

IS MATTERING WHAT MATTERS: A VALIDATION STUDY OF THE META-
VALUING MEASURE OF FLEXIBLE VALUING

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Freely choosing a life direction, or flexible valuing, is a core component of acceptance and commitment therapy (ACT). Initial research suggests that valuing behavior may contribute to psychological well-being, but has been stymied by a lack of an efficient measure. The current study examined the psychometric characteristics of a new measure of flexible valuing, the Meta-Valuing Measure (MVM), in a sample of 532 undergraduates. Exploratory factors analysis revealed 3 orthogonal factors, Valuing ($\alpha = .94$), Freedom from Values Conflict ($\alpha = .92$), and Flexibility in Valuing ($\alpha = .73$). The majority of expected relationships with other constructs were significant including those with measures of values, mindfulness, quality of life, experiential avoidance, and psychological distress.

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CHAPTER 1

INTRODUCTION

He who has a Why to live for can bear almost
any How.

Nietzsche

Nietzsche speaks to the implications holding values can have for one's life. He suggests that having a sense of purpose, a *raison d'être*, allows us to endure pain and suffering, happiness and joy, and everything in between. In investigations of over 200 life histories and suicide cases, Charlotte Bühler noted that those who lived had a direction-providing life goal and those who completed suicide did not (1935; 1962). In his celebrated work, *Man's Search for Meaning* (1959/2006), Dr. Viktor Frankl observed that this notion, choosing to live in the service of some important work or person in one's life, made the difference between surviving and throwing oneself on an electrified fence for those imprisoned at Auschwitz (Frankl, 1959/2006). He suggests that freely choosing an aim for one's life and striving toward this future creates life's purpose and meaning. Dr. Frankl notes, "Man...is able to live and even to die for the sake of his ideals and values" (p.99).

Allport (1961) noted that values have the power to direct all of a person's behavior, and, as such, Rokeach (1973) saw values as a critical concept relevant to nearly all areas of social science. A recent approach to psychotherapy, among the third wave behavior therapies, acceptance and commitment therapy (ACT, said as one word, not letters) has as its aim increasing psychological flexibility so that humans may persist in or change behaviors in order to live life in pursuit of their deepest values (Hayes, Strosahl, & Wilson, 1999; Wilson & Murrell, 2004). Such valued living, ACT proponents

contend, gives our lives a sense of vitality, meaning, and purpose. It makes life worth living in whatever context, in the face of whatever suffering will surely come from simply being a human (Hayes et al., 1999).

Is it the case that valuing is life giving and life preserving? Why should it be so? The present paper briefly reviews values research to date and explores a recent theory regarding the nature of valuing as a powerful motivator for behavior. It presents research evidence that an acceptance and values-based approach to therapy does indeed improve psychological well being, and it offers a new way of measuring valuing behavior as an important outcome of psychotherapy.

A Brief History of Social Psychological Values Research

The *American Heritage Dictionary* defines *value* as “a principle, standard, or quality considered worthwhile or desirable” and *valuing* as “...regard(ing) highly.” In the realm of psychology, the values construct has traditionally been studied from a social psychological perspective. While a comprehensive review of values from a social psychological perspective is beyond the scope and purpose of the current work, this paper reviews a fraction of that important work, with particular emphasis on efforts to measure the construct.

Allport (1961) defines values as “belief(s) upon which a man acts by preference” (p. 454). In his theory of personality, he contends that striving toward a “defining objective” (p.126) is an essential aspect of the self. Allport (1961) identifies value-orientations as part of the personality, traits that reflect the type of future a person is striving to bring about. Value-orientations serve to integrate one’s personality, and they

reflect one's "philosophy of life" (Allport, 1961, p. 543). From this perspective, values are seen as having been taught by one's culture, and they are powerful forces that direct all of a person's activities, thereby explaining his/her behavior.

Allport and colleagues developed the *Study of Values* (SOV; Allport, Vernon, & Lindzey, 1960) to measure the extent to which a person endorses six value directions. These reflect Spranger's (1928) six ideal value types: theoretical (truth), economic (usefulness), esthetic (harmony), social (altruistic love), political (power), and religious (unity). The SOV requires respondents to rank order their preferences for statements related to behavioral scenarios consistent with the six value directions, and it yields a plot of the relative importance to the person of the six values (Allport, 1961). The SOV was used for years in educational, research, and counseling settings. However, it is no longer in print and is rarely used today as it is considered outdated (Kopelman, Rovenpor, & Guan, 2003). An updated version of the SOV is available from the authors (Kopelman, Rovenpor, & Allport, 2002); its psychometric properties are similar to the original and were unfortunately marginal in a study conducted with 179 college students ($\alpha = .67$; Kopelman et al., 2003).

A decade after Allport and colleagues, Rokeach (1973) defined a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p. 5). He defined value system as an organization of such beliefs in order of relative importance. Rokeach noted that values are influenced by society, culture, and personality, and that they influence behavior and attitudes. From this perspective, the number of values a person holds is seen as fairly small, and the type of values

possessed by people are universal (Rokeach, 1973). In addition, while the number of values possessed by a person is fairly static, their order of importance may change. Rokeach called values that specify a mode of behavior “instrumental values” and values that specify end-states “terminal values.” Values serve as guides and motivation for behavior; specifically, instrumental values specify behaviors necessary for the attainment of the desired end-state; terminal values remain motivating because they are never completely fulfilled (Rokeach, 1973). This theory suggests that behavior change can be brought about by pointing out inconsistencies between self-conceptions/valued beliefs and cognitions about one’s behavior.

Rokeach’s Value Survey (RSV; 1973) was designed to measure the importance of 18 terminal values and 18 instrumental values as a person’s guiding life principles. Examples of terminal values include: freedom, pleasure, happiness, family security, an exciting life, a comfortable life, and a world at peace. Examples of instrumental values include being: capable, clean, ambitious, forgiving, honest, independent, and obedient. Respondents rank these values in order of importance. The RVS has been popular in research settings for some time (Kopelman et al., 2003); however, it has been plagued in American and Chinese samples by poor criterion-related validity (Peng, Nisbett, & Wong, 1997) and marginal test-retest reliability (Sanford, 2004).

Subsequent work on values from a social psychological perspective has come from Shalom Schwartz (e.g., Schwartz, 1992). He defines values as “desirable, transsituational goals, varying in importance, that serve as guiding principles in people’s lives” (Schwartz & Bardi, 2001, p. 269). From this perspective, values are seen as guiding both behavioral choices and the evaluation of behavior (Schwartz & Bilsky,

1987). Similar to Allport's view, value priorities are seen as reflecting one's personality (Bilsky & Schwartz, 1994). Based on their review of the literature, Schwartz and Bilsky (1987) concluded that values are cognitive structures that reflect specific types of requirements for humans: biological needs, requirements for interpersonal interactions, and requirements for the welfare of the group. Schwartz contends that values reflect one's solutions to two common human conflicts: openness to change vs. conservation and self-enhancement vs. self-transcendence (1992). Values are seen as expressing a specific type of motivational goal, and this goal distinguishes one value from another.

Drawing from previous values work, philosophical and religious approaches to values, and measures of values from various cultures, Schwartz identified 10 types of values: achievement, power, stimulation, hedonism, universalism, self-direction, tradition, benevolence, security, and conformity (Schwartz, 1994). Each value type includes the motivational goal and single specific values prototypic of that value type; 44 single values contribute to the 10 value types. For example, the value type "Power" has as its motivational goal "(s)ocial status and prestige, control or dominance over people and resources" and as its specific values "social power, authority (and) wealth"; the value type "Benevolence" has as its motivational goal "(p)reservation and enhancement of the welfare of people with whom one is in frequent personal contact" and as its specific values "helpful, honest, forgiving, loyal, (and) responsible" (Schwartz, 1996, p. 3). The value types and single values and the relationships among them are considered universal based on considerable cross-cultural research (e.g., Schwartz, 1992, 1994; Schwartz & Sagiv, 1995). Schwartz contends that values are acquired through learning experiences and socialization (1994).

In the Schwartz Value Survey (SVS), respondents are asked to rate the importance of each of the 44 single values contributing to the 10 value types on a 9-point scale from “of supreme importance” to “opposed to my values.” They are instructed to rate their most and least important values first to anchor the scale. The importance of each value type to the person is calculated by averaging the ratings of the specific values that contribute to each value type (Schwartz, 1996). The SVS has been used extensively throughout the world to establish the universality of the 10 value types (e.g., Schwartz, 1992, 1994; Schwartz & Sagiv, 1995). However, there are some concerns about its psychometric properties, including low convergent validity (Peng, Nisbett, & Wong, 1997).

Recent research suggests that ratings of values using the SVS are not influenced by gender (Lan, Gowing, McMahon, Rieger, & King, 2008) and are influenced by the generation into which one is born (Lyons, Duxbury, & Higgins, 2007). With regard to the influence of values on behavior, personal values as influenced by parental and peer expectations have been shown to influence prosocial behaviors in teens (Padilla-Walker & Carlo, 2007). Universalism and conformity values have been found to be negatively correlated with violent behavior (Knafo, Daniel, & Khoury-Kassabri, 2008), and creating a social identity consistent with one’s values has been associated with increased self-esteem (Hitlin, 2007).

Despite the universal nature of values, the recognition that values are relevant to all social sciences, and the theoretically noted ability of values to explain a wide variety of human behavior, interest in values research from a social psychological perspective has waned (Rohan, 2000). Such research has suffered from a lack of a consistent

definition of values and a confusion of values with other constructs (e.g., attitudes) (Rohan, 2000). From her review of the literature on the values construct, Rohan (2000) proposes the following definition: values are “implicit analogical principle(s) constructed from judgments about the capacity of things, people, actions, and activities to enable best possible living” (p. 270). These principles are organized in cognitive structures called value systems, and within value systems, priorities of different value types are related in a predictable way. With regard to the often mentioned influence of values on behavior, Rohan (2000) proposes that a person’s value priorities cause behavioral decisions through their influence on personal worldview and ideology, and that this process often occurs without conscious awareness. To date there has been little empirical work to support Rohan’s theory on the values-behavior connection. In addition, very little theoretical or empirical work has been done from this perspective on the process of valuing (Rohan, 2000). While it offers strong support for the notion that people throughout the world acknowledge utilizing guiding life principles, social psychology has failed to offer an explanation of Nietzsche’s premise and Frankl’s observation that values can save our lives and why this might be so.

Values and Valuing from a Behavioral Perspective

While behaviorism has been accused of contributing to the demise of values research (e.g., Allport, 1961; Rohan, 2000), recently it seems to be its salvation. acceptance and commitment therapy (ACT; Hayes et al., 1999) is a thoroughly behavioral treatment that specifically addresses values. ACT is a behavior analytic approach to psychotherapy rooted in a functional contextual philosophy of science and

based on relational frame theory (RFT), a post-Skinnerian account of human language and cognition (Hayes, Barnes-Holmes, & Roche, 2001; Hayes, et al., 1999; Hayes, 2004).

Functional Contextualism

Contextualism is one of four world hypotheses, or world views, characteristic of philosophical systems, identified by philosopher Stephen C. Pepper (Hayes, Hayes, & Reese, 1988; see Pepper, 1942). A given world view can be described in terms of its root metaphor and truth criterion (Hayes et al., 1988). Contextualism has as its root metaphor “the ongoing act-in-context,” that is, “doing as it is being done” (Hayes et al., 1988, p. 100). The unit of analysis is the act-in-context, an event as an integrated whole; the assumption is that the quality of an event is lost if broken into component pieces and considered outside the context in which it participates (Hayes et al., 1999). Its truth criterion is successful working, or effective action (Hayes, 1993; Hayes et al., 1988). From this perspective, to the extent that it accomplishes a desired end, an analysis can be said to be “true” (Hayes, 1993; Hayes et al., 1988). This desired end, toward what one is working, is the analytic goal, and it must be verbally stated a priori so that one knows by what standard to evaluate the effectiveness of an action (Hayes, 1993). Analytic goals, as the basis for evaluation, cannot be evaluated themselves, only stated (Hayes, 1993). There are different types of contextualism that differ based on their analytic goal. Functional contextualism has as its analytic goal the prediction and influence of behavior (Hayes, 1993). Such prediction and influence requires an

understanding of contextual variables, as only these may be directly manipulated (Hayes & Brownstein, 1986).

