	00.0%	00.0%	5.30%	19.6%
Bachelor's	14.3%	72.5%	52.6%	56.1%
Master's	71.4%	27.5%	36.8%	22.4%
Doctorate	2.40%	00.0%	00.0%	00.0%
Other	00.0%	00.0%	5.30%	1.90%
Marital status:				
Single	31.0%	55.1%	5.00%	51.4%
Married/Re-married	69.0%	40.6%	95.0%	39.3%
Living with partner	00.0%	4.30%	00.0%	4.70%
Divorced/ Separated	00.0%	00.0%	00.0%	4.70%
Widowed/ Widower	00.0%	00.0%	00.0%	00.0%
Employment status:				
Full-Time	100%	95.7%	100.0%	97.2%
Part-Time	00.0%	4.30%	00.0%	2.80%

Table 3

Means, Standard Errors, Reliabilities, and Intercorrelations a Between Polytasking and Values: Comparing Archival and New Culturally Matched Samples

Variables	<i>M</i>	<i>SE</i>	1	2	3	4	5
Archival Indians in USA (<i>n</i> = 42)							
1. Polytasking	2.65 ^b	0.10	.86				
2. Self-Enhancement	4.10	0.11	.17	.82			
3. Openness to Change	4.33	0.10	.18	.46**	.78		
4. Self-Transcendence	4.61	0.09	.08	-.78**	-.45**	.81	
5. Conservation	4.18	0.08	-.25	-.41**	-.74**	.17	.85
New Indians in USA (<i>n</i> = 69)							
1. Polytasking	3.04 ^b	0.08	.48				
2. Self-Enhancement	4.39	0.09	.03	.86			
3. Openness to Change	4.40	0.08	.05	.54**	.85		
4. Self-Transcendence	4.58	0.07	.06	-.47**	-.33**	.90	
5. Conservation	4.37 ^c	0.06	-.14	-.44**	-.62**	-.13	.90
Archival nonIndians in USA (<i>n</i> = 20)							
1. Polytasking	3.09	0.14	.83				
2. Self-Enhancement	3.93	0.15	.21	.82			
3. Openness to Change	4.32	0.14	-.32	-.09	.82		
4. Self-Transcendence	4.71	0.06	-.07	-.71**	.06	.79	
5. Conservation	4.04	0.11	.13	.08	-.24	-.42	.79
New nonIndians in USA (<i>n</i> = 107)							
1. Polytasking	2.84	0.06	.82				
2. Self-Enhancement	4.17	0.07	.16	.85			
3. Openness to Change	4.55	0.06	.12	.49**	.77		
4. Self-Transcendence	4.69	0.06	-.30**	-.70**	-.42**	.86	
5. Conservation	4.11 ^c	0.05	.12	-.08	-.49**	-.22*	.87

Note. ^aGrand mean rating on values is statistically controlled to account for response tendencies. ^bShared superscripts indicate significant mean differences at $p \leq .05$. ^cShared superscripts indicate significant mean differences at $p \leq .01$.

** $p \leq .01$ (2-tailed); * $p \leq .05$ (2-tailed).

Within the groups (Indians in India, Indians in USA, and nonIndians in the USA), Indians in India ranged in age from 20 to 59 years old ($M = 36.00$, $SD = 10.86$), Indians in USA ranged in age from 21 to 55 years old ($M = 28.98$, $SD = 5.68$), and nonIndians in the USA ranged in age from 22 to 65 years old ($M = 33.75$, $SD = 8.44$). Indians in India were predominantly men (84.0%), followed by nonIndians in the USA (71.7%), and Indians in USA (69.4%). Half of the sample were married (60.7% of Indians in India, 51.4% of Indians in USA, and 48.0% of nonIndians in the USA). A majority of respondents were full-time employees (97.6% of nonIndians in the USA, 97.3% of Indians in USA, and 95.7% of Indians in India) and had a bachelor's degree (55.1% of nonIndians in the USA, 50.5% of Indians in USA, and 46.6% of Indians in India). Indians in USA were the most highly educated; 44.1% had master's degrees, followed by Indians in India (39.9%), and nonIndians in the USA (24.4%). Indians in USA have been residing in USA for an average of 5.57 years ($SD = 4.00$) and have been working in the USA for 4.58 years ($SD = 3.22$). Of the 127 nonIndians in the USA, all but four were born in the USA. Of the four nonIndians not born in the USA, the number of years residing in the USA ranged from 17.67 to 46 years, the minimum number of years working in the USA ranged from 9 to 30 years, and all participants, when asked with which country they most identify, indicated that they identified most with the USA. Further demographic information can be found in Table 4.

Measures

The survey administered in India was the same as the survey administered in the USA. Although India has two official languages, Hindi and English, it was decided to use the English language version across all samples. The survey (see Appendices A and B)

was divided into three sections. Socio-demographic and job-related information were represented in Section I and consisted of 23 items. Section II contains the portion of the survey dedicated to personal time management preferences, followed by Section III measuring values.

Table 4

Socio-Demographic Information on High-Tech Workers in Organizations Pan-Culturally and in Three Cultures

Variables	All Cultures	Indians in India	Indians in USA	nonIndians in the USA
Sample size for analyses	401	163	111	127
Sex:				
Male	76.1%	84.0%	69.4%	71.7%
Female	23.7%	15.3%	30.6%	28.3%
Average age (SD)	33.3 (9.34)	36.0 (10.86)	29.0 (5.68)	33.8 (8.44)
Education level:				
High school degree	5.70%	00.6%	00.0%	17.3%
Bachelor's degree	50.4%	46.6%	50.5%	55.1%
Master's degree	36.2%	39.9%	44.1%	24.4%
Doctorate	00.5%	00.6%	00.9%	00.0%
Other	2.20%	3.70%	00.0%	2.40%
Marital status:				
Single	40.9%	35.0%	45.9%	44.1%
Married/Re-married	54.1%	60.7%	51.4%	48.0%
Living with partner	2.50%	1.20%	2.70%	3.90%
Divorced/Separated	1.20%	00.0%	00.0%	3.9%
Widowed/Widower	00.2%	00.6%	00.0%	00.0%
Employment status:				
Full-Time	96.8%	95.7%	97.3%	97.6%
Part-Time	2.00%	1.20%	2.70%	2.40%

Polytasking Scale

The Bluedorn et al. (1999) 10-item Inventory of Polychronic Values (IPV) scale was used to measure polytasking in the current study. The IPV scale consists of 10 items pertaining to respondents' personal time management preferences. Respondents were

asked to rate each item on the extent to which they felt the item was descriptive of them on a 5-point Likert-type scale ranging from 1, “*very uncharacteristic/not true*” to 5, “*very characteristic*.” One example of an IPV scale item was, “I like to juggle several activities at the same time.” Items 2, 4, 5, 7, and 9 were reverse scored, with higher scores indicating a preference to polytask. A principal components factor analysis (PCFA) was performed to see if reliability increased when omitting a single personal time management preference item. The PCFA revealed evidence to suggest that a 9-item, rather than a 10-item, scale yielded a higher reliability score across the three samples. Specifically, item 9 was deleted from the scale in the current study. After removing item 9, “I seldom like to work on more than a single task or assignment at the same time,” from the Personal Time Management variable, internal consistency Cronbach’s alpha was .71 amongst Indians in the USA, .80 amongst Indians in India, and .82 amongst nonIndians in the USA (see Table 5).

Human Values Scale

The Schwartz Values Scale (SVS) (1992a) was used to measure human values in the current study. The SVS consists of 57 items comprised of 10 human values in which are organized into four higher order dimensions, Self-Enhancement values versus Self-Transcendence values and Openness to Change values versus Conservation values. Respondents were asked to rate each value on the extent to which they felt that that value was “a *guiding* principle in my life” on a 9-point scale ranging from 0, “*not important*,” to 7, “*of supreme importance*,” with an option of -1, “*I am opposed to it*.”

