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Values, Interests and Environmental Preferences for the School Context

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There is a burning desire to understand what shapes a students' pursuit of an education. There has been virtually no research on the values students hold that guide behavior. Miller and Brickman's (2004) theoretical model hypothesizes that a student's values develop in the sociocultural context of home and school. It is in the context of school that values are transformed into interests and goals to satisfy underlying needs (e.g., need of achievement). In this study we investigated how basic core values of students were related to the interests they reported and types of environments students preferred. Data was collected at a rural regional university in the U. S. 392 freshman students were administered the Profile Values Questionnaire (Schwartz, 1992, 2001) and the Holland Interest Inventory (Holland, 1996). These measures have strong validity evidence, plus the reliabilities for both of these measures were similar to those reported in previous studies. The mean rating and ranking of students' values and their interests followed the integrated theoretical premises upon which this study was based.

Introduction

There is a burning desire to understand what shapes a students' classroom pursuit to complete an education. Presently, there has been very little research in education on the values students hold that influence their interests, goals and motivate academic behavior at school. Miller and Brickman (2004; Brickman & Miller, 2001) have presented a theoretical model that hypothesizes that a student's values develop over time from events in the sociocultural context of home and school. It is in the context of school that values are transformed into interests and goals to satisfy underlying needs that serve continued motivation toward the future. In this study we explored the basic core values of students and their relationship to different types of career interests that students reported having.

Educational researchers have attempted to use students' classroom goals to explain differences in their academic motivation. These investigations have revealed that students engage in classroom work for a variety of different reasons or goals, including achievement goals (mastery, performance-approach and performance avoidance), social goals, and pursuit of extrinsic rewards (Maehr, 1984). The different types of classroom goals have been linked to differences in perceptions of the self, and environmental factors such as teacher expectancy, instructional methods, peers and various aspects of family. Additionally, research has indicated that students likely pursue multiple goals in the social context of school (Pintrich, 2000; Wentzel & Wigfield, 1998) and that these are hierarchically ranked. Culture has also been a focus of research to help differentiate students' academic behaviors. This research has shown that high and low achievers, across cultures, have similar present achievement goals (McInerney, 1992) and that students are more similar than they are different. Therefore, based on present educational research we can conclude that students are socialized in school in similar ways but it does not answer the question why some students are motivated to complete school and why some fail.

More recent research indicates that students are also socialized concerning more distant future goals that also play a role in present motivation. Research (Brickman, 1998; Brickman and Miller, 2001; Nurmi, 1993) has indicated that students across cultures pursue more distal goals and report them in the hierarchical sequence: getting an education, getting a job and having a family. Clearly, getting an education is valued across cultures for one's career goal. Understanding how values shape interests and career goals can help us understand what motivates students to complete school. To investigate the relationship between values and career interests, we draw on two bodies of research and theory that have not been examined in recent motivation research, Schwartz's work on core values and Holland's work on career preferences.

We will first discuss value types by clusters, as found in Shalom Schwartz's (1992, 2001) research, then, we will discuss John Holland's (1992, 1997) theory of personal modal style that indicates that there are at least six types of personal modal styles, and clusters of style categories in which individuals will indicate interests and preferred task activities. We will then discuss how values and career interests are related.

Values and Goals: Cross-cultural research (Shalom Schwartz, 1992, 2001) has addressed the issue of identifying values that could help differentiate between individuals' behaviors within and across cultures. Shalom Schwartz's research (1992, 1994, 2001; Sagiv & Schwartz, 1995) supports 10 distinct motivational value types. Results indicate that these values have similar meanings within and across 47 cultures, and are intended to represent universal needs of human nature that are transformed into goals. These value types (Schwartz, 1992, 1994, 2001; Sagiv & Schwartz, 1995) are based on the premise that within every group individuals are striving for some level, and combination of basic human needs. Depending on an individual's experiences specific needs become salient and cluster in level of importance and relatedness. What is relevant to this study is that each individual pursues these needs not only for the "self", but for the maintenance of the self in society and additionally for the maintenance of a society, or a collective group. As values develop hierarchically so to do preferred behavioral patterns for fulfilling needs. Shalom Schwartz, (1992) defined the core values "as desirable, trans-situational goals, varying in importances that serve as guiding principles in people's lives".