The ACT model of treatment parallels its philosophical underpinnings, both at the level of therapist and at the client level. At the therapist level, psychological events are conceived of as ongoing interactions between the person as a whole organism and situational and historical contexts (Hayes, 2004a). Symptoms are not addressed independently of the context in which they occur. In fact, ACT therapists seek to help the client identify and alter the function and context of private events like difficult thoughts and feelings, rather than the form of such events (Hayes et al., 1999). From this perspective, an analysis of a behavior or therapeutic intervention successfully works to the extent that it allows for the prediction and influence of behavior (Hayes et al., 1999). Clients, too, are encouraged to identify the function of their behaviors and evaluate their successful working against an analytic goal. The verbally stated analytic goal, or direction toward which the client is working, is his/her freely chosen values (Hayes et al., 1999). What is effective action (what is “true”) is that which moves the client in the direction of chosen values, and it is such behavior that the therapist seeks to influence.

Relational Frame Theory (RFT)

The RFT account of language and cognition is predicated on the idea that humans have the ability to learn to respond to stimulus events (changes in the environment that influence behavior) on the basis of arbitrary contextual cues (Hayes et al., 1999; see Hayes et al., 2001 for a book-length discussion of RFT). The contextual

cues are considered arbitrary to the extent that they are not based on formal properties of the stimuli or direct experience with the stimuli alone. For example, while a dog can be trained to respond to two balls on the basis of the formal relation of size (given two balls, touch the smaller one), a human can learn to apply the relation “smaller than” in an arbitrary sense, for example, with respect to monetary value (e.g., knowing that a nickel is smaller than a dime, though not in physical size). Other examples of stimulus relations that can be learned and arbitrarily applied include before-after, more-less, same-different, and others (Hayes et al., 1999). Responding to stimuli related on the basis of arbitrary contextual cues is called arbitrarily applicable relational responding (e.g., responding to the spoken word “cat” in the same way we would respond to the written word c-a-t; their formal properties are quite different, but we easily learn this same-as relation).

Arbitrarily relating stimuli in such a way is considered relational (or indirect) learning and is a learned behavioral class (Hayes et al., 1999). This learned process and resulting classes have three main properties: the relations within them show mutual entailment, show combinatorial entailment, and make possible a transformation of stimulus functions among the stimuli being related. Mutual entailment implies that if someone learns that if X relates to Y in some way in a given context, then some relation is held between Y and X in that context (this relation is said to be derived because it is not directly taught). Combinatorial entailment implies that if one learns that X is related to Y in a certain way in a certain context and Y is related to Z in a certain way, then some sort of mutual relation also exists between X and Z in that context (similarly this last relation is derived) (Hayes et al., 1999). Transformation of stimulus functions is also

derived, in that although never directly trained, members in a stimulus class may take on the functions of other members of the class. For example, in an equivalence class (where the relations are same-as), arbitrary stimuli may take on the functions of an aversive stimulus in the class in a certain context, e.g., after learning that “MRSA” in a hospital is the same as “drug-resistant bacteria” which is the same as “life threatening,” MRSA written on a caution sign in a hospital may take on the functions of “life threatening.” Framing relationally describes this process of arbitrarily applicable relational responding that is contextually controlled and involves mutual entailment, combinatorial entailment, and transformation of stimulus functions (Hayes et al., 1999). This behavior is readily observed in typically developing children and children with mental retardation starting around age 17 months, and is largely absent in animals and children with autism (Hayes et al., 1999).

RFT suggests that relational framing, once learned, occurs constantly and that verbal relations once derived cannot be eliminated, only added to (Hayes et al., 1999). Verbal knowledge is considered to be the result of elaborate derived stimulus relations. While such derived relational responding is highly adaptive (e.g., if one responds to the spoken word “lion” when it is shouted by one’s guide on the African savannah as though it were an actual lion, because you have learned “lion” spoken on the savannah = actual lion = really dangerous and have derived “lion” shouted in this context = really dangerous, and run, you can avoid being eaten without ever having to learn that lions are dangerous by encountering an actual lion), it may also be the case that some of this activity contributes to psychological suffering (Hayes et al., 1999). Words, which are arbitrary combinations of letters and sounds, framed relationally with other stimuli can

take on some of the functions of those stimuli, e.g., a report of a traumatic experience takes on the aversive functions of the actual event (and is associated with crying, fear, anger, accelerated heart rate) even though the report was never directly associated with the actual event (Hayes et al., 1999). Because aversive events are generally avoided (such avoidance behavior is negatively reinforced) (Skinner, 1938), humans find ourselves in the predicament of avoiding not only actual aversive events, but thoughts, memories, and emotions that take on the aversive functions of such events. We struggle against our own private experiences, which become aversive as a result of natural language processes, and which cannot be eliminated due to the same processes.

Experiential avoidance refers to this process of unwillingness to experience certain private events that have taken on aversive functions (e.g., memories, thoughts, feelings, bodily sensations) and attempts to change the frequency or form of the events (Hayes et al., 1999; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Such attempts to alter aversive private events (e.g., thought suppression, distracting oneself, abusing substances) are negatively reinforced in that they temporarily interfere with the given event (Hayes et al., 1999). However, research suggests that attempts to control such private events may ultimately have the paradoxical effect of increasing the occurrence of such private events (e.g., Wegner, Schneider, Carter, & White, 1987). Experiential avoidance is considered to be a form of rule-governed behavior, that is, behavior controlled by a verbal antecedent (in this case, for example, “If I stay home, then I won’t feel anxious, which is good”) (Hayes 2004b).

Rule-governed behavior is human behavior based on a verbal statement of the

relations between events (the above rule is generated using relatively simple relational frames of time (if...then), comparison, and coordination) (Hayes, 2004b). It is a type of arbitrarily applicable relational responding in that it entails relating events, although not necessarily on the basis of any formal property. Skinner defined rule-governed behavior as that which occurs due to contingencies that are specified and not directly contacted (Skinner, 1969). Rule-governed behavior makes it possible for humans to behave effectively even when consequences are delayed, small, or of a probabilistic nature and when interaction with direct contingencies would have adverse consequences, e.g., when hiking through the desert, take lots of water with you (Hayes et al., 1999). To “understand” a rule refers to the process of deriving stimulus relations. Understanding a rule makes present the functions of the events/stimuli specified by the rule (Hayes & Hayes, 1989). Rule following is maintained by differing kinds of contingencies, depending on the rule type. Three types of rules that differ based on their function have been identified: pliance, tracking, and augmenting (Hayes, Zettle, & Rosenfarb, 1989).

Pliance occurs when one follows a rule due to a history of reinforcement by the socio-verbal community when there is correspondence between the rule and rule-following behavior, e.g., following a rule based on a history of praise for such rule following (Hayes et al., 1989). In the desert example, if one is carrying lots of water based on a history of pleasing or displeasing one’s hiking guide, this is pliance. The rule-governed behavior known as tracking is maintained by a history of correspondence between natural consequences and the rule; if one carries water based on a history of rules like this correctly specifying a need for hydration, that behavior is tracking and the rule is called a track (Hayes et al., 1989). Augmenting refers to “rule-governed behavior

that alters the extent to which some event will function as a consequence” (Hayes et al., 1999, p. 31). Augmenting (the rule is called an augmental) refers to the process whereby behavior can come under the control of consequences that are abstract or have never been experienced. A rule that establishes a previously inexperienced event as a significant consequence (e.g., work hard in grad school and you will receive a PhD) is called a formative augmental (Hayes et al., 1999). Valuing is this form of augmenting, as will be discussed in detail later.

However, rules are not without their dark side, and research suggests that behavior under the control of verbal rules may become insensitive to actual contingencies in the environment (Hayes, Brownstein, Zettle, Rosenfarb, & Korn, 1986). That is, once given a rule, humans may continue to respond as the rule specifies even if contingencies in the environment change, for example, continuing to respond to the rule “Don’t ask for help from Professor X, she’s mean” even when Professor X offers to help you graduate sooner and would, in fact, help you. Rule following persists despite negative consequences, reflecting a kind of behavioral rigidity similar to patterns often seen in clinically significant behavior (Hayes et al., 1999). Research suggests that much of this behavioral rigidity and insensitivity to direct contingencies result from excessive pliance (Hayes et al., 1986). That is, a desire to please or alienate others comes to dominate over directly experienced contingencies (Hayes et al., 1999). Tracking and augmenting can also be problematic. The aforementioned example regarding Professor X is an example of ineffective tracking. Augmenting may become problematic when altering the frequency and form of private events is linked to an important outcome (e.g., “I have to get rid of negative thoughts in order to have a good life”) (Hayes et al., 1999).

ACT Treatment Model

ACT seeks to undermine these language processes when they are ineffective or damaging (e.g., attempts to avoid, change, or remove private events such as thoughts, emotions, and memories, and/or persistent rule following when it is ineffective) and utilize them when they work (e.g., choosing and behaving consistently with one's values) (Hayes, Wilson, Gifford, & Walser, 1995). Increased psychological flexibility is the primary goal of ACT; the aim is to increase the person's ability to make contact with the present moment (i.e., current contingencies) and to change behaviors or persist in behavior when doing so facilitates living consistently with a valued direction (Hayes et al., 1999). The six core processes of ACT are designed with this aim in mind; they are: Acceptance/Willingness, Cognitive Defusion, Contact with the Present Moment, Self-as-Context, Values, and Committed Action. These processes are utilized when doing so is effective in helping the client live a meaningful life in the service of his/her values.

Acceptance and Willingness

From an ACT perspective, negative private content (e.g., thoughts, feelings, memories, bodily sensations) is not dangerous or pathological, but is instead, a very normal part of being a human with language processes (Hayes et al., 1999). What can be life-threatening and can lead to all sorts of problems in living are attempts to avoid or get rid of such private content (i.e., experiential avoidance; Hayes et al., 1996); excessive spending, overeating, drug abuse, and/or committing suicide to end painful feelings are some examples of this. Experiential avoidance is viewed as a very normal part of being a human, and it persists because it is negatively reinforced by the

temporary interruption in negative content it provides and because it is sanctioned by the culture (e.g., “big boys don’t cry”) (Hayes et al., 1999). However, from an ACT perspective, psychological pain is seen as inevitable in the process of living as a human; suffering is seen as all that humans do to get rid of their pain.

As aforementioned, research suggests that efforts to control or change private content are often ineffective and in fact, may increase the frequency of such content or have other negative effects (Hayes, 2004b). Acceptance and willingness are offered as alternatives to experiential avoidance (Strosahl, Hayes, Wilson, & Gifford, 2004). Willingness to make full, undefended contact with previously avoided painful content is fostered, as this process results in more effective behavior than control (Strosahl et al., 2004). Private events are seen as not subject to direct control. Thus, clients are encouraged to view thoughts and feelings as simply what they are, experiences that the person is having, rather than some literal truth about the person. Acceptance involves exposure to negative private content in this way (Hayes, 2004b).