Procedure

The current study used archival data; however, after performing specific data

cleaning procedures it was determined that the sample sizes for the groups, Indians in USA and nonIndians in the USA, were small. Therefore, additional data were collected using the measures of interest. Specifically, an online version of the survey, containing the IPV, SVS, and demographics, was created using the Qualtrics survey platform (<https://www.qualtrics.com>). Once the survey was created, it was then posted onto Amazon Mechanical Turk (<https://www.mturk.com>). Amazon Mechanical Turk (MTurk), owned by Amazon, is a crowdsourcing website where researchers can outsource their surveys to a distributed workforce who then participate in the survey virtually. Upon accessing the survey, participants were first presented with an informed consent form. Participants were also fully aware before taking the survey that if they passed certain qualification questions, passed all of the attention checks built into the online survey, and fully completed the survey, they would be given monetary compensation for their opinion and time (i.e., USD\$2). All participant responses were anonymous. See Appendix C for the IRB exemption letter.

Data Cleaning

Before running analyses, respondents were filtered out based on several criteria. For Bluedorn et al.'s (1999) IPV scale, respondents who did not answer three or more items on the survey were omitted from analyses and interpreted either as the participant having not enough interest to complete the survey, perhaps by error, or some other personal reason. For the SVS, participants were excluded from analyses if they used the rating 7 (of supreme importance) more than 21 times, if the participant used any other rating more than 35 times (e.g., if the anchor point "3" is selected 35 times or more), if they left 15 or more items blank, and in calculating dimension scores if greater than 30%

of the items were missing for a scale, then the participant was dropped, per Littrell (2008) and Schwartz's (2009) guidance. Such restrictions were made in order to have full representation and unbiased results.

Data Analysis

Data were assessed for influential univariate outliers using Mahalanobis distance tests (Tabachnick et al., 2007). Only two cases were found where removal of one suspicious outlier changed the observed correlation. For example, with the removal of one outlier, the pan-cultural correlation between Openness to Change values and Polytasking changed from being originally non-significant ($r = 0.09$, $p = 0.08$; as shown in Table 5) to a significant correlation ($r = .11$, $p = .04$; not shown in any Tables). The second case had the opposite effect, where removal of one outlier changed the observed correlation for the pan-cultural correlation between Self-Transcendence and Conservation values, which originally went from being a significant correlation ($r = -.10$, $p = .05$; as shown in Table 5) to a non-significant correlation ($r = -.06$, $p = .21$; not shown in any Tables). Each outlier in the first and second case warranted being removed from the pan-cultural analysis. The outliers were only removed for the pan-cultural analysis and not for the analysis examining correlations within each culture group separately. A curvilinear test was also run and showed that there is no curvilinear relationship amongst the independent and dependent variables.

Individuals differ in how they distribute their importance ratings across the SVS rating scale and groups may also show such scale use differences (Schwartz, 1992b). In order to control for individual differences in use of the SVS response scale, such as socially desirable responding, each individual's mean rating of all value items was used

as a covariate, per Littrell (2008) and Schwartz (2009). Therefore, I controlled for grand mean rating (labeled as 'mrat') on all values for both hypotheses. For H_1 , I also controlled for culture. To test H_1 , I performed a pan-cultural partial correlation analysis ($n = 401$). A pan-cultural analysis is where data from all countries or cultural units are aggregated and analyzed together, while controlling for possible statistical effects of culture. A pan-cultural analysis enables one to test whether psychological processes are universal (Leung, 1989). Specifically, if the correlations from the non-pan-cultural analysis (H_3) tend to be in a similar pattern to the pan-cultural (H_1) correlations, then the results can be interpreted as having generalizability. To test H_2 , mean scores and mean rankings were examined.

Variables that were controlled for include the grand mean rating on all values (mrat) and culture (dummy-coded). For culture, I created dummy codes ($k-1$) where k stands for number of culture groups. Given three cultures, two dummy variables were created, where the referent group was nonIndians in the USA. To compare cultures and test for H_3 , correlations were compared to determine if they differed from each other significantly. Specifically, calculations using Cohen and Cohen's (1983, p. 55) chi square formula and Fisher's r -to- z transformation were used. Analyses of Covariance (ANCOVA), controlling for mean rating, were performed to test for significant mean differences between culture groups on all variables (i.e., Polytasking, Self-Enhancement, Openness to Change, Self-Transcendence, Conservation values).

RESULTS

Means, standard deviations, Cronbach's alpha reliabilities, and intercorrelations of the main study variables are presented in Table 5. ANCOVAs revealed there were no

significant differences in mean scores for polytasking. Covariate adjusted means and standard deviations were used in calculating Cohen's d effect size.

Hypothesis Testing

Partial correlational analyses were employed to test hypotheses 1a-d (see Table 5). Analyses reveal support for H_{1a}. Self-Enhancement values positively correlate with polytasking pan-culturally ($r = .17, p \leq .01$), as well as within two cultures: Indians in India ($r = .17, p \leq .05$) and Indians in USA ($r = .19, p \leq .05$). The correlation was not significant, though in the expected positive direction, amongst nonIndians in the USA. H_{1b} was supported, but only after removing an outlier. Openness to Change values positively correlated with polytasking pan-culturally ($r = .11, p = .04$; not shown in any Tables). Though the correlations were positive, in the expected direction, Openness to Change values did not significantly correlate with polytasking for any of the three groups. H_{1c}, that Self-Transcendence values will correlate negatively with polytasking, was supported pan-culturally ($r = -.15, p \leq .01$) and amongst nonIndians in USA ($r = -.28, p \leq .01$), but not amongst Indians in India (though in the expected direction) and Indians in the USA. Finally, H_{1d} was not supported. The direction of the relationship between Conservation values and polytasking were negative within each cultural group (as expected), except amongst nonIndians in USA, but none were significant.

Next, I tested H₂, to test if nonIndians in the USA endorse Self-Enhancement and Openness to Change values more than Indians in the USA or India do and found partial support. The mean for Self-Enhancement values was significantly lower for Indians in India ($M = 4.23, SE = 0.05$) than Indians in USA ($M = 4.44, SE = 0.07, p \leq .05, d = -0.21$). Indians in India also had a lower mean score on Openness to Change values than

Table 5

Means, Standard Errors, Reliabilities, and Partial Correlations Between Study Variables

(controlling for grand mean rating on values) for All Cultures and Each Cultural Group

Variables	M^{\dagger}	SE	1	2	3	4	5
All Cultures, also controlling for culture ($n = 401$)							
1. Polytasking	2.83	0.03	--				
2. Self-Enhancement	4.31	0.03	.17**	--			
3. Openness to Change	4.54	0.03	.09	.37**	--		
4. Self-Transcendence	4.78	0.03	-.15**	-.56**	-.39**	--	
5. Conservation	4.41	0.02	-.01	-.16**	-.50**	-.10*	--
F			3.57	3.73	3.11	0.74	13.03
Significance			0.03	0.03	0.05	0.48	0.00
η^2			0.02	0.02	0.02	0.00	0.06
Indians in India ($n = 163$)							
1. Polytasking	2.71	0.05	.80^a				
2. Self-Enhancement	4.23 ^{befgh}	0.05	.17*	.77			
3. Openness to Change	4.47 ^{cfig}	0.05	.09	.26**	.78		
4. Self-Transcendence	4.77 ^{igk}	0.05	-.10	-.44**	-.40**	.75	
5. Conservation	4.53 ^{djhk}	0.04	-.09	-.22**	-.46**	-.01	.86
F			0.11	194.94	267.24	243.85	743.61
Significance			0.74	0.00	0.00	0.00	0.00
η^2			0.00	0.55	0.62	0.60	0.82
Indians in USA ($n = 111$)							
1. Polytasking	2.90	0.06	.71^a				
2. Self-Enhancement	4.44 ^{bl}	0.07	.19*	.82			
3. Openness to Change	4.49 ^m	0.06	.14	.49**	.82		
4. Self-Transcendence	4.73 ^{lmn}	0.06	.05	-.61**	-.34**	.87	
5. Conservation	4.46 ^{en}	0.05	-.11	-.34**	-.66**	-.01	.87
F			0.56	262.49	261.87	605.63	490.23
Significance			0.46	0.00	0.00	0.00	0.00
η^2			0.01	0.71	0.71	0.85	0.82

Variables	M^{\dagger}	SE	1	2	3	4	5
non-Indians in USA ($n = 127$)							
1. Polytasking	2.88	0.07	.82^a				
2. Self-Enhancement	4.24 ^{op}	0.06	.15	.85			
3. Openness to Change	4.65 ^{coqr}	0.06	.08	.46 ^{**}	.78		
4. Self-Transcendence	4.83 ^{qps}	0.06	-.28 ^{**}	-.70 ^{**}	-.39 ^{**}	.86	
5. Conservation	4.24 ^{ders}	0.04	.10	-.07	-.46 ^{**}	-.23 ^{**}	.86
F			2.84	230.73	175.51	198.86	522.13
Significance			0.10	0.00	0.00	0.00	0.00
η^2			0.02	0.65	0.58	0.61	0.81

Note. ^aInternal reliability coefficients are listed on the diagonals. ^{bc}Shared superscripts indicate significant mean differences at $p \leq .05$. ^{de}Shared superscripts indicate significant mean differences at $p < .01$. [†]Shared superscripts with letters “f” through “s” indicate significant mean differences within culture groups.