The value of **Self-direction**, by nature, is intrinsically satisfying. Self-direction is important in meeting personal self-oriented needs, such as autonomy, independence and creativity, and can also be perceived as important to the overall productivity of a group. The goal is to have the freedom to choose and work in a meaningful way. The values of **hedonism** and **stimulation** have high correlations with self-direction. The goal is to have stimulating and pleasurable experiences. Educational research (Csikszentmihalyi, 1990) certainly supports the idea that feelings of pleasure, gratification and challenge support intrinsic motivation. Self-direction, hedonism and stimulation make up a related cluster of values important to serve the needs of the "self". However, self-direction pursued for only self-pleasure and gratification through novelty and challenge does not serve the need of relatedness to others or promote the well-being for important others and society. When self-direction is "other focused," as when a student chooses to make a contribution to society and receives satisfaction from it, self-direction would cluster more closely with benevolence and universalism, rather than hedonism and stimulation

The value of **benevolence** represents the need to be responsible to others who are personally important, such as family. This need is fulfilled when there are cooperative relations that promote the well-being of everyone in a particular group. According to Roe (1956) the need for relatedness is developed in early childhood with family members and fosters a sense of interdependence and the need to be responsible to others like them. As experiences broaden, this value is transferred to other important social groups and becomes the value of **universalism**. Universalism requires open-mindedness in understanding groups where individuals differ. This

value is related to the need to be responsible to others, outside of one's own "in-group". The individuals' goal is to contribute to equity and social justice across different groups.

The value of **Achievement**, as defined by Schwartz (1992), refers to a personal success through demonstrating competence in comparison to others. This value fulfills the needs to be successful, ambitious and capable. When achievement is associated with the need for social status, prestige, control and dominance, it reflects the need for **Power**. Therefore, the values of achievement and power reflect the goals of outperforming others and seeking power. The need to feel relatedness to others is fulfilled by satisfying the needs of social power, authority and preserving one's image in society. Additionally, the value of achievement can be ranked in close proximity to the values of Security, Conformity and Tradition.

Security reflects the need to feel safe through harmony and stability of society. The goal is to feel safe, physically and emotionally. If the values of achievement and power are hierarchically important then it may become important to reciprocate relations to help promote social order in society to remain safe. **Conformity** reflects the need to restrain inclinations and impulses that disrupt society and therefore represent goals of obedience and self-discipline. Not disrupting the balance of society is another way to ensure continued pursuit of the needs represented in achievement, power and security. **Tradition** reflects a valued commitment to cultural or religious customs, ideas and the goal is to be humble and respectfully accept life's condition. As can be seen, different combinations and hierarchies of the values represented in Schwartz's theory motivate behavior for different reasons, and guide behavior differently.

Interest and Preferred Environmental Activities: Career development theories also address the role of values in helping individuals differentiate and guide actions for preferred tasks that will serve personal interests and needs (Brown, 1996). We draw on John Holland's (1992) research in career development because his theory is based on the idea that over time and experiences individuals construct different personal knowledge that guides interest toward different types of occupations. According to Holland, interests in specific occupations are based on three types of knowledge: self-knowledge concerning one's own skills and abilities; educational knowledge, or knowledge about what subject content is important to occupations; and knowledge about the types of activities in which self-perceived skills and abilities can be used to meet needs. As with the recent work concerning values, career theorists recognize that individuals attempt to develop a balance between their needs in the social context in which they operate. Preferences develop in subject content as well as skills and abilities, depending on the demands of the social context. Holland's theory has had overwhelming empirical evidence supporting the assumption that behavioral patterns become stable overtime and that most individuals can be categorized as one of six personal modal styles, and that predictable clusters of style categories can emerge. In addition to areas of interest in subject content, there are two types of activities, social and non-social, that Holland (1992) has identified as differentiating across the personal modal types. These two types of activity preferences, as with the research in values, indicate that an individual's interest is shaped by the values that underlie the needs for "self", or "self among others".