Cognitive Defusion

Framing events relationally is incredibly adaptive for humans (e.g., generating that rule about taking water on a desert hike keeps one alive without ever having to encounter the effects of not taking water) (Hayes, 2004b). As a result of their usefulness (as humans we can verbally evaluate the success of our verbal rules, providing instant reinforcement; we can “know” that these processes work), such verbal processes come to dominate over functions that are nonverbal (Hayes, 2004b). Behaviors become more and more regulated by stimulus functions specified by relational frames rather than by

actual experienced contingencies. This is evident in the aforementioned research on the resistance of verbal rule following to changes in the environment (Hayes et al., 1986). Such inflexibility in responding due to verbal processes is termed cognitive fusion (Hayes, 2004b). Cognitive *defusion* refers to techniques in ACT designed to change the function and/or context of private events and thereby decrease their regulation of the person's behavior (Strosahl et al., 2004). Such techniques include mindful observance of private events (e.g., watching thoughts go by like soldiers on parade) and repeating a troubling thought over and over again until the words lose their meaning (Hayes, 2004b).

Contact with the Present Moment

This ACT process involves facilitating the client's awareness of the present moment, including all that is going on within the client (thoughts, feelings, memories, bodily sensations) and all that is occurring in the external context, as well as the interactions between the two, here and now (Strosahl et al., 2004). Mindfulness techniques are used to facilitate such awareness. Mindfulness originates in Eastern meditation and other spiritual traditions and is defined as "...paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1994, p. 4). As a process, contact with the present moment facilitates the client's direct experience of current contingencies and reduces the dominance of evaluation and verbal rules as regulators of behavior (Hayes, 2004b).

Self-As-Context

This process in ACT involves facilitating a sense of a self that has ever been present and is greater than thoughts, feelings, memories, and bodily sensations (Strosahl et al, 2004). This self is the context in which such private events occur. It is distinguished from a conceptualized self in which thoughts and feelings are literally true (in such a case, negative private content would indeed be quite threatening and something to get rid of) (Hayes, 2004b). Fostering a transcendent sense of self provides a context in which it is possible to make undefended contact with negative private events and to accept them as just that (Hayes, 2004b). Such a sense of self is shaped through deictic relational frames such as now-then, here-there, I-you (Hayes, 1984). The relations specified in these frames are those from the perspective of the speaker and, hence, allow for perspective-taking (Hayes, 1984). As children, we are reinforced by the social-verbal community for being able to report on our behavior from our own perspective (e.g., a parent asking a child “What did you eat for lunch?” and rewarding accurate reporting) (Hayes, 1984). What we do, eat, feel, or see may change, but the perspective does not change; in this sense, the “you” is the perspective, and this behavior of seeing that one sees from a particular perspective (e.g., one’s own) can be facilitated (Hayes, 1984). Self-as-context is facilitated by exercises that encourage the client to notice what he/she is experiencing right now and to notice who is noticing (Strosahl et al., 2004).

Values

Values and valuing are discussed in detail below as this ACT process is critical to

the present project. Values are important to all other ACT processes. It is in the service of helping the client lead a meaningful, vital life in the service of his/her values, defined and identified in a particular way, that techniques that foster acceptance, defusion, contact with the present moment, self-as-context, and patterns of committed action are utilized (Hayes et al., 1999). The ACT focus on values is different from other therapeutic approaches that may be more symptom-focused. From an ACT perspective, the therapist works to consider symptoms “in the context of a whole life” (Wilson & Murrell, 2004, p. 136). This reflects the philosophical approach emphasizing the act-in-context, the event as an integrated whole, and the assumption that important information is lost if component pieces are examined outside of the context in which they occur (Hayes et al., 1999). The ACT therapist wants to know not only the struggles the client has had, but also how those struggles occur in the life of a whole person who in addition to struggles has deeply held values (Wilson & Murrell, 2004).

Committed Action

From an ACT perspective while acceptance, willingness, and defusion techniques target events that are not directly, readily changeable (e.g., thoughts, feelings, memories), committed action involves movement in areas that can be changed, that is, the realm of overt behavior (Hayes, 2004b). In this part of the treatment, clients are encouraged to identify and engage in ever expanding patterns of values-consistent behavior (Strosahl et al., 2004). This process can be described as “valued-events scheduling,” (p. 134) and is a form of behavioral activation (Wilson & Murrell, 2004). As described below, due to the nature of valuing from this perspective as

rule-governed behavior (specifically, formative augmenting), such values-consistent behavior will be significantly reinforcing and provide life a sense of meaning and vitality.

ACT Approach to Values and Valuing

From an ACT perspective, “(v)alues are verbally construed global desired life consequences” (Hayes, et al., 1999, p. 206). Similar to other perspectives on valuing, from an ACT perspective, all verbally competent human beings have the capacity for values because these language processes emerge in early childhood (Hayes et al., 1999). In the ACT literature, values are described in a manner similar to that described by the social psychological perspective, varyingly as “guides to action” (p. 204) and “personal choices about desirable life ends” (Hayes et al., 1999, p. 203), “life directions” (p. 32), and “guidance mechanism(s) that lead to purposeful, enriching patterns of behavior” (Strosahl et al., 2004, p. 45), and “leading principles” (Robb, 2007, p. 118). One’s values are the answer to the question, “In a world where you could choose to have your life be about something, what would you choose?” (Wilson & Murrell, 2004, p. 134).

However, distinct from the social psychological perspective, values, although the result of verbal-cognitive activity, are seen as choices that are to be made freely. Values can be chosen, with or without reasons present, but ideally not for reasons; that is, one chooses among alternatives simply because one can (Hayes et al., 1999). The idea is to choose what one wants one’s life to be about as if no one else would know and as if anything were possible. In this way, it is hoped that values will be freely chosen, not chosen out of avoidance or based on others’ desires (Hayes et al., 1999). The purpose

of having values be freely chosen is to prevent pliance-type responses which can lead to insensitivity to direct experience of what works and to rigidity in responding (Hayes et al., 1986; Hayes et al., 1999). What is meant by flexible valuing is this idea of *freely* choosing valued life ends. The social psychological perspective fails to address the function of valuing; it is unclear whether Schwartz's universal values (e.g., hedonism, power, benevolence) are valued as freely chosen valued ends (they are important to the person because they are important) or whether they are valued because they allow the person to receive praise from others, dominate others, or avoid pain. From an ACT perspective, it is precisely the function of valuing, as opposed to its form, that is believed to make a difference for people's lives (Hayes et al., 1999).

Valuing is the behavior of verbally constructing a future, in other words, choosing a life direction (Hayes et al., 1999). Technically speaking, valuing is generating verbal rules which will serve as formative augmentals. As augmentals, or verbal rules that change reinforcement patterns, values have the power to guide behavior across time and situation. These rules make meaningful even small steps in a valued direction, although the consequences may be distant and not previously (or ever) experienced (e.g., one may never see world peace, but efforts in this direction will be reinforcing if the rule, "world peace is important to me," is freely chosen and followed) (Hayes et al., 1999). In this way, values are used to build patterns of behavior that are vital and enriching; that is, valuing makes possible building and maintaining patterns of committed action (Strosahl et al., 2004). Values also dignify and provide motivation for the painful work of treatment that requires confronting difficult personal content; as

such, they are a means to foster willingness (Hayes et al., 1999; Wilson & Murrell, 2004).

A person's freely chosen values are considered perfect and complete in themselves; they, like analytic goals, can be stated, but not evaluated because that would require another set of values with which to evaluate them (Hayes et al., 1999). A distinction is made between values and other verbal goals in that as directions, values can never be fully attained, and they are not seen as objects that can be held (Hayes et al., 1999). The aim is for the process of living one's values to become the desired outcome. Goals simply help one to stay on course. As such, from an ACT perspective, as opposed to speaking of "values" the noun, it is often more relevant to speak of "valuing" the verb. Valuing is viewed as responding from this perspective, and as such, ACT therapists are concerned with the person who is valuing and make no argument about whether intrinsic values exist independently of the person in the current context (Hayes et al., 1995). It is the whole person "who is mattering" in a context, not what is mattered about that is of primary interest (p. 31). It is not the "something" that is important from this perspective, rather "importanting" about something (Robb, 2007). Consistent with functional contextualism, valuing is an ongoing act-in-context and cannot be separated from the context in which it participates. It is responding moment to moment, in the here and now, and is always available (Hayes et al., 1999). That is, in any moment one can choose to live consistently with one's values, "importanting" as ongoing action in any moment in a given context buffers against so-called values conflicts. Valuing is freely choosing in a context an answer to the question, "What do

you want your life to stand for?” (Hayes et al., 1999, p. 215). This behavior (verbally constructing a chosen future) is shaped in ACT through values clarification.

Values Clarification from an ACT Perspective

Values clarification can take the form of simply asking the above questions or facilitating participation in experiential exercises such as having the client imagine what he/she would wish loved ones would ideally say at his/her funeral. At times, clients may have trouble identifying valued ends in this manner. Such clients may have a history of disappointment and hurt as results of caring about things in the past, and they may have come to avoid caring as yet another aversive (Hayes et al., 1999). From an ACT perspective, in cases such as these, it is important to appreciate the client, where he/she is, and to gradually shape valuing as an empathic therapeutic relationship and other techniques (e.g., willingness, defusion) allow for it to occur. Subsequently, more formal values assessment may be useful. Formal values clarification involves completing one or more measures designed for this purpose. These measures include the Personal Values Questionnaire (PVQ; Blackledge & Ciarocchi, 2006) and the Valued Living Questionnaire (VLQ; Wilson & Groom, 2002). Both assess values with respect to specific domains of living commonly identified by people as important. The PVQ and the VLQ are described briefly below. More detailed descriptions and psychometric data can be found in the Method section of the current paper.

Clients completing the PVQ are asked to identify valued actions (how they would ideally like to be) across 9 values domains: Family Relationships, Friendships/Social Relationships, Couples/Romantic Relationships, Work/Career, Education-

Schooling/Personal Growth and Development, Recreation/Leisure/Sport, Spirituality/Religion, Community/Citizenship, and Health/Physical Well-Being. They are then asked to answer questions regarding the type of rule-governed behavior reflected in the valued actions they have listed, in order to assess for pliance or avoidant tracking versus augmenting-type responses (Blackledge & Ciarocchi, 2006).

Clients completing the VLQ are asked to rate how important 10 valued living domains are to them. The 10 values domains are: Family, Marriage/Couples/Intimate Relations, Parenting, Friends/Social Life, Work, Education/Training, Recreation/Fun, Spirituality, Citizenship/Community Life, and Physical Self-Care. After rating the importance of these domains, clients are asked to rate how consistently they have been living with respect to their values in each domain (Wilson & Groom, 2002).

Values clarification, whether formal or informal, is used to identify additional targets for exposure-based techniques (e.g., acceptance and defusion) that build psychological flexibility (Wilson & Murrell, 2004). Such targets include values domains that are associated with negative private content and subsequent avoidance and distress, for example, values that are held inflexibly as “have to’s,” or pliance-type responses, as well as values domains that are of high importance to the client, but in which he/she has low consistency in living these values. In addition, values clarification is used to identify targets for building patterns of meaningful committed action (specific values-consistent behaviors in which the client can begin to engage) (Wilson & Murrell, 2004).

The Effectiveness of ACT

RFT and ACT are a comprehensive theory and model that potentially explain why and in what context values may be life giving and life preserving and may affect other behavior. A growing body of research suggests that this acceptance and values-based approach is effective in treating a wide variety of problems in living (See Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009 for reviews). For example, ACT has been shown to be effective in reducing rates of re-hospitalization for inpatients with psychotic disorders (Bach & Hayes, 2002), in improving active coping in parents of children with autism (Blackledge & Hayes, 2006), in decreasing social anxiety (Block & Wulfert, 2000; Dalrymple & Herbert, 2007), in facilitating job stress management (Bond & Bunce, 2000), in reducing sick days in persons with chronic pain (Dahl, Wilson, & Nilsson, 2004; Vowles & McCracken, 2008), in reducing hair pulling (trichotillomania) and chronic skin picking (Flessner, Busch, Heideman & Woods, 2008; Twohig, Hayes, & Masuda, 2006; Twohig & Woods, 2004; Woods, Wetterneck, & Flessner, 2006), in facilitating smoking cessation (Gifford, Kohlenberg, Hayes, Antonuccio, Piasecki, Rasmussen-Hall et al, 2004), in improving self-care among persons with Type 2 diabetes (Gregg, Callaghan, Hayes, & Glenn-Lawson, 2007), in reducing drug use among persons with a history of polysubstance abuse (Hayes, Wilson, Gifford, Bissett, Piasecki, Batten, et al. 2004), in facilitating weight loss and maintenance among persons with obesity (Lillis, 2008), in reducing seizure frequency and duration among person with medication-resistant epilepsy (Lundgren, Dahl, Melin, & Keis, 2006), in reducing math-related anxiety (Zettle, 2003), and in decreasing depression (Zettle & Rains, 1989).