^{**} $p \leq .01$ (2-tailed); ^{*} $p \leq .05$ (2-tailed).

nonIndians in USA ($M = 4.47$, $SE = 0.05$ compared to $M = 4.65$, $SE = 0.06$, respectively, $p \leq .05$, $d = -0.17$). There were no significant mean differences between the three cultural groups on Self-Transcendence values. Lastly, the mean for Conservation values was significantly higher for Indians in India ($M = 4.53$, $SE = 0.04$) than nonIndians in USA ($M = 4.24$, $SE = 0.04$, $p < .01$, $d = 0.27$) and Indians in USA ($M = 4.46$, $SE = 0.05$) had a significantly higher mean score than nonIndians in USA ($M = 4.24$, $SE = 0.04$, $p < .01$, $d = 0.19$). No differences were found between both cultural groups in the USA on any of the higher-order values. Figure 4 shows a bar chart of these results.

Nonparametric tests were also employed to determine the extent to which values were endorsed within cultural groups. Specifically, a Wilcoxon Signed-Ranks Test was performed. The results are presented in Table 6. Among Indians in USA, the mean ranks of Self-Enhancement values did not differ significantly from Openness to Change values (mean rank = 53.78; mean rank = 57.22, respectively). However, the mean ranks of the

two values were significantly different amongst Indians in India (mean rank = 70.98; mean = 87.86, respectively) and nonIndians in USA (mean rank = 46.58; mean rank = 69.27, respectively). For both latter samples, Openness to Change values were ranked as a greater priority than Self-Enhancement values.

Comparing Self-Transcendence values and Openness to Change values, Wilcoxon signed rank tests reveal that the former is given greater priority to the latter across all three samples. Amongst Indians in USA, the mean ranks were 58.66 and 50.46, respectively ($p < .01$). Mean ranks were 85.98 and 73.50, respectively ($p < .01$) among Indians in India. Finally, among nonIndians in USA the mean ranks were 65.87 and 61.31, respectively ($p < .05$).

Among Indians in USA, the mean ranks of Conservation values did not differ significantly from Openness to Change values (mean rank = 53.00; mean rank = 60.24, respectively). However, the mean ranks of the two values were significantly different amongst Indians in India (mean rank = 81.80; mean = 81.02, respectively) and nonIndians in USA (mean rank = 48.10; mean rank = 72.43, respectively). For the Indians in India sample, Conservation values were ranked as a greater priority than Openness to Change values. For the nonIndians in USA sample, Openness to Change values were ranked as a greater priority than Conservation values.

Comparing Self-Transcendence values and Self-Enhancement values, Wilcoxon signed rank tests revealed that the former was given greater priority to the latter across all three samples. Amongst Indians in USA, the mean ranks were 60.51 and 48.3, respectively ($p < .01$). Mean ranks were 91.26 and 59.15 among Indians in India, respectively ($p < .01$). Finally, among nonIndians in USA, the mean ranks were 67.80

Figure 4

Bar Chart of Mean Differences and Standard Errors on Polytasking and Higher Order Values After

Controlling for Mean Rating, Using Confidence Intervals 95%

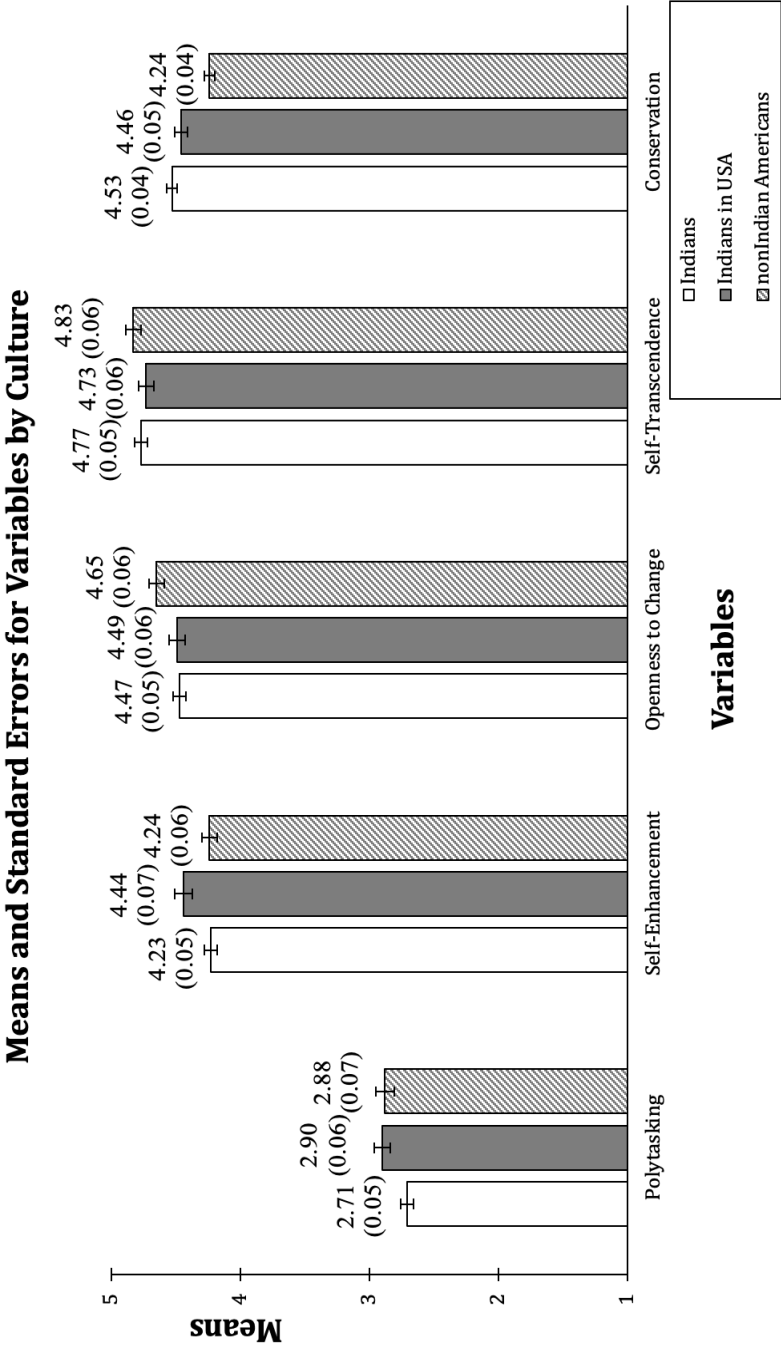


Table 6

Nonparametric Wilcoxon Signed Ranks Test of Higher Order Values Amongst Three Study Populations