Holland's six categories include: (1) the **Realistic** personal modal style in which the individual prefers concrete vs. abstract tasks and lacks social skills. These students report interest in mechanical and technology content classes and activities that are typically completed in a non-social context. These individuals report preferring tasks that are described as repair, build, and operate. (2) In the **Investigative** personal modal style the person is task oriented, interested in math and science, independent, analytical, and reserved, and defers leadership to others. Environmental task activities are described by verbs such as, read, study, work and apply. (3) **Artistic** individuals prefer self-expression, may be characterized as imaginative, introspective, and independent and creative. They report interest in various types of art courses and literary classes and would report enjoying performing, teaching, designing, writing and practice which

indicate a socially active context. (4) The **Social** personal modal type is concerned with social problems, is oriented toward community and education and prefers activities that require social interaction such as, helping, meeting, teaching and supervising. (5) **Enterprising** personal modal types prefer leadership roles, and are domineering, ambitious and persuasive. They report liking to take business classes and report enjoying participating, supervising and serving in leadership roles. Clearly these individuals report that the tasks that are most important are completed in a social context. Finally, (6) **Conventional** personal modal types are described as practical, well-controlled, sociable, and conservative and prefer updating, checking and keeping detailed records. Although the tasks in this personal modal style indicates tasks completed independent of others, these individuals are focused on others in regard to complying to social norms.

In summary, values shape the goals we pursue and the patterns of behaviors that we use across tasks to fulfill the basic needs that values and goals reflect. Basic needs and values guide interests toward specific career goals and task activities because those careers and activities can fulfill basic needs. As goals are accomplished the value of the goal as a means of need satisfaction is enhanced as is the continued motivation for pursuit of the goal. The individual's knowledge of the goal domain and the behavioral paths that must be followed for continued goal pursuit also are enhanced.

The Present Study.

In this study we examine the values and interests students have developed at the time of college entrance. These students have just finished their secondary education and have chosen to further their education for a professional career. Career choice is one of the most important future goals that individuals pursue and is the most directly related to educational experiences. Students are socialized to believe that an education leads to a more prestigious job and making money, which in turn, supports a family, social status and can also enable one to make contributions to society. This is supported in career theories that state that one's career is a very pervasive aspect of life. Satisfaction in one's career impacts the level of satisfaction in all other roles/future goals that individuals pursue.

Based on the theoretical foundations of Schwartz and Holland, we hypothesize that students' values will be related to their career interests. The hypotheses for this study are based on the idea that students, over time and experiences have developed preferences in subject content areas, and behavioral patterns, in either a social or non-social environmental context, in which they satisfy basic human needs.

Individuals who fall in Holland's Realistic personal style are described as preferring concrete tasks and usually lack in skills for social interactions. Students who fall in this category report they prefer technical or mechanical tasks. Satisfaction of needs comes in completing clearly defined tasks in a non-social environment. A clearly defined task restricts the amount of knowledge required, and includes a clear path of completion, and is more likely than not, to be a short term goal. Short term goal needs such as choosing the tasks most preferred in the present (concrete and non-social) and experiencing pleasure and gratification in completion are "self" needs that are fulfilled and serve as motives toward these types of tasks. We would not expect these students to value being in competition with others (achievement), nor would we expect a high value rating for universalism and benevolence. Lack of social interaction skills also suggests that these students would not rate the values of power, conformity and the value of tradition above needs that can be fulfilled in isolation of others, such as stimulation and gratification. Security however, is expected to be rated higher than achievement, power, universalism, benevolence, conformity and tradition. This is hypothesized in light of two possible motives: it is important to avoid social interaction and to secure opportunities to meet the "self" needs.

We hypothesize that this personal modal style would be motivated by the value cluster of self-direction, stimulation and gratification, followed by security, benevolence, universalism and tradition, achievement, conformity and power.

Investigative personal modal style describes students as independent and oriented toward analytical tasks, frequently in the areas of math and science. These students are also described as reserved and defer leadership roles. Preferring to be independent suggests that these students will report that they prefer to choose their own tasks (self-direction), and will not prefer to disclose their social or academic knowledge, which may be required in leadership roles. However, analytical thought supports the need for stimulation through challenge, and the characteristic of being reserved suggests a relatively high understanding of others. These students could be described as functioning well in a social context, however they like to feel secure in the information they might share with others. Therefore, stimulation, benevolence and universalism and security would be expected to be rated higher than hedonism, achievement, conformity, tradition and power.

We hypothesize that the investigative personal modal style would value self-direction, and stimulation, universalism and benevolence, followed by security, conformity, security with the least emphasis on hedonism, tradition, achievement and power.

Artistic individuals are interested in the arts, and described as creative, introspective, and independent. These individuals likely have good self-knowledge because they are introspective and can effectively choose their own tasks and satisfy their need to be self-directed (independent). Having good self-knowledge also contributes to understanding "others", which in this case, may be in light of understanding how to please others through performance rather than in competition. Therefore, we would expect lower value ratings to fulfill needs associated with achievement and power. Creativeness suggests the needs for stimulation and hedonism and we would predict that these would be rated higher than security, conformity and tradition, as well as, achievement and power.