These results clearly suggest the effectiveness of an acceptance and values-based approach to psychotherapy. However, many of the aforementioned studies examined symptom reduction as a measure of outcome. This is not necessarily the outcome of interest from an ACT perspective. Working from an ACT perspective entails more concern for changing the function of symptoms rather than their form/frequency/duration (Strosahl et al., 2004). For example, in the study of patients with psychotic disorders by Bach and Hayes (2002), patients in the ACT group were actually more likely to report hallucinations and delusions than the treatment as usual group; however, they reported that these symptoms were less believable, and they were less likely to be re-hospitalized. Given the nature of the treatment, one would expect outcomes to look somewhat different than traditional treatments. Hence, outcome measures in ACT tend to focus on second-order change or process variables, such as believability of symptoms or willingness to experience negative private content and still behave effectively (Strosahl et al, 2004). One such measure, the Acceptance and Action Questionnaire (AAQ-II; Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, et al., 2005) was developed to measure such second order change: increases in acceptance/willingness and decreases in experiential avoidance. Recently, there has been initial work in examining how these core components of ACT (acceptance and willingness) work to facilitate change (Hayes et al., 2006).

However, the question as to whether values in particular *are* life giving and life preserving remains empirically unanswered. In the aforementioned studies by Vowles and McCracken (2008) and Lundgren and colleagues (2006; Lundgren, Dahl, & Hayes, 2008), values-based action was assessed following treatment. Both found that values-

based action mediated positive outcomes. Recent work with non-patient undergraduates suggests that valuing predicts psychological well-being (Adcock, LaBorde, Murrell, Madrigal-Bauguss, & Mitchell, 2009). However, most studies have examined decreases in experiential avoidance as a factor mediating positive outcomes in ACT (Hayes et al., 2006). Reducing EA is an aim of ACT as is facilitating valued living. It is possible that increases in valuing behavior, while shaped in ACT treatment and predicted by the ACT model to be of vital importance to helping humans lead meaningful lives, have been neglected in mediational studies due to a lack of a sufficient instrument to measure such behavior. The PVQ and VLQ are excellent clinical tools for values clarification as they help clients identify valued domains, inconsistencies in values and behavior, and goals for committed action. However, they are somewhat cumbersome for research purposes, and they examine values within given domains and not valuing behavior more broadly. In addition, the PVQ and VLQ have some psychometric weaknesses, including internal consistency reliability coefficients below those which are generally considered suitable for research purposes (DeVellis, 2003).

Current Project and Rationale

Given the theoretical and initial empirical support for the importance of values to psychological well-being as well as the need to evaluate valuing behavior as an important outcome measure of second order change in ACT, the purpose of the present study was the psychometric validation of a research-friendly measure of flexible valuing. Such a measure, the Meta-Valuing Measure, was developed as a self-report measure of verbal behavior consistent with freely choosing life directions, or augmenting (MVM).

The original item pool for the MVM was generated through a review of the valuing literature, clinical experience, and consultation with experts in the field of acceptance and commitment therapy. The MVM consists of 75 statements including, “I have considered what I want my life to be about” and “I choose to do what is important to me.” Respondents indicate on a 6-point Likert-like scale whether they *strongly disagree*, *moderately disagree*, *mildly disagree*, *mildly agree*, *moderately agree*, or *strongly agree* with each statement. The items are designed to measure valuing as a general process (choosing what one wants one’s life to be about), whole life valuing (ongoing valuing in context), and freedom/flexibility in valuing (freely choosing as opposed to valuing out of pliance).

A classic approach to psychological measurement and scale development was applied in gathering psychometric data on the MVM (DeVellis, 2003; Nunnally & Bernstein, 1994). Meta-valuing, or flexible valuing (i.e., freely chosen valuing behavior in a context, across domains), can be considered a latent construct because it is not readily observable; while it is behavior (the process of verbally constructing a future), it is often covert behavior. It can be measured to the extent that people can report their own covert behavior and/or overt behaviors demonstrating the following of verbally-constructed rules. Item scores would be expected to increase with increases in meta-valuing behavior.

Exploratory factor analysis was used to determine if the items of the MVM represent the effect of a single latent variable or multiple underlying constructs. Exploratory factor analysis was employed because flexible valuing is a relatively new concept to measurement, and it was unclear what if any subscales / components there

may be. In addition, the internal consistency reliability of the MVM items was assessed. Convergent and discriminant construct validity were also evaluated. Specifically, the MVM was expected to correlate positively with other ACT-consistent values measures. In addition, from an ACT perspective, mindful awareness of thoughts, feelings, bodily sensations, and experiences will facilitate flexible valuing behavior; hence, the MVM was expected to be positively correlated with, but distinct from, mindfulness skills. Given the theoretical importance ascribed to values across domains of psychology to psychological well-being, the MVM was expected to be positively correlated with, but distinct from, life satisfaction and positive affect and to negatively correlate with psychological symptoms and with experiential avoidance. The MVM was expected to be distinct from social desirability.

Research Questions

1. An exploratory factor analysis of the items of the MVM was expected to be useful in determining the number of constructs that underlie those items.
2. The MVM and subscales that emerged through the exploratory factor analysis were expected to demonstrate very good internal consistency reliability (i.e., $\alpha = .80-.90$, as per DeVellis, 2003).
3. The MVM was expected to demonstrate adequate construct validity as a measure of meta-, or flexible, valuing.
 - a. Meta-valuing as measured by the MVM was expected to be positively correlated with valuing, mindfulness, positive affect, and life satisfaction.

- b. Meta-valuing as measured by the MVM was expected to be negatively correlated with experiential avoidance and psychological symptoms, including anxiety and depression.
- c. Meta-valuing was expected to be more highly correlated with other measures of valuing than with measures of mindfulness and positive affect.
- d. Meta-valuing as measured by the MVM was not expected to be correlated with social desirability.

CHAPTER 2

METHOD

Participants

The current study utilized data from 532 undergraduate students at the University of North Texas (UNT) who participated in a larger, ongoing study of acceptance and commitment therapy (ACT) process variables. Participants who had completed a meta-valuing measure (MVM) in the study by May 2009 were included. Participants were recruited from the UNT Department of Psychology Research Participation Pool (the SONA system). Through this system, participants volunteered for the study and were awarded 4 extra credit points for their participation (1 point for every half hour of participation). All participants in the larger study were required to be at least 18 years old, and this was the only exclusionary factor in participation. Participants ranged in age from 18-53 years old ($M = 21$, $SD = 3.5$); 65.8% were female (350) and 32.9% were male (175); 7 participants (1.3%) did not identify their gender. In terms of ethnicity, 62.4% of participants were European American (332), 13.2% of participants were African American (70), 10.5% of participants were Hispanic American (56), 5.1% of participants were biracial (27), 4.5% of participants were Asian American (24), 3% of participants identified themselves as of "other" ethnicity (16), 0.6% of participants were Native American (3), and 0.2% of participants were of Middle Eastern decent (1). Three individuals (0.6%) did not identify their ethnic background. Numerous participants were freshmen (33.6%, 179); 26.3 % (140) were sophomores, 21.4 % (114) were juniors, 16.4% (87) were seniors, and 12 individuals did not identify their classification. In terms of marital status, 87.2% of participants (464) identified themselves as single/never

married, 6.4% (34) as cohabitating, 4.3% (23) as married, 0.9% (5) as divorced, and 1.1% (6) did not specify their marital status. The median yearly household income category reported by participants was \$50,000-\$60,000; yearly income categories reported ranged from less than \$20,000 to over \$200,000. 31.2% of participants (166) reported that they had attended some form of mental health counseling, and the median length of time in counseling reported was 1-3 months. Most participants (69%, or 367) identified their religion as Christianity, with the median frequency of religious service attendance being 1-2 times per year.

Measures

Demographics Questionnaire

All participants completed a “Demographics Form” (see Appendix). Information from this form was used to obtain participant gender, age, income, education level, religious practices, and history of mental health treatment. Such information was used to evaluate any demographic differences between those who completed or did not complete the study. In addition, demographic variables were explored as to their relationships with scores on the MVM as part of the validation study.

Valued Living Questionnaire (VLQ; Wilson & Groom, 2002)

The VLQ was administered to participants to assess valued living across 10 domains, e.g., Family, Spirituality, Parenting. The VLQ is a self-report measure designed for use with adults, and it consists of 20 items. The first 10 items ask respondents to rate the importance of each of the 10 domains on a scale from 1-10,

with 1 indicating the domain is not at all important and 10 indicating that the domain is extremely important. The next 10 items require respondents to indicate on a scale from 1-10 how consistently they have been living during the past week with respect to their values in each domain (from *not at all consistent with my value* to *completely consistent with my value*). The VLQ yields a Total Importance score and a Total Consistency score, as well as a Valued Living composite (Wilson, Sandoz, Kitchens, & Roberts, 2008). Scores on the Valued Living composite range from 1-100 and measure valued living, or the extent to which one is contacting one's values in everyday life.

The VLQ is considered a useful clinical tool. In the clinical context of ACT, discrepancies between Importance and Consistency scores are examined with clients. Theoretically, such discrepancies are sources of distress, and they are used to help determine domains to target for interventions such as exposure and behavioral activation (Wilson & Murrell, 2004). In a research context, the VLQ Valued Living composite has been used as an overall measure of the extent of valued living (Wilson et al., 2008), and it is this composite was used in the proposed study.

The VLQ has adequate, but not strong, evidence support its psychometric properties. These psychometric properties were evaluated using two samples of undergraduates at a southern university ($n = 76$ and $n = 338$; Wilson et al., 2008). The majority of participants were European American females. Wilson and colleagues report internal consistency reliability coefficients of $\alpha = .74$ and $\alpha = .77$ for the composite score for each sample, respectively. These values are within the respectable range, although not within the range considered optimal for research (DeVellis, 2003). In addition, the smaller sample was used to evaluate test-retest reliability. Participants completed the

VLQ once and again 1-2 weeks later. Scores on the VLQ were shown to be stable over this period of time, with an ICC = .75 (Wilson et al., 2008). The larger sample was used to evaluate the construct validity of the VLQ. Evidence for convergent validity was found; the VLQ composite score was significantly positively correlated with measures of social functioning ($r = .13$), vitality ($r = .27$), and mental health ($r = .23$). The VLQ has also been shown to be negatively correlated with measures of psychological distress (Wilson et al., 2008). In the current sample, internal consistency reliability was more optimal than previously reported with coefficient $\alpha = .84$ for VLQ Importance and .86 for VLQ Consistency ($N = 505$).