		Negative Ranks				Positive Ranks				Wilcoxon Signed Ranks Test	
	Comparison	N	Mean Rank	Sum of Ranks	N	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)		
1	selfenh < open	55	57.22	3147.00	55	53.78	2958.00	-0.28 ^a	0.778		
2	selftran > open	36	50.46	1816.50	75	58.66	4399.50	-3.80 ^b	0.000		
3	conserv < open	46	60.24	2771.00	65	53.00	3445.00	-0.99 ^b	0.321		
4	selftran > selfenh	41	48.30	1980.50	70	60.51	4235.50	-3.32 ^b	0.001		
5	conserv > selfenh	52	54.88	2854.00	59	56.98	3362.00	-0.75 ^b	0.455		
6	conserv < selftran	68	64.13	4360.50	43	43.15	1855.50	-3.69 ^a	0.000		
Indians in India											
1	selfenh < open	101	87.86	8873.50	61	70.98	4329.50	-3.80 ^a	0.000		
2	selftran > open	52	73.50	3822.00	111	85.98	9544.00	-4.74 ^b	0.000		
3	conserv > open	62	81.02	5023.50	100	81.80	8179.50	-2.64 ^b	0.008		
4	selftran > selfenh	47	59.15	2780.00	116	91.26	10586.00	-6.47 ^b	0.000		
5	conserv > selfenh	54	68.59	3704.00	108	87.95	9499.00	-4.85 ^b	0.000		
6	conserv < selftran	98	89.31	8752.00	65	70.98	4614.00	-3.43 ^a	0.001		
nonIndians in USA											
1	selfenh < open	87	69.27	6026.50	37	46.58	1723.50	-5.37 ^a	0.000		
2	selftran > open	52	61.31	3188.00	75	65.87	4940.00	-2.11 ^b	0.035		
3	conserv < open	83	72.43	6011.50	44	48.10	2116.50	-4.69 ^a	0.000		
4	selftran > selfenh	38	55.09	2093.50	89	67.80	6034.50	-4.74 ^b	0.000		
5	conserv < selfenh	63	64.31	4051.50	64	63.70	4076.50	-0.03 ^b	0.076		
6	conserv < selftran	96	70.44	6762.00	31	44.06	1366.00	-6.49 ^a	0.000		

Note. selfenh = Self-Enhancement values; open = Openness to Change values; selftran = Self-Transcendence values; conserv = Conservation values. ^aBased on positive ranks. ^bBased on negative ranks.

and 55.09, respectively ($p < .01$).

Among Indians in USA, the mean ranks of Conservation values did not differ significantly from Self-Enhancement values (mean rank = 56.98; mean rank = 54.88, respectively). However, the mean ranks of the two values were significantly different amongst Indians in India (mean rank = 87.95; mean = 68.59, respectively). For the Indians in India sample, Conservation values were ranked as a greater priority than Self-Enhancement values. Among nonIndians in USA, the mean ranks of the two values did not differ significantly (mean rank = 63.70; mean rank = 64.31, respectively).

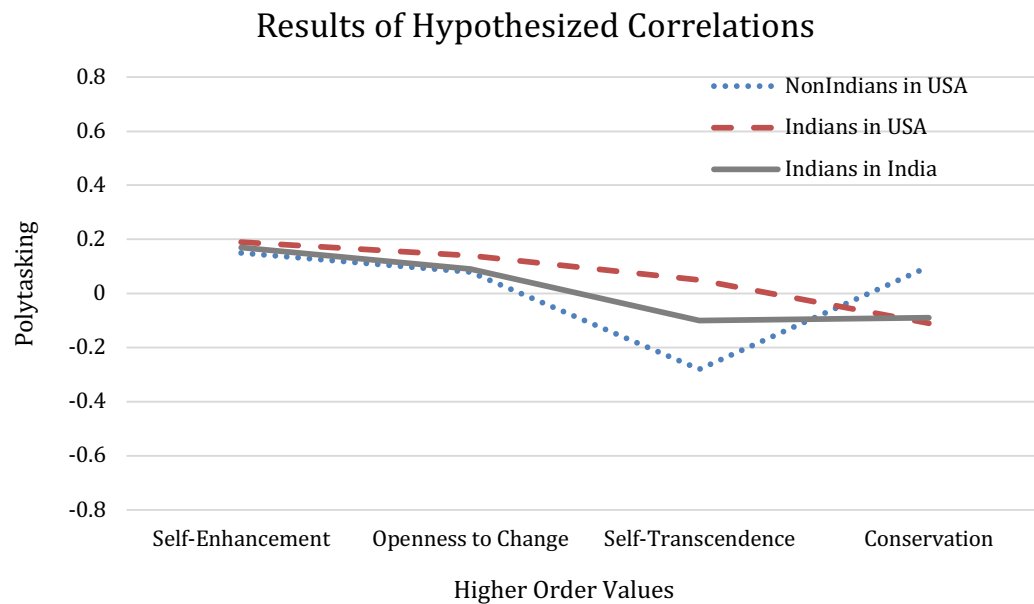
Comparing Conservation values and Self-Transcendence values, Wilcoxon signed rank tests revealed that the latter was given greater priority to the latter across all three samples. Among Indians in USA, the mean ranks were 43.15 and 64.13, respectively ($p < .01$). Mean ranks were 70.98; mean = 89.31 among Indians in India, respectively ($p < .01$). Finally, among nonIndians in USA, the mean ranks were 44.06 and 70.44, respectively ($p < .01$).

To test for H_{3a-d} , partial correlations were compared to determine if they differed from each other significantly. Specifically, calculations employed Fisher's r -to- z transformation (Cohen & Cohen, 1983; see also Preacher, 2002, available from <http://quantpsy.org/corrtest/corrtest.htm>). A chi square omnibus test of homogeneity was first performed, using Cohen and Cohen's (1983, p. 55) formula. Chi square tests revealed that the correlations between each value type and polytasking were homogeneous across the cultural groups, meaning there were no significant differences between the groups. Although results were homogeneous, pair-wise comparisons showed that the negative correlation between Self-Transcendence values and polytasking was

stronger, at least nominally, for nonIndians in the USA than Indians in USA (though the reverse order of magnitude was expected, with Indians in India expected to be strongest). According to the results of these calculations, only the correlation between Self-Transcendence values and polytasking (H_{3c}) for Indians in the USA and nonIndians in the USA differed significantly ($z = 2.57, p = .01$). Thus, H_{3c} was not supported. A diagram of the hypothesized correlational results is shown in Figure 5.

Figure 5

Diagram of the Hypothesized Correlations Results



Post Hoc Analyses

Post hoc analyses were performed between polytasking and each of the 10 value types (e.g., power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security values) within each of the three culture groups. Means, standard deviations, Cronbach's alpha reliabilities, and partial

correlations are presented in Table 7. ANCOVAs were run to determine significant mean differences between values, while controlling for the grand mean ratings of all values.

The covariate adjusted means and standard deviations were used in calculating Cohen's d effect size.

Mean Differences in Value Types

Idiocentric value types, Self-Enhancement and Openness to Change higher-order values, were generally rated lower by Indians in India than by Indians and nonIndians in the USA. Specifically, going around the circular structure, the mean for power value type was significantly greater for Indians in USA ($M = 4.07$, $SE = 0.12$) than Indians in India ($M = 3.66$, $SE = 0.10$, $p < .05$, $d = 0.29$), as well as nonIndians in USA ($M = 3.46$, $SE = 0.11$, $p < .01$, $d = 0.43$). There were no significant mean differences for achievement value type. However, the mean for hedonism value type was significantly lower for Indians in India ($M = 4.20$, $SE = 0.08$) compared to Indians in USA ($M = 4.53$, $SE = 0.10$, $p < .05$, $d = -0.27$) and nonIndians in USA ($M = 4.59$, $SD = 0.09$, $p < .01$, $d = -0.28$). There were also no significant mean differences for stimulation value type, but the mean for self-direction value type was significantly greater for nonIndians in USA ($M = 5.21$, $SE = 0.10$) than for Indians in USA ($M = 4.75$, $SE = 0.11$, $p < .01$, $d = 0.46$). There were no differences between Indians in India and the other two groups on self-direction value type.