We hypothesize that self-direction, universalism and benevolence, stimulation and gratification are primary areas of importance to these individuals. Achievement, security and conformity, tradition and power are less valued.

Individuals who fall in the Social category are very adept at applying social skills, especially communication. Therefore, these students are expected to value choosing their own goals (self-direction) in a social setting. These students are also described as preferring subject content related to community-oriented-service occupations. Successful communication with others requires understanding of others and contributes to feelings of stimulation when satisfying needs related to others (benevolence, universalism, stimulation). Security would be expected to be ranked next with an understanding that security helps maintain others. It is predicted that these students would rank conformity closely with security and tradition, with achievement and power being the least important.

The values that would be predicted to be most relevant to these individuals would include self-direction, benevolence and universalism. These values are likely followed by: security, stimulation, hedonism, achievement, conformity, tradition and power.

Enterprising individuals are described as domineering, ambitious and persuasive, and have good verbal skills. All of these characteristics combined suggest that these individuals prefer to function in specific ways within social interactions. It is predicted that self-direction will be valued by these students, followed by achievement and benevolence. A competitive social and academic environment would be highly valued as they have a need to outperform others. Benevolence, or the need to be responsible to others like them, is important to help secure the opportunity of tasks that place them in high esteem by others. Universalism, Conformity and Tradition are less valued but also represent the consideration of others' positions in light of one's self. Stimulation and Hedonism and power are the values predicted to be the least valued.

We would predict that self-direction benevolence and achievement would be the value cluster most likely guiding these individuals' behavior. These are likely followed by: security, conformity, stimulation, hedonism and power.

Individuals who fall in the conventional category are described as well controlled, conservative, social, and prefers structured tasks. These characteristics suggest that they are conscious of social norms and feel it important to adhere to these in order to be successful. It is easier to adhere to tasks that are structured thus being able to determine what needs to be controlled to be successful at tasks. These individuals likely have good volition strategies to maintain behaviors to meet social standards. They are socially adept because this knowledge is necessary to stay within the perceived boundaries of appropriate behavior.

In summary, we have three specific research aims in this study:

1. To describe the value profiles for this sample based on their scores on the *The Profile Values Questionnaire* (Schwartz et al, 2001). How do these findings compare to previous work by Schwartz?
2. To describe this sample's career interest profile based on their scores on the *Holland Self-Directed Search Inventory* (Holland, 1992). Do students in this sample have profiles that include the clusters of interests found in previous work by Holland?
3. To determine whether the values students report on *The Profile Values Questionnaire* (Schwartz et al, 2001) are related to their career interests as determined by the *Holland Self-Directed Search Inventory* (Holland, 1992). Are students' categories of interest and social and/or non-social environments supported by the values hypothesized to underlie the motivation toward fulfilling "self" needs and/or "self among others" needs.

Method

Participants: Participants for this study were freshman at a regional university in the mid-west. The university has a full-time enrollment of approximately 4300. The sample for this study is 82% Caucasian with the remaining percentages fairly equally distributed across American Indian, African American and Asian. There were () males and females. Participants were students enrolled in various sections of a required freshman orientation class. 392 students age 18 or older chose to participate.

Procedures: Data were collected during freshman orientation classes that met once a week for 50 minutes for 8 weeks. Students were given relevant information as to purpose and procedures of the research and asked to participate. Each student who agreed was given a survey which included several subscales. Each subscale stood as an independent measure with items randomly listed. The following subscale instruments were used for this study.

Measures: As part of a larger study, participants received a battery of questionnaires. Only the *Profile Values Questionnaire* and the *Holland Self-Directed Search Inventory* were used in the present study. Both of these measures have received large amounts of validity evidence and were theoretically appropriate to use in the examination of values and interests.