Personal Values Questionnaire (PVQ; Blackledge & Ciarocchi, 2006)

The PVQ was administered to participants to assess valued actions within 9 values domains (e.g., Family Relationships, Friendships, Work/Career) as well as the form of rule-governed behavior reflected by those actions. The PVQ is a self-report measure designed for use with adults. It is intended to measure values in an ACT-consistent manner, as “unilateral actions that are likely to lead to increased vitality, meaning, and purpose—not static end states that appear implicitly out of one’s control” (Blackledge, 2005). Respondents are asked to identify valued actions in a free response format across the 9 domains. Once they have identified values in a given domain, respondents are asked to respond to 5 statements regarding the type of rule-governed behavior associated with the valued actions including plying, avoidant tracking, and augmenting. Respondents indicate their responses to these statements on a 5-point scale from 1, *not at all for this reason*, to 5, *entirely for this reason*. Additional items ask

respondents to rate the importance of and success they have had in living the given value. Subtracting the sum of the PVQ items assessing pliance and avoidant tracking from the sum of those items assessing augmenting yields a measure of values purity, that is, the extent to which valuing behavior is freely chosen. It is this measure of values purity that was used in the current study.

The PVQ was adapted from Kennon Sheldon's Personal Strivings measure (Blackledge, Spencer, & Ciarocchi, 2006; Sheldon & Elliot, 1999). Two versions were created: the PVQ and the Social Values Survey (SVS), a shortened form assessing values in only the social, family, and couples relationship domains. Data on the psychometric properties of the PVQ is limited. These properties were evaluated using the SVS with a sample of 99 undergraduates at the University of Wollongong in New South Wales, Australia (Blackledge, et al., 2006). An internal consistency reliability coefficient of $\alpha = .76$ was obtained. On the items assessing valued actions as augmentals, scores were significantly negatively correlated with psychological distress as measured by the Brief Symptom Inventory® (BSI®, assessment tool, Derogatis, 1993, NCS Assessments™, NCS Pearson, Inc., Minneapolis, MN) and significantly positively correlated with psychological flexibility as measured by the Acceptance and Action Questionnaire (AAQ-II, Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, et al., 2005) and with life satisfaction as measured by the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985). In the current sample, analyses yielded an internal consistency reliability coefficient $\alpha = .93$ for the PVQ ($N = 489$).

Meta-Valuing Measure (MVM)

The MVM was administered to participants in the present study in order to validate this new self-report measure. It was designed to assess flexible valuing in adults independent of specific domain. Higher scores were intended to indicate greater flexibility in valuing. The original item pool for the MVM was generated through a review of the valuing literature, clinical experience, and consultation with experts in the field of acceptance and commitment therapy. The initial item pool consisted of 75 statements answered on a 6-point Likert-like scale; respondents indicate whether they *strongly disagree*, *moderately disagree*, *mildly disagree*, *mildly agree*, *moderately agree*, or *strongly agree* with each statement. Having numerous response options was intended to allow for a shorter scale without sacrificing variability (DeVellis, 2003), and the developers intentionally did not include a neutral middle point in the response categories to prevent equivocal responding. The item pool was 3-4 times as large as it was ultimately intended to be. It was hoped that, through the validation process, the number of items will be reduced to facilitate ease of use of the MVM for clinical and research purposes. In addition to the 75 statements, the Meta-Valuing Measure also contains two free response questions which ask respondents how they define “values” and what they would choose to have their lives be about. Qualitative analysis of the free response items will be addressed in subsequent research.

The MVM items were intended to assess valuing as a general process (e.g., “I think about my purpose in life.”), whole life valuing (ongoing valuing in context; e.g., “I have many areas of my life that are interconnected.”), and freedom/flexibility in valuing (e.g., “I can have priorities that are different from what others want me to do.”).

However, as it was unclear which areas of flexible valuing the MVM items may assess, an exploratory factor analysis was conducted as part of the current study. In addition, internal consistency reliability and construct validity data were collected and reported for the MVM in the current study.

Acceptance and Action Questionnaire
(AAQ-II; Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, et al., 2005)

The AAQ-II was administered to participants to assess experiential avoidance. The AAQ-II is a 10-item self-report measure designed for use with adults, and it can be scored to reflect levels of acceptance or experiential avoidance (Bond et al., 2005). Each item is rated by respondents on a 7-point scale from 1, *never true* to 7, *always true*. Total scores range from 10-70, and for the current study higher scores indicate greater experiential avoidance; low scores reflect greater acceptance.

The AAQ-II has adequate evidence supporting its psychometric properties. These properties were assessed with a total sample of 3,280 participants from a variety of subsamples, including university students, persons seeking treatment for substance abuse, and financial services workers (Bond et al., 2005). With regard to internal consistency reliability, Cronbach's alpha for the total sample was .83. Test-retest reliability for the substance abuse subsample after a period of three months was adequate at .80 (Bond et al., 2005). In addition, the AAQ-II has adequate construct validity. With regard to convergent validity, Bond and colleagues (2005) found that the AAQ-II (scored with higher scores reflecting greater acceptance) was significantly negatively correlated with a measure of thought suppression (the White Bear Suppression Inventory, WBSI; Wegner & Zanakos, 1994) with $r = -.60$, $p < .01$. With

regard to discriminant validity, the AAQ-II was not correlated with age or gender. In addition, as ACT and its underlying theory, RFT, would suggest, scores on the AAQ-II are significantly negatively correlated with various measures of psychopathology including the SCL-90-R®, Global Symptom Index (Symptom Checklist-90-R®, assessment tool, Derogatis, (1994), Pearson Assessments™, NCS Pearson, Inc., Minneapolis, MN; $r = -.65, p < .01$) and the BDI-II® (Beck Depression Inventory-II®, assessment tool, Beck, Steer, & Brown, (1996), the Psychology Corporation®, Harcourt, Brace, & Company, San Antonio, TX); $r = -.71, p < .01$) (Bond et al., 2005). In the current sample, analyses with the AAQ yielded an internal consistency reliability coefficient $\alpha = .86$ ($N = 507$).

Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995)

The DASS was administered to participants to assess overall levels of psychological distress as well as specific levels of symptoms of depression and anxiety. The DASS is a 42-item self-report questionnaire designed for use with adults that assesses stress, depression, and anxiety. Respondents are asked to rate the applicability of each item during the past week on a four-point, Likert-like scale from *did not apply to me at all* to *applied to me very much, or most of the time*. The DASS yields a total scale score, as well as a total score for each subscale: depression (DASS-D), anxiety (DASS-A), and stress (DASS-S). Total scale scores range from 0-126, with higher scores indicating greater psychological distress.

The DASS has adequate evidence supporting its psychometric properties. These properties were assessed in a large, nonclinical, community sample ($N = 1,771$) drawn

from service organizations and community centers in the United Kingdom (Crawford & Henry, 2003). These authors report internal consistency reliability coefficients of $\alpha = .96$, $.95$, $.90$, and $.93$ for the total, depression, anxiety, and stress scales, respectively.). In the current sample, analyses with the DASS yielded an internal consistency reliability coefficient $\alpha = .97$ for the total scale, $\alpha = .95$ for the depression scale, $\alpha = .91$ for the anxiety scale, and $\alpha = .93$ for the stress scale ($N = 496$).

The DASS also has adequate construct validity. With regard to convergent validity, Crawford and Henry (2003) found that the DASS depression scale was significantly correlated with the depression items of the Personal Disturbance Scale (sAD; Bedford & Foulds, 1978) with $r = .78$, $p < .001$. Similarly the DASS anxiety scale was significantly positively correlated with the anxiety items of this same scale, with $r = .72$, $p < .001$. With regard to discriminant validity, the authors note that the DASS depression was more highly correlated with measures of depression on comparison scales than with measures of anxiety and that the DASS anxiety scale was more highly correlated with other anxiety scales than with depression measures (Crawford & Henry, 2003).

Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004)

The KIMS was administered to participants to assess levels of mindfulness skills. The KIMS is designed to measure four mindfulness skills in adults: describing, observing, accepting without judgment, and acting with awareness (Baer et al., 2004). It consists of 39 statements about behaviors rated by respondents on a 5-point scale from *never or very rarely true* for oneself to *very often or always true* for oneself. Total scores

on the KIMS range from 39-195, with higher scores suggesting higher levels of mindfulness skills.

The KIMS has adequate evidence supporting its psychometric properties. These psychometric properties were assessed using two samples of undergraduate students (total $n = 420$) and a smaller sample of adult outpatients diagnosed with borderline personality disorder ($n = 26$) (Baer et al., 2004). Additional data on the KIMS was obtained in a subsequent study with 881 undergraduate students (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). In both of these studies the majority of participants were European American females. With regard to internal consistency reliability, Baer and colleagues (2004) obtained alpha coefficients for the four subscales (Observe, Describe, Act with Awareness, and Accept Without Judgment) of .91, .84, .83, and .87 respectively, for the first sample and .85, .86, .76, and .87 respectively, for the second sample. Test-retest reliability was assessed using data from 49 participants who completed the KIMS once and then again approximately two weeks later (Baer et al., 2004); correlations for the four subscales were .65, .81, .86, and .83, respectively, indicating adequate stability over time.

With regard to construct validity, the KIMS was found in the aforementioned studies to be positively correlated with other measures of mindfulness (Baer et al., 2006), e.g., the Mindfulness Attention Awareness Scale (Brown & Ryan, 2003) ($r = .51$, $p < .01$) and the Freiburg Mindfulness Inventory (Buchheld, Grossman, & Walach, 2001) ($r = .57$, $p < .01$). This second study also found that mindfulness as measured by the KIMS is positively correlated with self-compassion (as per the Self-Compassion Scale; Neff, 2003) ($r = .49$, $p < .01$) and with openness to experience (NEO-FFI™, NEO-Five

Factor Inventory™, assessment tool, Costa & McCrae (1992), PAR, Inc., Lutz, FL) ($r = .47, p < .01$) (Baer et al., 2006). Mindfulness as measured by the KIMS is also negatively correlated with psychological symptoms (as per BSI-GSI; Derogatis, 1993) ($r = -.42, p < .01$), experiential avoidance (as per AAQ) ($r = -.44, p < .01$), and thought suppression (as per White Bear Suppression Inventory; Wegner & Zanakor, 1994) ($r = -.42, p < .01$) (Baer et al., 2006). In addition, individuals diagnosed with borderline personality disorder have significantly lower scores on the KIMS than do student samples, supporting the notion that mindfulness is related to mental health (Baer et al., 2004). For the current study sample, analyses with the KIMS yielded an internal consistency reliability coefficient $\alpha = .77$ for the total scale ($N = 504$).

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988)

The PANAS was administered to participants to assess positive and negative affect, two factors of self-rated mood (Watson et al., 1988). The authors' research suggests that these two dimensions are not opposites; rather they represent independent dimensions. High positive affect (PA) is characterized by a state of "high energy, full concentration, and pleasurable engagement" (p. 1063), while low PA reflects low energy and feelings of sadness (Watson et al., 1988). High Negative Affect (NA) is characterized by fear, anger, guilt, disgust and other negative mood states, while low NA reflects a state of feeling serene and calm (Watson et al., 1988). The PANAS consists of 20 items: 10 items measure PA and 10 items measure NA. Respondents are asked to rate to what extent they are currently feeling a certain way on

a 5–point scale from “Very slightly or not at all” to “Extremely.” Total scores on each dimension range from 10-50.

The PANAS has adequate evidence supporting its psychometric properties. These properties were evaluated with a total sample of over 4,000 participants, the majority of whom were college undergraduates from Southern Methodist University (Watson et al., 1988). The PANAS can be used with varying time instructions (e.g., present moment, past week, past year, etc.) (Watson et al., 1988). Psychometric data for the present moment instruction which was used in the current study was collected on a subsample of 660 participants. Internal consistency reliability for this sample was $\alpha = .89$ for PA and $\alpha = .85$ for NA (Watson et al., 1988). Test-retest evaluations found no significant differences in present moment PA or NA scores after a period of 8 weeks (Watson et al., 1988). With regard to construct validity, Watson and colleagues (1988) found the NA dimension of the PANAS to be significantly positively correlated with measures of general psychological distress, depression, and state anxiety. The results suggest that the NA dimension is distinct from depression, and more closely resembles a measure of general psychological distress (Watson et al., 1988). The PA dimension was found to be significantly negatively correlated with measures of depression and state anxiety (Watson et al., 1988). Additional research suggests that the PANAS, particularly the NA scale, is sensitive to changes in internal mood state and external situations (Watson, 1988). In the current study, analyses with the PANAS scales yielded an internal consistency reliability coefficient $\alpha = .83$ for Positive Affect and $\alpha = .80$ for negative affect ($N = 500$).