Amongst the five value types that comprise of the two allocentric (or social-focused) higher-order values, Self-Transcendence and Conservation values, the mean for universalism value type was significantly lower for Indians in India ($M = 4.55$, $SE = 0.05$) than nonIndians in USA ($M = 4.78$, $SE = 0.06$, $p < .05$, $d = -0.21$), but there were

Table 7

Post Hoc Analysis: 10 Value Types' Means, Standard Deviations, Partial Correlations with Polytasking, and Cronbach Alpha Reliability

Values	<i>M</i>	<i>SE</i>	<i>r</i>	Cronbach's α
Indians in India controlling for grand mean rating on values (<i>n</i> = 163)				
1. Power	3.66 ^a	0.10	.15**	.58
2. Achievement	4.84	0.07	.08	.69
3. Hedonism	4.20 ^{cd}	0.08	.08	.53
4. Stimulation	4.27	0.08	.12	.62
5. Self-Direction	4.93	0.09	-.01	.19
6. Universalism	4.55 ^f	0.05	-.17*	.81
7. Benevolence	4.98	0.07	-.02	.37
8. Tradition	4.06	0.07	.04	.67
9. Conformity	4.86 ^{hi}	0.06	-.15*	.73
10. Security	4.66 ^j	0.05	-.06	.66
Indians in USA controlling for grand mean rating on values (<i>n</i> = 111)				
1. Power	4.07 ^{ab}	0.12	.30**	.70
2. Achievement	4.73	0.08	-.02	.69
3. Hedonism	4.53 ^c	0.10	.04	.61
4. Stimulation	4.19	0.10	.24*	.67
5. Self-Direction	4.75 ^e	0.11	-.05	.67
6. Universalism	4.59	0.06	.09	.81
7. Benevolence	4.87	0.09	-.01	.75
8. Tradition	4.13	0.09	.10	.76
9. Conformity	4.64 ^{gh}	0.07	-.21*	.70
10. Security	4.61	0.07	-.18 ^(*)	.74
NonIndians in USA controlling for grand mean rating on values (<i>n</i> = 127)				
1. Power	3.46 ^b	0.11	.25**	.77
2. Achievement	4.67	0.08	.02	.69
3. Hedonism	4.59 ^d	0.09	-.02	.74
4. Stimulation	4.16	0.09	.26*	.69
5. Self-Direction	5.21 ^e	0.10	-.15 ^(*)	.63
6. Universalism	4.78 ^f	0.06	-.21*	.77
7. Benevolence	4.88	0.09	-.23**	.79
8. Tradition	4.05	0.08	.08	.72
9. Conformity	4.20 ^{gi}	0.07	.10	.68
10. Security	4.46 ^j	0.06	.00	.67

Note. ^{acfhj}Shared superscripts indicate significant mean differences at $p < .05$. ^{bdegi}Shared superscripts indicate significant mean differences at $p < .01$.

** $p \leq .01$ (2-tailed); * $p \leq .05$ (2-tailed).

no significant differences from Indians in USA. Furthermore, there were no significant differences for benevolence value type. Of the Conservation values, there were also no significant differences with tradition value type. However, the mean for conformity value type was significantly higher for Indians in India ($M = 4.86$, $SE = 0.06$) compared to Indians in USA ($M = 4.64$, $SE = 0.07$, $p < .05$, $d = 0.19$). The mean for Indians in India was also significantly higher than for nonIndians in USA ($M = 4.20$, $SE = 0.07$, $p < .01$, $d = 0.52$). Indians in USA also had significantly higher means than nonIndians in USA ($p < .01$, $d = 0.34$). The mean for security value type was significantly higher for Indians in India ($M = 4.66$, $SE = 0.05$) than nonIndians in USA ($M = 4.46$, $SE = 0.06$, $p < .05$, $d = 0.18$), but there were no significant differences with Indians in USA.

Differences in Partial Correlations Between Polytasking and Value Types

Of the Self-Enhancement higher-order values, power value type correlated positively with polytasking for Indians in India ($r = .15$, $p \leq .01$), Indians in USA ($r = .30$, $p \leq .01$), and nonIndians in USA ($r = .25$, $p \leq .01$), but achievement and hedonism value types did not significantly correlate with polytasking. Of the Openness to Change higher-order values, there was a significant positive correlation between polytasking and stimulation value type amongst Indians in USA ($r = .24$, $p \leq .05$) and nonIndians in USA ($r = .26$, $p \leq .05$), but not amongst Indians in India. The correlation between self-direction value type and polytasking was marginally significant amongst nonIndians in USA, but in the opposite direction expected ($r = -.15$, $p < .10$).

Of the allocentric (social-focused) values, polytasking and universalism value type had significant negative correlations amongst Indians in India ($r = -.17$, $p \leq .05$) and nonIndians in USA ($r = -.21$, $p \leq .05$), but not amongst Indians in USA. There was a

significant negative correlation with polytasking and benevolence value type amongst nonIndians in USA ($r = -.23, p \leq .01$), but not amongst Indians in India and Indians in USA. Tradition value type did not correlate significantly with polytasking for any of the cultural groups, but polytasking and conformity value type negatively correlated amongst Indians in India ($r = -.15, p \leq .05$) and Indians in USA ($r = -.21, p \leq .05$), though not amongst nonIndians in USA. Finally, the correlation between security value type and polytasking was marginally significant amongst Indians in USA ($r = -.18, p < .10$).

DISCUSSION

There is clear evidence that how people view time (Glazer & Palekar, 2013; Leonard, 2008; Levine et al., 1980), like individual values (Schwartz, 1992b) differs across cultures. However, individual level values, such as Schwartz's (1994a) higher order human values, have never been evaluated in relation to polychronicity at the individual level (i.e., polytasking). The premise of this study is that values serve as motivators for how people would choose to behave (Schwartz, 2010). Polytasking is a behavioral preference for engaging in more than one task at a time. It was expected, therefore, that idiocentric-related (person-focused) values, specifically Self-Enhancement and Openness to Change values, that promote getting ahead, achievement, power, and doing what pleases oneself, would correlate positively with polytasking. In contrast, allocentric-related (social-focused) values, specifically Self-Transcendence and Conservation values, would correlate negatively with polytasking. Moreover, the direction of the relationships were expected to be the same across cultures (H_1), but because of cultural differences in mean rankings and ratings of values (H_2), the magnitude of the relationships between the focal variables were expected to differ (H_3).

To test the aforementioned assertions, I compared results of the variables' relationships with three samples originating from two discrete temporal orientations. Examining the focal variable relationships in contexts that represent monochronic and polychronic cultures, provides an opportunity to determine if the correlations are invariant across cultures or if culture influences the correlations at the individual level of analysis. The countries from which samples were drawn represent a polychronic (India) culture and monochronic culture (USA).

Polychronic countries, such as India (or those in Latin America, the Middle East, and around the Mediterranean Sea), differ from monochronic countries, such as USA (or Germany and Scandinavian countries), in terms of overall GDP, standard of living, and wealth, all of which might be reinforcing a people's general temporal orientation tendency (Bluedorn & Denhardt, 1988; Hall, 1983; Kaufman et al., 1991). For example, places with stronger economies and higher GDP have a faster pace of life (but also higher deaths from coronary heart disease); individualistic cultures were faster than collectivistic cultures (Levine & Norenzayan, 1999). People in individualistic cultures strive to make every minute count, and consequently provide individuals with material comforts and a higher standard of living and quality of life (Levine & Norenzayan, 1999).

Glazer and Palekar (2013) found variations of polytasking between cultures. Specifically, non-Asian Indians in the USA preferred to polytask at work more than Asian Indians in the USA and Asian Indians in India did. Therefore, I expected this relationship to be the same in my study. However, similar to Leonard (2008)'s results, but unlike Glazer and Palekar's, the present study does not present significant differences in polytasking. It is possible that the professional culture of high-tech workers overrides

national cultural differences. Still, the measure and population groupings were the same as in Glazer and Palekar, suggesting that more research is needed to determine the role of culture group, professional group, and time (i.e., timing of data collection) on the results.

Nonetheless, within country, there were some significant differences in mean scores on higher order values. In each of the cultural groups, Self-Transcendence values were endorsed more than any other higher-order values, both mean ratings and mean rankings. Schwartz and Bardi (2001), also examining value priorities pan-culturally (63 nations), found that people rated Self-Transcendence values as most important. In the current study, a comparison of *mean ratings* of value types revealed that nonIndians in the USA *rated* the person-focused, Openness to Change values more than Indians in the USA. However, nonIndians in the USA *ranked* Self-Enhancement values significantly higher than Openness to Change values.

Amongst Indians in the USA, after Self-Transcendence values, the other three higher-order values were not *ranked* significantly higher or lower. One reason explaining why Indians in USA ranked these values equally might be because immigrants want the freedom to create and choose their own goals (Bhattacharya, 2008), something that Indians perceive the USA does a better job at providing greater opportunities for high-tech workers than India does (Bhattacharya, 2008), but all while still being able to maintain their ability to provide financially for their parents and younger siblings back home (Bhattacharya, 2008). On values ratings, Indians' in the USA mean ratings on values were either mostly centered between the other two groups or equal to them. They only rated power values highest and self-direction values lowest. Indians in USA might have left India to realize a change in their socio-economic status, as reflected in lower

means on Conservation values. Moreover, moving to a new culture benefits from being open to changes in one's environment. Therefore, Indians in USA may be actively pursuing their desired values of achieving and gaining more professional power, doing what they personally desire, and reducing the status quo.