The Profile Values Questionnaire (PVQ) (Schwartz et al., 2001) has 29 items, each presenting a portrait describing a person's goals, aspirations, or wishes that point implicitly to the importance of one of the values. Examples of items include: **self-direction** (it is important to them to make their own decisions about what they do); **stimulation** (they think it is important to do lots of different things in life); **hedonism** (it is important to them to do things that give them pleasure) and **security** (it is important to them to live in secure surroundings and avoid anything that might endanger their safety); These value motives are directed toward satisfying "self" needs. Example items for the remainder of Schwartz's values focus on values that serve as motives to satisfy "self among other" needs: **Benevolence** (it's very important to them to help the people around them); **universalism** (they want everyone to be treated justly, even people they don't know); **achievement** (they think it is important to be ambitious and who how capable they

are); **power** (it is important to them to be in charge and tell others what to do); **conformity** (it is important to them to always behave properly); **tradition** (they believe that people should be satisfied with what they have). Students were asked to rate on a 7-point scale “how much like you is the person in the portrait.” In Schwartz’s research studies, this instrument indicated that value indexes had clear convergent and discriminate validity using multitrait-multimethod analyses. Test-retest reliability (2 week interval) on the 10 values was moderate to high, ranging from .66 to .88.

Career interests were measured by the activities (interest) subscale of the *Holland Self Directed Search Inventory* (SDS). This interest inventory has abundant empirical support and has been translated to 20 foreign languages. The constructs have repeatedly been found valid and reliable (Spokane, 1996; Leung & Hou, 2001). Category items which are directed toward activities in a non-social environment fall in the realistic category only: An example item: **realistic** (“take a technology course and fix and build things”). The following category items are considered in Holland’s theory as occurring in a social setting. Two of the categories suggest a social setting but the social skills used are to restrict the level of interaction or to comply to social norms: **investigative** (“take a physics, chemistry and/or mathematics course,” and “collaborate on a scientific project in a research office or laboratory”) and **conventional** (“take accounting or commercial math course,” “update, record and/or organize detailed records for effective use”). The remaining categories and example items clearly articulate that a social environment is preferred. These include: **artistic** (“take an art course,” “design and perform for others”); **social** (“read sociology and/or psychology articles or books,” “teach, volunteer or supervise others”); **enterprising** (“take business administration or leadership classes,” “serve, supervise, act, participate or lead a group”). Permission was granted for the use and modification of the interest subscale by the publisher. Modifications included the order in which the items appeared and the use of a 7-point Likert scale.

Results and Discussion

Three-hundred, seventy-three cases were used for analyses. The PVQ reliabilities ranged from .72 to .80 for all but two of Schwartz’s values: Tradition at .51 and Security at .61. Reliabilities for the interest subscales of the Holland SDS ranged from .86 to .95. Similar reliabilities on the PVQ and SDS have been reported in previous studies.

Descriptive Statistics: Schwartz’s Values

The mean rating of each value on Schwartz’s PVQ is reported in rank order in Table 1. The ranking of these values by students is very similar to rankings found by Shalom Schwartz’s (2001) study conducted in the United States.

Students’ mean ratings on eight of the 10 values, were at least 5 on a scale from 1 to 7. The exception was the values of tradition and power. This is congruent with Schwartz hypothesis that the values across countries are universal in the respect that individuals attempt to balance fulfilling self-needs and “self among others” for the maintenance of one’s own needs and those of society. He explains the low ratings of tradition as a result of individuals not finding the need to control one’s own “in-group” on a regular basis. Additionally, power over others disrupts social harmony, one condition necessary to fulfill self as well as society needs. (If one desires power then good relations must be maintained). As a whole this group of individuals appears to follow Schwartz’s premise that students value the maintenance of the self in a social context and seek to satisfy personal and needs related to others.

Table 1

Schwartz's Motivational Values
Means and Standard Deviations for College Freshmen

Value	Rank	Mean	SD
Benevolence	1	5.61	1.14
Self-Direction	2	5.60	1.13
Stimulation	3	5.34	1.13
Hedonism	4	5.30	1.21
Universalism	5	5.29	1.07
Achievement	6	5.25	1.23
Security	7	5.12	1.13
Conformity	8	5.01	1.21
Tradition	9	4.89	1.06
Power	10	4.44	1.34

Taking into consideration that students are exposed to different subject content and a variety of sociocultural experiences we would expect to find that some students learn to rank values differently. This would be hypothesized to motivate students toward different occupational interests that not only support social maintenance but satisfy personal "self" needs. Results of the interest inventory suggest this differentiation.