Quality of Life Inventory®
(QOLI® Assessment Tool, NCS Pearson, Inc., Minneapolis, MN)

The QOLI was administered to participants to assess life satisfaction; that is, the extent to which a person perceives his/her goals, wishes, and needs in life are fulfilled (Frisch, 1994). From this perspective, gaps between what a person has and what he/she would like to have in valued life areas contribute to dissatisfaction. The QOLI is designed to measure positive mental health, and it assesses the importance of and satisfaction with 16 life areas: health, self-esteem, goals-and-values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighborhood, and community. Respondents indicate how important each area is to their happiness on a scale from 0-2, from *not important* to *extremely important*, and how satisfied they are with each area on a scale from -3 to +3, from *very dissatisfied* to *very satisfied*. The QOLI yields *T*-scores, with higher scores suggesting greater freedom from psychological distress and greater psychological resources due to having one's most important goals, wishes, and needs fulfilled.

The QOLI has adequate evidence supporting its psychometric properties. These properties were assessed with a nonclinical population from 12 U.S. states; 65% of these participants were females, and African American and Hispanic participants were slightly overrepresented (Frisch, 1994). Internal consistency reliability for weighted satisfaction ratings (used to derive *T*-scores) for the standardization sample was $\alpha = .79$. Test-retest reliability for a subsample of 55 participants after approximately two weeks was $r = .73$ at $p < .001$. With respect to convergent construct validity, scores on the QOLI are significantly positively correlated both with the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), $r = .56$ at $p < .001$ and with the Quality of

Life Index (Ferrans & Powers, 1985) $r = .75, p < .001$. Discriminant validity was less clearly demonstrated as the QOLI was positively correlated with the Marlowe-Crowne Social Desirability Scale ($r = .25, p < .001$), although Frisch (1994) reports that a socially desirable response set accounted for only 6% of the variance of QOLI scores for the validation sample. A study using the original 17-item QOLI, which is highly correlated with the 16-item version, found that QOLI scores for a small sample of individuals with depression increased, as depressive symptoms decreased, following treatment (Frisch, 1992). This finding lends support to the contention that higher QOLI scores suggest greater freedom from psychological distress. In the current study, analyses with the QOLI yielded an internal consistency reliability coefficient $\alpha = .84$ ($N = 60$).

Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960)

The M-C SDS was administered to participants as a measure of socially desirable responding. The items of the M-C SDS were designed to assess a tendency to endorse culturally sanctioned behaviors that are of low probable occurrence (Crowne & Marlowe, 1960). The M-C SDS consists of 33 statements about behaviors; respondents indicate whether each statement is true or false as it pertains to him/her. Total scores on the M-C SDS range from 0-33, with higher scores indicating a greater tendency to respond in a socially desirable manner (a response bias).

The M-C SDS has adequate evidence supporting its psychometric properties. These properties were evaluated using various subsamples from a total of 120 undergraduate students with a mean age of 24.4 from Ohio State University (Crowne & Marlowe, 1960). With regard to internal consistency reliability, the authors report a K-R

20 coefficient of .88 for the 33-item scale. A test-retest correlation of .89 was obtained after a one-month interval. With regard to construct validity, Crowne and Marlowe (1960) found that the M-C SDS is positively correlated with another measure of social desirability, $r = .35$ (the Edwards Social Desirability Scale; Edwards, 1957) and with the L scale of the MMPI (Minnesota Multiphasic Personality Inventory), $r = .54$. In addition, the M-C SDS is negatively correlated with the F scale of the MMPI and with most of the MMPI clinical scales (Crowne & Marlowe, 1960). In the current study, analyses with the M-C SDS yielded an internal consistency reliability coefficient $\alpha = .75$ ($N = 492$).

Procedure

The current study was part of a larger study of ACT process variables conducted online through the UNT Department of Psychology Research Participation SONA system. Through this online system, undergraduates enrolled in psychology courses can view and sign up to participate in research studies for extra credit. The study was posted in the SONA system, and an email was sent to department course instructors so that they could inform their students of the extra credit opportunity afforded by the study. Once participants signed up for the study, they were able to access it online through a link from the SONA system. Participants first completed an electronic version of the study's research consent form. Contact information for study personnel were provided so that they could answer any questions participants had regarding the study and the research consent form. Participants were instructed to carefully read the material and indicate agreement. Once participants consented, they completed the study measures.

The first page participants saw was an instruction page, thanking them for their participation and encouraging them to read all questions carefully and answer honestly. Participants then completed the demographics questionnaire, followed by the MVM, and then all other study questionnaires in random order. The study took approximately two hours to complete, and participants received 4 extra credit points for their participation. Data from the study was collected and scored using a custom software program; data is stored on a secure server, and access is password protected.

CHAPTER 3

RESULTS

Data Preparation and Preliminary Analyses

For each participant, data on each measure of interest was inspected for missing items. Because the psychometric properties of the Meta-Valuing Measure (MVM) were not known, MVM's with any missing items were removed from analyses. For any given participant, other measures with more than 20% of the total number of items missing were removed from analyses via listwise deletion. For other measures with fewer than 20% of the total number of items missing, the missing values were replaced with the individual's mean item score for that scale prior to analyses, as this is a conservative method of estimating missing data (Tabachnick & Fidell, 2007).

Demographic differences between participants who completed the study and those who began the study, but did not complete it, were assessed using chi-square analyses and *t*-tests. 532 participants completed the study (92.7%) and 42 (7.3%) began, but did not complete the study. No significant differences were noted between completers and non-completers with respect to gender, ethnicity, college classification, marital status, counseling history, or religious preferences. Completers ($M = 20.6$ years, $SD = 3.51$) were significantly older than noncompleters ($M = 19.5$ years, $SD = 1.06$), ($t(134) = 5.29, p < .001$), and they had significantly higher income ($t(525) = 7.36, p < .001$). Neither age nor income was significantly correlated ($r = .04, p = .34; r = -.002, p = .96$) with MVM scores (the primary variable of interest).

Because the sample size was adequate to do so, the sample was randomly divided into two equal subsamples of $n = 266$ each in order to replicate findings from the

full sample. *T*-tests and chi-square analyses revealed no significant demographic differences between the two groups. In addition, for a random subsample of 60 participants, Quality of Life Inventory® data was analyzed (QOLI®, assessment tool, Frisch (1994), Pearson Assessments™, NCS Pearson, Inc., Minneapolis, MN). No significant differences were noted between the QOLI group and the rest of the sample with respect to gender, income, ethnicity, college classification, marital status, counseling history, or religious preferences. The QOLI group ($M = 19.81$ years, $SD = 1.72$) were significantly younger than the rest of the sample ($M = 20.75$ years, $SD = 3.67$), ($t(141) = 3.33, p = .001$).

Prior to conducting analyses, assumptions corresponding to each analysis were assessed through graphic exploration of the data and/or through statistical analysis. For the exploratory factor analysis, because statistical inference was not used to determine the number of factors, assumptions regarding variable distributions do not apply (Tabachnick & Fidell, 2007); in addition, principal axis factoring is robust to violations of normality assumptions (Costello & Osborne, 2005). However, to strengthen the solution, the data were inspected for multivariate outliers using casewise diagnostics and Mahalanobis distance. Casewise diagnostics revealed no multivariate outliers; however, X^2 evaluations of Mahalanobis distance revealed two possible outliers. Further inspection of the cases suggested that, while these participants' responses to all items were within the range of possible scores for the measure, the response patterns suggested random responding. These two cases were removed from analyses. Multicollinearity and singularity were not present as the values for the determinant of R and eigenvalues associated with the factors did not approach 0. In addition, squared

multiple correlation (SMC) values were not dangerously close to 1; the largest SMC was .790. The factorability of R was assessed through an initial inspection of correlation values (there were many in excess of .30), through SPSS® significance tests of correlations in the correlation matrix (numerous pairs were significant), through an inspection of the anti-image matrix (values of the off-diagonal elements were small), and through the use of Kaiser's measure of sample adequacy (values were greater than .6). Hence, R was factorable.

For correlation analyses, the assumptions of linearity, homoscedasticity, and bivariate normality were evaluated using scatterplots and values for skewness and kurtosis. The distributions of a few scales were non-normal, and in these cases, data transformations were applied. Specifically, the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) total scale and the DASS depression scale were positively skewed and square root transformations were applied to the data. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) Negative Affect scale was also positively skewed and a logarithmic transformation was applied. In addition, the Valued Living Questionnaire (VLQ; Wilson & Groom, 2002) Importance scale was negatively skewed; this variable was reflected, a square rooted transformation was applied, and then these scores were re-reflected to maintain the appropriate directionality of the scores.

Analysis of Research Question 1

An initial exploratory factor analysis (EFA) using the 75 items of the MVM as variables and the entire sample of 530 participants was conducted using SPSS®

FACTOR to determine the number of constructs underlying those items. Principal axis factoring with varimax rotation was performed. An initial analysis was used to test assumptions, to assess the factorability of R , and to estimate the potential number of factors. The results of assumption testing and factorability estimates are provided above. In terms of number of factors, while in the initial analysis 15 factors had eigenvalues greater than 1, inspection of the scree plot suggested 3 factors, and 3 factors were initially predicted. In addition, the use of eigenvalues to determine the number of factors to retain is considered to be only minimally accurate (Velicer & Jackson, 1990). A suggested best practice is to conduct analyses requesting the extraction of the number of factors within a reasonable range of that suggested by the scree plot (Costello & Osborne, 2005). As such, identical analyses were conducted requesting 2, 3, 4, and 5 factors be extracted to assess the ideal solution.

Upon inspection of factor loadings, only Factors 1, 2, and 3 contained items with loadings greater than or equal to .45 (the pre-determined cut-off; Tabachnick & Fidell, 2007). The 3-factor solution was retained, and these 3 factors account for 41.62% of the variance in the variables. The matrix of correlation coefficients among the variables can be found in Table 1. The matrix of unrotated factor loadings is presented in Table 2 and the communalities for the items are shown in Table 3. The scree plot of eigenvalues suggesting a 3-factor solution can be found in Figure 1. A direct oblimin oblique rotation was used to assess the level of correlation among the three factors. Because no factor correlations in the factor correlation matrix exceeded .32 (see Table 4), results of the simpler, initial orthogonal varimax rotation were retained. After extraction of three factors using principal axis factoring and varimax rotation, 26 of the 75 items either did

not load on any factor or were cross-loading items. These nonloading and cross-loading items were removed prior to interpretation of factors, as is typical in EFA (Netermeyer, Bearden, & Sharma, 1996). The loading matrix with the items retained is presented in Table 5, with items ordered by factor to increase interpretability.

As can be seen in Table 5, Factor 1 consists of 26 items, whose content reflects general valuing behavior (i.e., engaging in the verbal process of generating formative augmentals). This scale of the MVM appears to be assessing the process of choosing and acting in accord with a life direction and will be called Valuing. Factor 2 consists of 20 items, which when reverse-scored, seem to reflect the absence of values distress and conflicts; it will be referred to as Freedom from Values Conflict. Factor 3 consists of 3 items, which seem to directly tap inflexibility/rigidity with respect to the form of valuing behavior; these items are reversed-scored and reflect Flexibility in Valuing.