Among Indians in India, Conservation values were prioritized (ranked) after Self-Transcendence values, indicating emphasis is placed on allocentric (or social-focused) values and least on person-focused values. Indians in India also rated Conservation values as more important than did either U.S. sample. They also rated and ranked Openness to Change values less than either cultural group in the USA. The Indian culture reinforces a tendency toward an external locus of control, which is rooted in the caste system and the notion that people's lots in life don't change (Gopalan & Rivera, 1997). Societies that reinforce Conservation values also tend to have people who are higher on external locus of control (Glazer et al., 2004).

Drawing on literature suggesting that cultural context would play a role in mean rank orders of values across cultures (Sortheix & Schwartz 2017), these findings would appear consistent with cultural characteristics. According to Sortheix and Schwartz (2017) higher-order value pairs can be organized around the notion of social vs. personal focus and the notion of growth and self-expansion vs. self-protection and anxiety-control. Characteristic of immigrants choosing to move to a host country, Indians in the USA appear to endorse growth and self-expansion values evidenced in Openness to Change and Self-Transcendence values. They "welcome novelty and challenge" (Sortheix & Schwartz, 2017, p. 190). The social focused individual is concerned over others' needs and performing to social standards, coupled with a continuous coordination with others,

depicts Indians in India who most endorse values with a social focus (Self-Transcendence and Conservation values). Finally, Openness to Change values were ranked significantly lower than Conservation values amongst Indians in India, but significantly higher amongst nonIndians in the USA which is consistent with people who choose to take on new adventures in life (Schwartz, 2011). Nonetheless, nonIndians in the USA appear to most strongly endorse Self-Transcendence values and its polar opposite, Self-Enhancement values followed by Openness to Change values, the latter two representing person focused values. The latter two also resulted in higher mean ratings than the other two groups (with the exception of power values). As the study was of working individuals in high-tech, cooperation, tolerance, and helping others is a primary need, but after that a focus on achievement and success are important. Indeed, achievement, part of Self-Enhancement values, also strongly relates with growth and self-expansion values (Sortheix & Schwartz, 2017; Schwartz & Sortheix, 2018).

Given differences in mean ratings of values, it was further expected there would be significant differences in the correlations between values and polytasking, though the correlations would be in the same direction. I expected and found that (H_{1a}) Self-Enhancement values positively and (H_{1c}) Self-Transcendence values negatively correlated with polytasking pan-culturally. However, Openness to Change values did not correlate with polytasking pan-culturally nor within each cultural group (per H_{1b}). However, consistent with Schwartz's (1999) sinusoidal curve, Self-Transcendence values negatively correlated with polytasking both pan-culturally and within the nonIndians in USA group. These results provide further evidence of the sinusoidal relationship between values and other variables.

Additionally, because Conte et al. (1999) found that achievement striving positively correlated with polytasking, a *post hoc* analysis was performed to determine if the significant polytasking correlation with Self-Enhancement values was due to achievement value type. However, results revealed that within each cultural group, power value type, but not achievement and hedonism value types, significantly positively correlated with polytasking amongst Indians in India, Indians in USA, and nonIndians in USA. The same *post hoc* analytic approach was taken to evaluate the correlations between polytasking and the other value types. Of the Openness to Change higher order values, stimulation value type positively correlated with polytasking among the two U.S. samples. These results indicate that as idiocentric (person-focused) value types increase, polytasking preferences increase too. According to Dutta-Bergman and Wells (2002), people who endorse idiocentric values strive to get ahead and to do that, particularly in the USA, an individualistic and high autonomy culture (Schwartz, 1994b), people will likely take on many different projects.

Self-Transcendence values, which oppose Self-Enhancement values, is comprised of universalism and benevolence values. Polytasking negatively correlated with universalism values amongst Indians in India and nonIndians in USA and with (b) benevolence values amongst Indians in USA. Conservation values oppose Openness to Change values and is comprised of security, tradition, and conformity values. Polytasking negatively correlated with (a) conformity values amongst Indians in both India and USA, and (b) security values amongst Indians in USA. These findings, as with the higher order values in relation to polytasking, show a sinusoidal relationship between value types polytasking. The consistency of the sinusoidal curve also supports H₂. More specifically,

the positive correlation between Self-Enhancement and Openness to Change values was stronger for nonIndians in the USA compared to Indians in USA and India.

The third hypothesis tested if these correlations differed or were invariant across cultures. Contrary to H₃, the partial correlations between all higher order values, but Self-Transcendence values, and polytasking did not differ across cultures. This type of result is not uncommon (Glazer & Beehr, 2005; Daniel et al., 2015). In psychology, we aim to understand universal relationships, as well as culture-specific ones. The one correlation that differed significantly across cultures was that between Self-Transcendence values and polytasking, whereby the correlation was stronger amongst nonIndians in the USA than amongst Indians in either country. It was originally expected that this negative correlation would be weakest amongst nonIndians in the USA because, generally, Americans tend to endorse idiocentric (person-focused) values. However, what we see from the analyses is that perhaps when they do endorse allocentric (social-focused) values, specifically Self-Transcendence values, they are likely to stay focused on one task at a time. In other words, for nonIndians in the USA, endorsing Self-Transcendence values is associated with monotasking.

The findings, overall, suggest that culture has some, but not clearly discernible, bearing on how values correlate with polytasking preference. Maio and Olson (1995), examining value-attitude linkages, found that Schwartz's (1992b) value system is more likely to be found in relation to value-expressive attitudes than to utilitarian attitudes (i.e., attitudes that serve to express personal outcomes). Specifically, in the value-expressive attitude condition, study participants' attitudes toward donating to cancer research were negatively related to their Self-Enhancement values and positively related to their Self-

Transcendence values. They further go on to state that when attitudes serve to express the values, altruistic values can be a predictor of behavioral intentions. This too was seen in Glazer et al.'s (2004) study on how values relate to organizational commitment.

Specifically, they found that Self-Transcendence and Conservation values significantly and positively correlated with organizational affective commitment amongst nurses in Italy and Hungary, whereas Self-Enhancement values significantly and negatively correlated with organizational affective commitment in these same countries.

Bardi and Schwartz (2003) further demonstrated that stimulation and tradition values relate most strongly to behaviors that express them (e.g., watching thriller movies, doing unconventional things, observing traditional customs on holidays, and showing modesty with regard to one's achievements and talents), whereas security, conformity, benevolence, and achievement values correlate most weakly with their corresponding behaviors (e.g., refraining from opening one's door to strangers, avoiding confrontations with people one doesn't like, keeping promises one has made, and taking on many commitments). Hedonism, power, universalism, and self-direction values relate moderately. However, these value-behavior relations might come from normative pressures to perform certain behaviors, something of which warrants future research into the role of professional culture amongst high-tech workers.

One possible reason that Self-Transcendence (universalism and benevolence) values and polytasking negatively correlate most strongly for nonIndians in USA might be because doing one task at a time might be more preferred in order to fulfill the aim of helpfulness while living in a country (USA) that reinforces Affective Autonomy values (Schwartz, 1999), which are antithetical to Self-Transcendence values. This relationship

appears consistent with corporate trends in social responsibility movements and consistent with Maio and Olson's (1995) finding that Self-Transcendence values positively related to the expressive-attitude condition of donating to cancer research. Many high-tech companies in the USA emphasize corporate social responsibility (reinforcing universalism and benevolence values) and stopping work in order to engage in company-sponsored giving activities. For example, the company Salesforce has over 1.1 million annual employee volunteer hours (Salesforce, 2020). Giving back is such an important part of their culture that they have policies, such as paid time off, to volunteer (Fortune, 2016). Salesforce even assesses a person's desire to give during an interview. Other high-tech companies known for reinforcing social giving practices are Zumasys and American Global Logistics.

Limitations and Recommendations for Future Research

There are several limitations to this study. The current study used Bluedorn et al.'s (1999) 10-item Inventory of Polychronic Values (IPV) scale to measure personal time management preferences as indicative of both *behaviors* (e.g., "When I work by myself, I usually work on one project at a time") and *beliefs* ("I believe people should try to do many things at once;" Poposki & Oswald, 2010); it does not solely measure *preference* (e.g., "I like to juggle several activities at the same time"). Because the IPV measures more than one construct, future researchers may want to explore Poposki and Oswald's (2010) Multitasking Preference Inventory (MPI) since it solely measures *preference*, for example, "When doing a number of assignments, I like to switch back and forth between them rather than do one at a time."