Descriptive Statistics for Holland's Interest Inventory:

Means and standard deviations for each of the six categories were computed using a qualifying statistical statement that the mean for an individual case must be at least 5 to be included in a category. As can be seen in Table 2, individuals who were identified within one category did not differ from one another. Standard deviations for each category were less than 1.00. There were 69 students who reported a realistic personal modal style, 55 reported investigative, 77 artistic, 80 enterprising and 46 conventional. Clearly, students differentiated from one another. The distribution of individuals across categories also supports the idea that individuals will work to not only satisfy personal self needs but also collectively to maintain society through exercising their skills and abilities to satisfy needs related to "self among others".

We then used Holland's hexagonal model that provides a visual presentation of the inner relationship of personal modal styles and occupational environmental (activity) coefficients to determine if these students' ratings of areas of interest corresponded to theory. The theory was empirically supported in that the subsequent highest means were in categories predicted by Holland's hexagonal theoretical model. However, the standard deviations of the 2nd and 3rd ranked interest preferences in each category were more than 1.00 indicating that individuals differ more in these interest areas than in their primary area of interest. This is also consistent with Holland's theory that individuals may satisfy a variety of different occupational goals that meet needs represented in the closely related categories. In other words, individuals rarely fit into one category, areas of interest and environmental factors interact whereby an individual can often find interests in closely related work activities and satisfy important needs through tasks that typically support other areas of occupational interest.

To examine this possibility we examined hierarchical patterns of values within patterns of occupational interest to determine how individuals might differ in their motivational intensions toward types of occupations. Table 3 lists, by personal modal style, the means and standard deviations of the values students reported having and their rank order.

Table 2

Holland's Six Personal Modal Styles
Means and Standard Deviations of College Freshman

	Realistic		Investigative		Artistic		Social		Enterprising		Conventional	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Realistic	5.87 (1)	.65	3.80	2.10	3.75	1.82	3.03	1.80	3.66	1.84	3.42	1.95
Investigative	4.11 (3)	1.46	5.77 (1)	.57	3.40	1.75	3.60	1.71	3.57	1.60	3.71	1.53
Artistic	3.83 (4)	1.71	3.85	1.65	5.84 (1)	.58	4.47 (3)	1.67	4.00	1.69	3.50	1.60
Social	3.71 (5)	1.45	4.34 (2)	1.43	4.78 (2)	1.12	5.66 (1)	.50	4.84 (2)	1.12	4.48 (3)	1.26
Entrepreneur	4.27 (2)	1.42	4.31 (3)	1.31	4.32 (3)	1.57	4.87 (2)	1.36	5.75 (1)	.55	5.29 (2)	1.05
Clerical	3.40 (6)	1.57	3.73	1.55	2.85	1.60	3.68	1.70	4.37 (3)	1.48	5.74 (1)	.57

Table 3
Schwartz's Value Types
Means and Standard Deviations of College Freshman

	Realistic		Investigative		Artistic		Social		Entrepreneur		Clerical	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Benevolence	5.36 (4)	1.26	6.04 (2)	.97	6.07 (2)	.90	6.23 (1)	.75	6.09 (1)	.81	5.89 (2)	.97
Self-Direction	5.67 (1)	1.24	6.10 (1)	.97	6.17 (1)	.80	6.01 (2)	.92	6.10 (2)	.93	5.96 (1)	1.02
Universalism	5.25 (7)	1.30	5.77 (3)	.90	5.90 (3)	.69	5.90 (3)	.78	5.82 (5)	.87	5.59 (6)	1.13
Achievement	5.34 (5)	1.34	5.66 (5)	1.18	5.39 (6,7)	1.17	5.50 (6,7)	1.07	5.88 (3)	1.02	5.60 (5)	.90
Security	5.29 (6)	1.29	5.62 (6)	.99	5.39 (6,7)	1.09	5.50 (6,7)	.99	5.85 (4)	.96	5.70(3,4)	.97
Conformity	5.02 (8)	1.30	5.52 (7)	1.10	5.22 (8)	1.24	5.42 (8)	1.06	5.60 (8)	1.06	5.70 (3,4)	1.09
Hedonism	5.37 (3)	1.35	5.54 (8)	1.10	5.48 (5)	1.14	5.60 (5)	1.08	5.63 (7)	1.12	5.50 (7)	1.18
Stimulation	5.50 (2)	1.24	5.67 (4)	1.07	5.86 (4)	1.01	5.76 (4)	1.07	5.78 (6)	1.00	5.42 (8)	.98
Tradition	4.81 (9)	1.14	5.30 (9)	.86	5.08 (9)	1.17	5.14 (9)	1.13	5.21(9)	1.00	5.30 (9)	.97
Power	4.26 (10)	1.45	4.53 (10)	1.47	4.23 (10)	1.51	4.59 (10)	1.44	5.09 (10)	1.29	5.10 (10)	1.18