The sample was split in half and the analyses were repeated in an attempt to replicate the findings of the final, full sample EFA. Subsamples 1 and 2 consisted of 265 participants each. Because these subsamples were small, only the 49 items retained from the final 3-factor solution were used in these analyses, in order to increase the number of cases per variable. With both subsamples, an EFA using principal axis factoring extracting 3 factors and orthogonal varimax rotation was conducted. The rotated factor loadings for the items for each subsample can be found in Table 6. In Subsample 1, 3 factors accounted for 41.61% of the variance and in Subsample 2, they accounted for 42.90% of the variance. The solution from the initial full sample EFA was largely replicated in analyses with the two smaller subsamples. In Subsample 1, all items loaded on the 3 factors consistently with the full sample solution, except Items 1

and 58, which were cross-loading items in this subsample. In Subsample 2, the pattern of item factor loadings for the 3 factors was identical to the solution in the full sample. It is of note that Factor 3, with only three items, was found consistently in the 2 smaller subsamples. This replication provides some reassurance for concerns about its reliability given the small number of items. Items 1 and 58 were cross-loading in one of the subsamples and also performed poorly in subsequent reliability analyses; therefore, they were ultimately removed from the measure.

Analysis of Research Question 2

Because the exploratory factor analyses revealed the presence of 3 orthogonal factors, internal consistency reliability was examined by calculating coefficient alpha using SPSS® RELIABILITY for each MVM scale. Subsample 1 ($n = 265$) was used to calculate alpha and to modify scale length; Subsample 2 ($n = 265$) was used to replicate alpha with the remaining items. For the 26 items of the Valuing scale, means and standard deviations can be found in Table 7. Coefficient α was .94, and the covariance matrix can be found in Table 8. The mean interitem correlation was .38. Item-total and interitem correlations were examined, and those items with the lowest corrected item-total correlations (e.g., those less than .50) and the lowest communality (e.g., .40 or less) as well as those with lower-than-average interitem correlations (for MVM Valuing those less than .38) were eliminated (Clark & Watson, 1995; DeVellis, 2003). In addition, redundant items that could be removed without a significant resulting decrease in α were removed to decrease scale length. This resulted in a 15-item Valuing scale

with $\alpha = .92$. The items retained are starred in Table 7. These results were replicated with these 15 items using Subsample 2, in which coefficient α was .93.

For the 20 items of the Freedom from Values Conflict scale, means and standard deviations can be found in Table 9. Coefficient α was .92, and the covariance matrix can be found in Table 10. The mean interitem correlation was .36. Item-total and interitem correlations were again examined, and those items with the corrected item-total correlations less than .50 and the lowest communality (e.g., .40 or less) as well as those with lower-than-average interitem correlations (for MVM Freedom from Values Conflict those less than .36) were eliminated (Clark & Watson, 1995; DeVellis, 2003). Redundant items that could be removed without a significant decrease in α were also removed to decrease scale length (DeVellis, 2003). The items retained are starred in Table 9. This resulted in a 12-item Freedom from Values Conflict scale with $\alpha = .90$. These results were replicated using Subsample 2, and coefficient α remained .90.

For the 3 items of the Flexibility in Valuing scale, means and standard deviations can be found in Table 11. Coefficient α was .73, and the covariance matrix can be found in Table 12. The mean interitem correlation was .48. These results were replicated in Subsample 2; coefficient α was also .73.

Analysis of Research Question 3

The construct validity of each MVM scale was assessed using correlational analyses following Nunnally and Bernstein's (1994) suggestions for construct validation. Mean scores and standard deviations for the sample on the measures of interest are reported in Table 13. Table 14 presents the correlation matrix of the relationships

among MVM Valuing, MVM Freedom from Values Conflict, and MVM Flexibility in Valuing and the constructs of interest (valuing, mindfulness, positive and negative affect, life satisfaction, experiential avoidance, general distress, depression, anxiety, and social desirability). Coefficient α for each measure is also shown in the table.

As expected, scores on the MVM Valuing scale were significantly positively correlated with scores on other measures of valuing, specifically, with the Valued Living Questionnaire (VLQ) composite score ($r = .19, p < .001$), VLQ Importance score ($r = .24, p < .001$), VLQ Consistency score ($r = .12, p < .05$), and the Personal Values Questionnaire (PVQ; Blackledge & Ciarocchi, 2006) values purity score ($r = .39, p < .001$). MVM Valuing scores were also significantly positively correlated with scores on the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004; $r = .30, p < .001$) and with scores on a measure of positive affect (PANAS-PA; $r = .12, p < .01$). Also as expected, MVM Valuing scores were significantly negatively correlated with experiential avoidance (AAQ-II; Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, et al., 2005; $r = -.21, p < .001$), general distress (DASS total scores; $r = -.15, p < .01$), DASS depression scores ($r = -.21, p < .001$), and DASS anxiety scores ($r = -.17, p < .001$). MVM Valuing scale scores were not significantly correlated with negative affect (PANAS-NA; $r = -.02, p = .35$), life satisfaction as measured by the Quality of Life Inventory (QOLI; $r = .07, p = .29$), or social desirability (Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960; $r = .02, p = .32$).

Similarly, scores on the MVM Freedom from Values Conflict scale were significantly positively correlated as expected with scores on other measures of valuing, specifically, with VLQ composite scores ($r = .10, p < .05$), VLQ Consistency score ($r =$

.15, $p < .01$), and PVQ values purity scores ($r = .11$, $p < .05$). MVM Freedom from Values Conflict scores were also significantly positively correlated with scores on the QOLI ($r = .32$, $p < .01$) and on the KIMS ($r = .35$, $p < .001$), but they were also positively correlated with social desirability (M-C SDS; $r = .30$, $p < .001$). However, upon further analysis, a socially desirable response set accounted for only 11% of the variance in MVM Freedom from Values Conflict scores. As expected, MVM Freedom from Values Conflict scores were significantly negatively correlated at $p < .001$ with experiential avoidance (AAQ-II; $r = -.50$), general distress (DASS total; $r = -.42$), negative affect (PANAS-NA; $r = -.22$), DASS depression ($r = -.39$), and DASS anxiety ($r = -.29$). The MVM Freedom from Values Conflict scale was not significantly correlated with positive affect (PANAS-PA; $r = .02$, $p = .38$) or VLQ Importance score ($r = -.01$, $p = .40$).

Unexpectedly, scores on the MVM Flexibility in Valuing scale were significantly negatively correlated with scores on another measure of valuing, the VLQ composite ($r = -.19$, $p < .01$), VLQ Importance score ($r = -.20$, $p < .001$), and VLQ Consistency score ($r = -.14$, $p < .01$) and they were not significantly correlated with scores on the PVQ ($r = .01$, $p = .43$). Scores on MVM Flexibility in Valuing were unexpectedly negatively correlated with positive affect (PANAS-PA; $r = -.23$, $p < .001$), and they were not correlated with mindfulness (KIMS; $r = -.03$, $p = .29$) or quality of life (QOLI; $r = .01$, $p = .48$). MVM Flexibility in Valuing scores were significantly negatively correlated as expected with negative affect (PANAS-NA; $r = -.20$, $p < .001$), experiential avoidance (AAQ-II; $r = -.13$, $p < .01$), and general distress (DASS Total; $r = -.09$, $p < .05$). The MVM Flexibility in Valuing scale was not significantly correlated with depression (DASS depression; $r = -.03$, $p = .25$), anxiety (DASS anxiety; $r = -.07$, $p = .10$), or social

desirability (Marlowe-Crowne; $r = -.06$, $p = .14$). It is likely that the relatively low internal consistency and the brevity of this scale contributed to the unexpected results in construct validity testing. Due to the questionable reliability and validity of this scale, it was excluded from subsequent analyses.

It was expected that the scales of the MVM would be more highly correlated with other measures of valuing than with measures of mindfulness and positive affect. Inspection of the correlation values revealed higher values for correlations of the MVM Valuing scale with PVQ values purity scores than with KIMS scores and scores on a measure of positive affect (PANAS-PA), as well as a higher value for the correlation of MVM Valuing with VLQ scores than with scores on the PANAS-PA. The test for nonindependent r 's using Fisher's z (see Meng, Rosenthal, & Rubin, 1992) revealed that the correlation between MVM Valuing scores and PVQ values purity scores ($r = .39$) was not significantly different from the correlation between MVM Valuing scores and KIMS scores ($r = .30$) ($z = 1.54$, $p = .06$). However, the correlation between MVM Valuing scores and PVQ values purity scores ($r = .39$) was significantly greater than the correlation between MVM Valuing scores and PANAS positive affect scores ($r = .12$) ($z = 4.08$, $p < .001$). The correlation between MVM Valuing scores and VLQ Composite scores ($r = .19$) was not significantly different from the correlation between MVM valuing scores and PANAS-PA scores ($r = .12$) ($z = 1.17$, $p = .121$).

With regard to the MVM Freedom from Values Conflict scale, inspection of correlations revealed larger values for the correlation between this scale and VLQ composite scores and for the correlation between this scale and PVQ values purity scores than between this scale and positive affect scores (PANAS-PA). The test for

nonindependent r 's using Fisher's z revealed that the correlation between MVM Freedom from Values Conflict scores and VLQ composite scores ($r = .10$) was not significantly different from the correlation between MVM Freedom from Values Conflict scores and PANAS-PA scores ($r = .02$) ($z = 1.33, p = .09$). Similarly the correlation between MVM Freedom from Values Conflict scores and PVQ values purity scores ($r = .11$) was also not significantly different from the correlation between MVM Freedom from Values Conflict scores and PANAS-PA scores ($r = .02$) ($z = 1.29, p = .10$).

Demographic characteristics were also examined as to their relationship with the MVM scales. As aforementioned, neither age nor income was related to the MVM scales. With regard to education level, MVM Valuing scores were significantly positively correlated with year in college ($n = 519; r = .09, p < .05$), but this relationship was not found with MVM Freedom from Values Conflict scores ($n = 519; r = .03, p = .54$). There was no significant relationship between either MVM scale and participants' frequency of religious service attendance (for MVM Valuing, $n = 526; r = -.07, p = .12$; for MVM Freedom from Values Conflict, $n = 526; r = .02, p = .62$). T -tests were used to examine any difference in MVM scores between those participants who had ever attended mental health counseling and those who had not. Those who had attended counseling had significantly higher MVM Valuing scores ($M = 4.96, SD = 1.28$) than those who had not ($M = 4.65, SD = 1.38$), $t(342) = 2.45, p < .05$. However, those who had attended counseling had significantly lower MVM Freedom from Values Conflict scores ($M = 39.34, SD = 10.87$) than those who endorsed having never attended counseling ($M = 43.33, SD = 10.85$), $t(320) = -3.92, p < .001$. Duration of mental health counseling was

not related to scores on either MVM scale (for MVM Valuing, $n = 170$; $r = -.02$, $p = .83$;
for MVM Freedom from Values Conflict, $n = 170$; $r = -.14$, $p = .07$).

CHAPTER 4

DISCUSSION

G-d asks no man whether he will accept life. This is not the choice. You must take it. The only question is how.

Henry Ward Beecher

From an acceptance and commitment therapy (ACT) perspective, an answer to “how” is to live life in the service of one’s freely chosen values. Freely choosing a life direction (flexibly valuing) and acting consistently with this direction are core components of this treatment model (see Hayes et al., 1999) and theoretically contribute to a sense of meaning and vitality in life (Strosahl et al., 2004). More specifically, freely verbally constructing a valued future involves generating formative augmentals, or verbal rules that establish previously inexperienced events as important consequences (e.g., developing the rule “finding a cure for cancer is important to me and will be good”; Hayes et al., 1999). Such rules make attaining even small goals that are consistent with the value positively reinforcing (e.g., setting up a research lab, conducting clinical trials for a new cancer-fighting medication), thus contributing to a sense of meaning and purpose, even if one never eradicates cancer. Choosing a future freely is emphasized to prevent pliance or avoidance-based valuing, that is, valuing to gain social approval (or social disdain, in the case of counter-pliance) or valuing to avoid negative consequences (Hayes et al., 1999). The former case is not ideal because valuing would cease to generate meaning in the absence of a social reaction. In the latter case, the behavior would be under aversive control (e.g., “cure cancer, or else!”); behavior under aversive control is less effectively maintained than that which is positively reinforced (Skinner, 1938). It is precisely the positive reinforcement allowed

for by pursuing freely chosen values that is believed to be meaning making (Hayes et al., 1999).