A second limitation is that the current study did not use Schwartz's Refined Value

Theory (Schwartz et al., 2012). The new refined theory has 19 values, including the original 10 values. It is comprised of more narrowly defined and conceptually distinct values that provides a better understanding into the value underpinnings of beliefs (Schwartz et al., 2012). Researchers may therefore want to explore how the 19 values align and interact with each other amongst these three groups and others.

A third limitation to the current study is the lack of controlling for confounding variables, such as variations in work environment cultures. The current study did not examine the effects of organizational culture on the individual, rather it focused on national culture. Future research might benefit from an assessment of the organization's temporal preferences and values. Also, I did not measure job security. Specifically, perhaps measuring employee perceived job security would provide further insight into their preference for polytasking. Additionally, respondents who feel greater job security might be more forthcoming and honest with their responses to the survey (Hewlin et al., 2016). Technology companies tend to be fast-paced and very competitive and might create an environment where employees could easily be replaced.

Another limitation of the current study is that only three cultures were examined, which reduces the generalizability of the findings. Additionally, with more national cultures examined, it is possible to detect the possible effects of national culture than possibly professional culture. Nonetheless, the three cultural groups enable a comparison of people of the same nationality in different countries with naturally born respondents in those countries. Of the 127 USA nonIndian respondents, all but four were born in USA. Of the four nonIndians not born in USA, the number of years living in USA ranged from 17.7 to 46.0 years, the minimum number of years working in USA ranged from 9.0 to

30.0 years, and all participants identified most with the USA, as shown in Table 4. For sample size purposes, I wanted to retain these four participants, but also because it is quite common to be an “American” without actually having been born in the USA. One common example is having an American parent in the military being stationed with their spouse and children abroad. While I did not ask the reason as to why they were not born in the USA, looking at which country each participant listed as “identify the most with,” as well as length of living and working in the USA, were helpful in determining the best representation for the nonIndians in USA group.

Additionally, research might extend to study culture’s influence on individual values, as well as personality, and how each subsequently relates with polytasking preference. For example, testing if an achievement-oriented personality (e.g., Type A behavior pattern) positively relates with polytasking more than with achievement value type. Roccas et al. (2002) suggest that values might have a stronger influence on attitudes and behaviors for which individuals have cognitive control or choice, whereas traits might have a stronger influence on attitudes and behaviors for which individuals have little cognitive control. They also found that agreeableness positively correlated the most with benevolence and tradition value types. Openness to experience positively correlated the most with self-direction and universalism value types. Extroversion correlated the most and positively with achievement and stimulation value types and conscientiousness correlated the most and positively with achievement and conformity value types.

Implications

Results showed that individuals from different cultural groups did not significantly differ on temporal preference but did on personal values. Moreover, with

exception of the correlation between Self-Transcendence values and polytasking (for one group—nonIndians in USA), the other correlations between higher order values and polytasking were culturally invariant. Thus, in high-tech organizations whether in the USA or in India, criteria for hiring, retaining, creating and/or revising job positions, and onboarding programs, may be able to rely on values. Within the USA, organizations that need employees to polytask might want to evaluate the extent to which Self-Transcendence values are a priority, as it had a stronger negative correlation with polytasking amongst nonIndians in USA than Indians in India and USA.

Conclusion

The main contributions of the present study include the examination of the relationship between Schwartz's (1992b) individuals' higher order values in relation to polytasking preference across cultures. The study findings show that polytasking preference is invariant across cultures and values differ between nonIndians in the USA and Indians in either country. Additionally, the correlation between polytasking and each of Self-Enhancement values and Self-Transcendence values (two opposing values) are particularly strong (in opposing directions) across each cultural group. Self-Transcendence values appear to have a stronger relationship with polytasking amongst nonIndians in the USA than either Indian group, particularly those in the USA. Nonetheless, the correlations between polytasking and values follow the sinusoidal curve and reinforce the Schwartz (1992b, 1999) values theory. More research is needed on the role of values on individuals' behavioral preference for multitasking, as both might have implications on workforce hiring decisions.

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APPENDIX A

INFORMED CONSENT FORM



Assessment of Time Preferences and Values

Informed Consent for Survey Questionnaire

I. INTRODUCTION/PURPOSE:

I am being asked to participate in a research study on time preferences across cultures. This information is being acquired for research purposes only. My responses will remain anonymous. The researcher will not have access to personal information about me or other potential participants; no one will be able to identify me. My involvement in this study will begin when I agree to participate.

II. PROCEDURES:

As a participant in this study, I understand that data from this survey will remain anonymous. Overall results of this study may be published.

III. RISKS AND BENEFITS:

My participation in this study does not involve any significant risks and I have been informed that my participation in this research may only benefit me through improvements in organizational practices that are a result of understanding the aggregate of findings from the survey study.

IV. CONFIDENTIALITY:

Survey data will be completely anonymous. Any information learned and collected from this study in which I might be identified will remain confidential and will not be disclosed under any circumstances without my explicit written permission. All information collected in this study will be stored in password-protected databases. Only the University of Baltimore investigator and members of the University of Baltimore-based research team will have access to these records. If information learned from this study is published, I will not be identified by name. By continuing to complete this survey, I am acknowledging that I have reviewed this consent form.

Consenting to participate in this research also indicates my agreement that all information collected from me individually may be used by current and future researchers. Such use will include sharing anonymous information with other researchers for checking the accuracy of study findings and for future approved research that has the potential for improving human knowledge.

V. COMPENSATION/COSTS:

I understand that upon completion of the full survey I will receive a fixed compensation via Amazon Mechanical Turk system.

VI. CONTACTS AND QUESTIONS:

For any questions comments or concerns about my participation in this study, I will be able to contact the principal investigator, Holly Moody (graduate student) at holly.moody@ubalt.edu or Ms. Moody's thesis chair, Sharon Glazer at sglazer@ubalt.edu or sglazer@ubalt.edu. For questions about rights as a participant in this research study, contact the UB IRB Coordinator: 410-837-4057, irb@ubalt.edu.

VII. VOLUNTARY PARTICIPATION

I have been informed that my participation in this research study is voluntary and that I am free to withdraw or discontinue participation at any time. Choosing not to participate in completion of this survey will not affect my relations with the University of Baltimore or my organization.

Whom to Contact about this study:

Principal Investigator:
Holly Moody, Graduate Student
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APPENDIX B

SURVEY ITEMS UTILIZED IN STUDY

Section I: Socio-Demographic and Type of Workplace Information

Instructions: For purposes of statistical analysis only, please answer the following questions about yourself. Your answers will remain anonymous. This biographical data is important to this research study so that we can describe the overall sample of respondents. Most of the questions listed below are answered by selecting a number. Some ask that you type a number or words.

1. In which country were you born? _____
2. With which country do you MOST identify? _____
3. Do you primarily speak English at home?
 - 1 No
 - 2 Yes
4. Employment status:
 - 1 Full-time
 - 2 Part-time (please specify) _____
 - 3 Unemployed
5. Which of the following best describes the type of company you work for?
 - 1 Insurance
 - 2 Law
 - 3 High-Tech
 - 4 Retail
 - 5 Other
6. Sex:
 - 1 Male
 - 2 Female
7. Age (as of last birthday; in years): _____
8. How many months or years have you been working in the USA: _____ year(s)
_____ month(s)
9. How would you describe your parents' dominant ethnicity? _____

10. How many months or years have you lived in the USA? _____ year(s) _____ month(s)

11. How would you describe your dominant ethnicity? _____

12. How many years have you spent in your profession or this career path: _____ years
_____ months

13. Marital status:

- 1 Single
- 2 Married/Re-married
- 3 Living with partner(s)
- 4 Divorced/Separated
- 5 Widowed/Widower
- 6 Other

14. Highest academic degree:

- 1 High School Degree
- 2 Bachelor's Degree
- 3 Master's Degree
- 4 Doctorate
- 5 Other

15. Job Title: _____

16. How long have you been working for this company: _____ year(s) _____ month(s)

17. Do you supervise other employees?

- 1 No
- 2 Yes (how many?) _____

18. Do you work in a local firm?

- 1 No
- 2 Yes

If yes, please go to #14, if no, please go to #15.