Realistic. As predicted, students who preferred tasks associated with a realistic personal modal style ranked the related preferences of enterprising and investigative second and third. Although, investigative is not an adjacent category it has the highest correlation of all other categories. This is consistent with Holland's empirical research findings. These students ranked the values of self-direction, hedonism and stimulation as the most important, with standard deviations ranging from 1.24 to 1.35, respectively, which were among the highest across the sample. This cluster of values indicates these individuals are open to change and try different tasks, and goals are pursued to fulfill "self needs". This is also consistent with Holland's description of this modal style as including individuals who prefer to repair, build and work on their own in a non-social environment. Choosing one's own tasks that are pleasurable, gratifying and challenging are important, plus these individuals may change tasks frequently to maintain feelings of gratification and pleasure. Performing to meet social norms or the need to out-perform others (achievement) is ranked 5th. Schwartz explains that a moderate ranking of achievement is a motivational intention to balance between motivating individuals to seek "self" needs and motivating people to work for the group. Additionally, universalism is ranked 7th, and benevolence 4th. This may suggest that there is more focus on working for one's own group than groups where people differ. The ranking of security (6th) and conformity at 8th support the importance of meeting responsibility to others like them, such as family, however responsibility to those who are different is more difficult, or less desired. This is also congruent with levels and types of desired social interaction in which realistic personal modal styles complete tasks. Except for the preferred types of tasks in a realistic environment, the standard deviations of this group differ somewhat. This indicates that students who reported themselves as preferring realistic types of tasks vary more substantially. Consistent with Holland's theory these individuals reported interest in tasks that can be completed within investigative and enterprising categories also. Considering the ranking of values these individuals may find they can fulfill needs in settings where they feel a sense of belongingness to the groups that are most like them.

Investigative. Students who reported that investigative types of tasks were of most interest to them also had higher means in the social (2) and enterprising (3) categories. The clustering of these categories is consistent with Holland's theory in that they may find satisfaction in working within a group, however they likely defer leadership roles to others. This is consistent with Schwartz's description of the value cluster of these individuals. Individuals who rank self-direction, benevolence and universalism as their most important values are able to transcend the "self" across different types of groups. In other words, they understand themselves as well as value understanding others' situations. The values that were ranked first, second and third had less than a 1.00 standard deviation indicating the students who fell in investigative category vary little in the values they deem most important. Although stimulation is ranked fourth, achievement in this group again indicates a mediating effect for balancing "self" and meeting "self and others" needs. Conformity ranked at 7 and hedonism at 8 indicates that they are unlikely to violate social norms or seek "self" pleasure and gratification at others' expense. The value rankings are consistent with Holland's theoretical description of these individuals. They are independent, concerned with social problems, however a strong investigative rating indicates they may likely defer leadership to others.

Artistic. The ratings of tasks for the artistic group were also consistent with Holland's theory. These individuals preferred social interaction (social) and leadership roles (enterprising). Artistic individuals ranked the first three values the same as the investigative category: self-direction, benevolence and universalism and also had standard deviations less than 1.00 for all three values. However, they ranked the values of hedonism and stimulation as 4th and 5th, and achievement, security and conformity as 6th, 7th and 8th. This is consistent with Holland's theory that we would likely find that these individuals are independent and creative and identify with different types of groups.

Social. These students also fell in the value cluster that Schwartz described as self-transcending. However, self-direction was ranked second to benevolence, and universalism was ranked third. Again, the standard deviations for these three values were less than 1.00 with standard deviations for other values somewhat higher. Responsibility to others in one's own group is of prime importance. Self-direction in choosing one's own goals and being concerned with social problems is consistent with Holland's theory. They are independent, prefer social interactions and prefer community-service-oriented tasks. The lower rankings of security 7th and conformity 8th, and the rankings of stimulation and hedonism 4th and 5th suggest that they may find gratification and pleasure in helping maintain stability in society.