19. Does your firm have relationships with other countries (suppliers, marketing, etc.)?

- 1 No
- 2 Yes

20. In how many countries does your firm have subsidiaries?

- (1) 1-3
- (2) 4-8
- (3) 9-15
- (4) 16 or more

Section II: Time Preferences

Please answer the following question: “How characteristic or true is this of **you**?” for each item by choosing the appropriate number, from 1 (very uncharacteristic/ not true) to 5 (very characteristic/true).

	Very uncharacteristic/ not true 1	Uncharacteristic/ not true 2	Neutral 3	Characteristic/true 4	Very characteristic/true 5
A. Personal Time Management Preferences					
1. I like to juggle several activities at the same time.	1	2	3	4	5
2. I would rather complete an entire project every day than complete parts of several projects.	1	2	3	4	5
3. I believe people should try to do many things at once.	1	2	3	4	5
4. When I work by myself, I usually work on one project at a time.	1	2	3	4	5
5. I prefer to do one thing at a time.	1	2	3	4	5
6. I believe people do their best work when they have many tasks to complete.	1	2	3	4	5
7. I believe it is best to complete one task before beginning another.	1	2	3	4	5
8. I believe it is best for people to be given several tasks and assignments to perform.	1	2	3	4	5
9. I seldom like to work on more than a single task or assignment at the same time.	1	2	3	4	5
10. I would rather complete parts of several projects every day than complete an entire project.	1	2	3	4	5

Section III

Part A. Personal Values

In this section you are to ask yourself the following question:

- 1) What values are important to ME as guiding principles in MY life, and what values are less important to me?

There are two lists of values on the following pages. In the parentheses following each value is an explanation that may help you to understand its meaning.

Your task is to rate how important each value is for YOU as a guiding principle in your life. Use the rating scale below:

0—means the value is not at all important; it is not relevant as a guiding principle for you.

3—means the value is important.

6—means the value is very important.

The higher the number (0, 1, 2, 3, 4, 5, 6), the more important the value is as a guiding principle in YOUR life.

-1—is for rating any values opposed to the principles that guide you.

7—is for rating a value of supreme importance as a guiding principle in your life;
ordinarily there are no more than two such values for you.

Under each column **(in the parentheses) choose the number** (-1, 0, 1, 2, 3, 4, 5, 6, 7) that indicates the importance of that value for YOU personally. Try to distinguish as much as possible between the values by using the whole range of numbers. You will, of course, need to use numbers more than once.

Before you begin, read the values in List I, choose the one that is **most important** to YOU, and rate its importance. Next, choose the value that is **most opposed** to your values, and rate it -1. If there is no such value, choose the value least important to you, and rate it 0 or 1, according to its importance. Then rate the rest of the values in List I.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:
(Please note: "7" is generally not used more than twice for you)

Opposed to my values	Not important			Important			Very important	Of supreme importance
-1	0	1	2	3	4	5	6	7

VALUES LIST I	YOUR VALUES
1. EQUALITY (equal opportunity for all)	()
2. INNER HARMONY (at peace with myself)	()
3. SOCIAL POWER (control over others, dominance)	()
4. PLEASURE (gratification of desires)	()
5. FREEDOM (freedom of action and thought)	()
6. A SPIRITUAL LIFE (emphasis on spiritual not material matters)	()
7. SENSE OF BELONGING (feeling that others care about me)	()
8. SOCIAL ORDER (stability of society)	()
9. AN EXCITING LIFE (stimulating experiences)	()
10. MEANING IN LIFE (a purpose in life)	()
11. POLITENESS (courtesy, good manners)	()
12. WEALTH (material possessions, money)	()
13. NATIONAL SECURITY (protection of my nation from enemies)	()
14. SELF RESPECT (belief in one's own worth)	()
15. RECIPROCATION OF FAVORS (avoidance of indebtedness)	()
16. CREATIVITY (uniqueness, imagination)	()
17. A WORLD AT PEACE (free of war and conflict)	()
18. RESPECT FOR TRADITION (preservation of time-honored customs)	()
19. MATURE LOVE (deep emotional & spiritual intimacy)	()
20. SELF-DISCIPLINE (self-restraint, resistance to temptation)	()
21. PRIVACY (the right to have a private sphere)	()
22. FAMILY SECURITY (safety for loved ones)	()
23. SOCIAL RECOGNITION (respect, approval by others)	()
24. UNITY WITH NATURE (fitting into nature)	()
25. A VARIED LIFE (filled with challenge, novelty and change)	()
26. WISDOM (a mature understanding of life)	()
27. AUTHORITY (the right to lead or command)	()
28. TRUE FRIENDSHIP (close, supportive friends)	()
29. A WORLD OF BEAUTY (beauty of nature and the arts)	()
30. SOCIAL JUSTICE (correcting injustice, care for the weak)	()

These values are phrased as ways of acting that may be more or less important for YOU. Once again, try to distinguish as much as possible between the values by using all the numbers.

Before you begin, read the values in List II, choose the one that is **most important** to YOU, and rate its importance. Next, choose the value that is **most opposed** to YOUR values; if there is no such value—choose the value least important to you, and rate it 0 or 1, according to its importance. Then rate the rest of the values.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:
(Please note: “7” is generally not used more than twice for you)

Opposed to my values	Not important			Important			Very important	Of supreme importance
-1	0	1	2	3	4	5	6	7

VALUES LIST II	YOUR VALUES
31. INDEPENDENT (self-reliant, self-sufficient)	()
32. MODERATE (avoiding extremes of feeling & action)	()
33. LOYAL (faithful to my friends, group)	()
34. AMBITIOUS (hard-working, aspiring)	()
35. BROADMINDED (tolerant of different ideas and beliefs)	()
36. HUMBLE (modest, self-effacing)	()
37. DARING (seeking adventure, risk)	()
38. PROTECTING THE ENVIRONMENT (preserving nature)	()
39. INFLUENTIAL (having an impact on people and events)	()
40. HONORING OF PARENTS AND ELDERS (showing respect)	()
41. CHOOSING OWN GOALS (selecting own purposes)	()
42. HEALTHY (not being sick physically or mentally)	()
43. CAPABLE (competent, effective, efficient)	()
44. ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)	()
45. HONEST (genuine, sincere)	()
46. PRESERVING MY PUBLIC IMAGE (protecting my “face”)	()
47. OBEDIENT (dutiful, meeting obligations)	()
48. INTELLIGENT (logical, thinking)	()
49. HELPFUL (working for the welfare of others)	()
50. ENJOYING LIFE (enjoying food, sex, leisure, etc.)	()
51. DEVOUT (holding to religious faith & belief)	()

52. RESPONSIBLE (dependable, reliable)	()
53. CURIOUS (interested in everything, exploring)	()
54. FORGIVING (willing to pardon others)	()
55. SUCCESSFUL (achieving goals)	()
56. CLEAN (neat, tidy)	()
57. SELF-INDULGENT (doing pleasant things)	()

THANK YOU very much for your participation in filling out the questionnaire.

APPENDIX C

IRB LETTER



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August 27, 2018

Holly Moody
University of Baltimore
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RE: **IRB Protocol UB18-94 - Approved under Exempt Review**

Dear Holly Moody:

This letter serves as official confirmation of the Institutional Review Board's review of your protocol for a study entitled "Assessment of Time Preferences and Values", submitted for review on June 27, 2018.

The Institutional Review Board considered your request and concluded that your protocol poses no more than minimal risk to participants. In addition, research involving the use of widely acceptable survey/interview procedures where the results are kept confidential and the questions pose minimal discomfort to participants is exempt from IRB full committee review per 45 CFR 46.101 (b) (2). As a result, the Institutional Review Board has designated your proposal as exempt.

Investigators are responsible for reporting in writing to the IRB any changes to the human subject research protocol, measures, or in the informed consent documents. This includes changes to the research design or procedures that could introduce new or increased risks to human subjects and thereby change the nature of the research. In addition, you must report any adverse events or unanticipated problems to the IRB for review.

If you have any questions, please do not hesitate to contact me directly by phone or via email.

As authorized by Dr. Ann Cotten
Chair, Institutional Review Board

A handwritten signature in black ink, appearing to read 'Stefanie Dwyer', is written over a horizontal line.

Stefanie Dwyer
Coordinator, Institutional Review Board

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