Enterprising. Also consistent with Holland's theory, students who reported the highest mean in the enterprising category also had the next highest means in social and conventional categories. The values that these students reported aligned with the value cluster that Schwartz defined as meeting self-enhancement needs. Benevolence was ranked first, and therefore hold responsibility to their own group as important. Self-direction was ranked second, achievement third with security fourth. Again, in the most important values of this group there was little variance in their beliefs about what is important. The ranking of achievement indicates a strong need to out perform others, or at least meet social norms. They also have strong needs to maintain stable relationships however, universalism ranked 5th and conformity ranked 8th may support the idea that responsibility may indeed only be to one's own group. This is consistent with Holland's theoretical implications for this category. They prefer leadership roles which require social skills and interactions to maintain good relationships for productivity.

Conventional. Once again, these students' reports of interests met Holland's theoretical prediction of this category grouping. Students who reported the highest mean in the conventional category had the next highest means in enterprising and social categories, respectively. The students who fell in this category rated preferences for the Social category higher than the adjacent category of Realistic. This finding is again consistent with Holland's empirical research findings. Although the correlations with the Realistic category is higher than Social, the correlations between Conventional and Social are high enough that they can be predicted to report a preference for Social activities. The values aligned with Holland's interests categories as would be predicted. Self-direction was ranked first, benevolence second, with security and conformity being ranked equally as 3rd and fourth. Self-direction yielded a 1.02 standard deviation with the 2nd, 3rd and 4th ranked values yielded less than a 1.00 standard deviation. Holland would describe these students as practical, well-controlled and sociable. Therefore, choosing one's own goals and at the same time restraining impulses to comply with social norms to maintain relationships is important. This idea is supported by the low ranking of hedonism (7th) and stimulation (8th). This is most valued to be completed in one's own group. Universalism was ranked 6th. Achievement was once again ranked 5th indicating a need to balance the fulfilling needs between "self" and "self among others".

Conclusion

The results of this study suggest that the values, interests and goals to satisfy basic human needs are consistent with the theories used in this study. Students' reported patterns of values within the categories of interest that supported the idea that values play a role in motivation toward specific types of careers. This is consistent with the theoretical model presented by Miller and Brickman, (2004, Brickman and Miller, 2001). As students progress through school they experience working with subject content in the social context of school, with multiple internal and external factors shaping and giving meaning to different types of tasks. Through these continued experiences students gain knowledge, develop interests, skills and abilities to set goals to meet "self" and "self among others" needs which ultimately become a representation of the values of the student. Values become consumed in future expected outcomes such as career choice. Some

students learn to prefer tasks that are completed in a social context and are motivated at school when they have the opportunity to use knowledge, skills and abilities that they feel confident and value the needs that can be accomplished within a social environment. Still other students, have developed interests and preferences for tasks that have proved successful for fulfilling “self-needs” within a non-social environment. Clearly, these students differed in their values and subject content interests, and in different types of activities, social and non-social. These findings provide a view of the role of values in a students’ motivation to finish their education.

These results also suggest various implications for research and practice. First, educational research in motivation can benefit from using theory and measurement from different areas of psychology to help understand what motivates students to continue to pursue and complete their education. Results of this research suggest that values not only guide interests but motive students toward environmental settings that they can fulfill basic human needs. Research that is focused on the evaluation process of the self during the self-regulation process needs to consider the needs that individuals attempt to fulfill, either “self” or “self among other”. Some preferred tasks require social interaction with others to make an evaluation of success, still others only need oneself to evaluate experiences of challenge, pleasure or gratification. Research in the area of self-regulation processes could also provide insight into the types of strategies used when students are attempting to fulfill needs. A student who prefers careers associated with leadership roles is likely trying to satisfy the needs associated with achievement and might be likely to adopt strategies that underlie a performance goal, whereas, a student who is attempting to fulfill needs of self-direction, universalism and stimulation may be intrinsically motivated to use strategies associated with mastery goals to learn subject content for a career in social service. Further research investigating the relationships of values and interests with other types of future goals such as having a family, social status and making a contribution to society, as presented in the Miller and Brickman model could shed light into whether or not similar patterns of behaviors are consistent in the pursuit of other future goals. These future goals are also believed to contribute to motivation and patterns of academic and social behavior at school. Through the fulfilling of a student’s needs in activities that support what is valued the construction of meaningful knowledge is more likely. Therefore, students are more likely in turn to perceive the instrumental value of present classroom tasks for the future. Clearly, more research focused on values, interests and preferred activities and how they might be related to future goals, instrumentality and self-regulation processes would shed insight into particular social and non-social activities implemented in school that help students elaborate knowledge and develop skills and abilities to value an education as a subgoal that serves motivation to complete school.

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