Initial research suggests that values-based action may indeed contribute to psychological well-being (e.g., Adcock et al., 2009; Lundgren et al., 2006; Vowles & McCracken, 2008); however, research efforts in this important treatment outcome area have been stymied by a lack of an efficient measure of such valuing behavior. Hence, the purpose of the current study was to evaluate the psychometric characteristics of a new measure of flexible valuing from an acceptance and commitment therapy (ACT) perspective, the Meta-Valuing Measure (MVM). The results of analyses, limitations of the current study, and clinical implications will be discussed.

Exploratory Factor Analysis and Reliability

The results of exploratory factor analysis (EFA) suggest that in the current sample the items of the MVM represent the effects of 3 latent variables. The 3 factors that emerged in analyses consisted of items whose content seems to reflect Valuing as a general process, Freedom from Values Conflict and distress, and Flexibility in Valuing. These 3 factors were replicated in two equal subsamples, and they accounted for a substantial proportion of the variance in MVM scores (Tabachnick & Fidell, 2007). The MVM was developed to measure valuing as a general process, or whole life valuing (i.e., ongoing valuing in context and freedom/flexibility in valuing). The current results are generally consistent with this intent: the general valuing factor indeed manifested in the EFA, whole life valuing marker items failed to load on any factor but the concept is

captured by the Freedom from Values Conflict scale, and flexibility in valuing emerged as its own factor. The scales are discussed in detail below.

MVM Scales

MVM Valuing Scale

The Valuing scale consists of 15 items with $\alpha = .92$ and $.93$ in the two subsamples, respectively, suggesting very good internal consistency reliability for this scale. These results suggest that this scale is stable and suitable for research and for use with group data (DeVellis, 2003). The Valuing scale consists of items such as “There are things that matter to me,” “I can describe the person I want to be,” and “I have considered what I want my life to be about.” Items such as these seem to be assessing the process of verbally constructing a future, or choosing a life direction (Hayes et al., 1999). Additional items of this scale appear to assess the use of values as guides to action (e.g., “I make choices based on what is important to me”). Generating verbal rules which will serve as formative augmentals would seem to be an essential first step in flexible valuing; that is, choosing to matter (or care about something) facilitates mattering. However, the item content of this scale does not clearly assess the function of valuing and cannot rule out that the valuing behavior is performed in the service of pliance or experiential avoidance. It is of note that this scale was significantly negatively skewed, suggesting that the vast majority of study participants engage in this process of choosing life directions. This is consistent with the findings of Schwartz and colleagues that holding guiding principles as important is universal (Schwartz, 1992; 1994; Schwartz & Sagiv, 1995). However, it is also possible that in a clinical sample, as

compared to the current, healthy student sample, more variability in scores would be seen. This may be particularly the case in samples including individuals experiencing depression, whose learning histories often include events that have made caring aversive (Hayes et al., 1999; Zettle, 2007).

MVM Freedom from Values Conflict Scale

The Freedom from Values Conflict scale, consists of 12 items with $\alpha = .90$ in both subsamples, suggesting very good internal consistency reliability for this scale. These results suggest that this scale is also stable and suitable for research and for use with group data (DeVellis, 2003). The Freedom from Values Conflict scale consists of items such as “I feel like I have to choose between what’s most important to me,” “I have trouble balancing different areas of my life,” and “I feel torn between conflicting goals.” These items are reverse-scored and, based on their content, seem to measure the ability to live consistently with one’s values across context. This sort of “importanting” in the moment, in any given context is thought to buffer against values conflict (Hayes et al., 1999). In addition to freedom from values conflict, the reverse-scored items of this scale also seem to assess freedom from distress regarding values, related to defused valuing (e.g., “When I’m upset, I find myself making decisions that are inconsistent with what is important to me,” and “When I’m upset, I find myself making decisions I regret”). Disagreement with these items suggests the ability to persist in valued choosing even in the face of painful thoughts and feelings. The Freedom from Values Conflict scale also seems to be assessing at least some of the function of valuing, likely the absence of experiential avoidance (e.g., being able to make valued decisions even when

distressed) as well as the ability to matter across context in the face of distress. Such flexible valuing would allow for continued access to values-based reinforcement across time and situation contributing to a sense of meaning and purpose even in the most dire of circumstances, as Frankl observed as possible, even in Auschwitz.

MVM Flexibility in Valuing Scale

Factor 3 consisted of only 3 items; however, this factor was found not only in the initial EFA conducted with the total sample, but it was also found consistently in the two smaller subsamples. That it was reliably found in the smaller subsamples suggests that, although it consists of fewer items than are generally considered necessary for factor retention (Tabachnick & Fidell, 2007; so few variables loading on a factor may be due to chance), this factor warrants further exploration in the current discussion.

The 3 items of the Flexibility in Valuing scale yielded an internal consistency reliability coefficient $\alpha = .73$ in both subsamples, which, while generally considered acceptable, is below that which is considered ideal for research (DeVellis, 2003). It is noteworthy that the mean interitem correlation for the 3 items was .48; developing additional items consistent with this construct would likely do much to improve this scale's reliability. For example, for a 10-item scale to achieve $\alpha = .80$, the mean interitem correlation need only be .29 (DeVellis, 2003). Such additional items should be added to the scale and assessed in future research.

The items of the Flexibility in Valuing Scale were: "I have to do very specific things to show what is important to me," "I must express my values in a specific way," and "I must do specific things to show what is important to me." These items are

reverse-scored; based on their content, agreement with these items would seem to reflect a rigidity to valuing that may reflect pliance or avoidant types of responses, whereas disagreement may reflect freely chosen valued behaviors and flexibility in values expression. On the one hand, theoretically, valuing (generating formative augmentals) and committed action in ACT seek to take advantage of humans' tendency to persist in rule following so that clients persist in valued behavior, even when it is psychologically difficult, so that the positive reinforcement associated with valuing behavior is also available to generate meaning and vitality (Hayes et al., 1995). On the other hand, the intent is not only to specify valued behaviors, but also to persist in these behaviors in a flexible way, so as to allow the benefits of valued living across situation, in any moment (Hayes et al., 1999). For example, flexibly valuing being a good parent may mean having in one's repertoire a variety of behaviors consistent with this value (e.g., asking about a child's feelings as well as setting limits when necessary) where as rigidly following the rule "I want to be a good parent, which means I must only be nice to my children" may actually interfere with effective parenting if it precludes setting limits.

Relationship among MVM Scales and Other Constructs

Results of the current study suggest that the MVM Valuing and Freedom from Values Conflict scales exhibit adequate convergent and discriminant construct validity. The MVM Flexibility scale generally did not exhibit the expected relationships with other constructs. The results of construct validity evaluation are discussed in detail below.

Valuing

As expected, increases in scores on the MVM Valuing and Freedom from Values Conflict scales were associated with increases in scores on the other measures of valuing in the study. They were positively related to both the extent of valued living, as measured by the Valued Living Questionnaire (VLQ; Wilson & Groom, 2002) composite, and the extent to which valuing behavior is freely chosen, as measured by Personal Values Questionnaire (PVQ; Blackledge & Ciarocchi, 2006) values purity. These results suggest that the MVM is tapping both aspects of valuing assessed by these measures. Further analysis with the subscales of the VLQ revealed that MVM Valuing was more strongly related to VLQ Importance than to VLQ Consistency. The VLQ Importance domain assesses how important 10 commonly valued life areas are to the respondent, simply, does the respondent care about a given area, and if so, to what extent. The finding that MVM Valuing is more strongly associated with this domain lends support to the notion that this scale of the MVM is measuring valuing as a general process.

MVM Freedom from Values Conflict was significantly correlated only with VLQ Consistency. The VLQ Consistency domain assesses the extent to which one has been successful in living consistently with one's values. Freedom from values conflict and distress would be expected to facilitate such success. The MVM Flexibility in Valuing scale was not significantly correlated with PVQ values purity; this finding is surprising given that the item content of this MVM scale is most consistent with freely chosen valuing. In addition, The MVM Flexibility in Valuing scale was significantly negatively correlated with the VLQ composite; this is contrary to expectations that increases in flexibility in valuing would contribute to increases in the extent of valued living, given

that flexibility would allow for variations in the form of valuing behavior. Given that this scale had only 3 items, had internal consistency reliability below that which is ideal for research, and was not correlated as expected with other measures of valuing, few conclusions can be drawn about its validity in measuring valuing.

Mindfulness

Mindfulness, or contact with the present moment, allows one to directly contact current contingencies, including observance of thoughts and feelings, and should theoretically facilitate freely choosing valued directions and valued responding (i.e., responding not based in experiential avoidance; Hayes et al., 1999). As such, increases in scores on the MVM scales, as measures of such flexible valuing, should be associated with increases in mindfulness skills as measured by the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004). This was indeed the case for the MVM Valuing and Freedom from Values Conflict scales. However, again MVM Flexibility in Valuing did not show this expected relationship and was not associated with total mindfulness scores. It may be interesting in future research to explore the relationship of the MVM scales to the subscales of the KIMS.

Positive Affect

Positive affect is related to frequent contact with pleasant events and level of social activity (Clark & Watson, 1988; Watson, 1988). From an ACT perspective, valuing also increases engagement in positively reinforcing activities, thereby contributing to a sense of meaning and vitality in life (Strosahl et al., 2004). As such, one would expect

that valued living would be associated with positive affect. In the current study, higher scores on the MVM Valuing scale were associated as expected with increases in positive affect as measured by the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), suggesting that choosing a life direction and engaging in behaviors consistent with that life direction contribute to a sense of pleasurable engagement in life. The MVM Freedom from Values Conflict scales was not related to positive affect. This finding may suggest that freedom from distress and from conflict about one's values does not necessarily mean that one is engaging in meaningful, positive reinforcement generating behaviors consistent with those values. Moreover, mattering may or may not be pleasurable. That is, people persisting in valued choosing in the face of painful thoughts and feelings (i.e., freedom from values conflict) may or may not have positive affect. That which is meaningful, while reinforcing, may also be associated with painful emotions (e.g., stress associated with applying for funding or making deadlines for one's cancer research). MVM Flexibility in Valuing was unexpectedly negatively correlated with positive affect, again, calling into question its validity, as flexibility in the form of valued behaviors available would be expected to increase contact with pleasurable activities.

Quality of Life

The Quality of Life Inventory® (QOLI®, assessment tool, Frisch (1994), Pearson Assessments™, NCS Pearson, Inc., Minneapolis, MN) assesses freedom from psychological distress due to having one's personal goals fulfilled. Choosing and having the psychological freedom to act consistently with a life direction in a flexible manner

would be expected to increase the likelihood of personal goal fulfillment. Consistent with this expectation, increases in scores on the MVM Freedom from Values Conflict scale were associated with increases in QOLI scores. However, neither scores on the MVM Valuing scale nor on the MVM Flexibility in Valuing scale were related to quality of life scores. Given the questionable current psychometrics of the Flexibility in Valuing scale, it is difficult to draw any firm conclusion about this relationship. With regard to the MVM Valuing scale, it is possible that the lack of relationship with life satisfaction is due to the failure of this scale to adequately assess the function of valuing; that is, acting consistently with freely chosen values would be expected to increase life satisfaction, whereas acting out of pliance or avoidance would not likely have this effect on quality of life. The findings of the current study suggest that freedom from conflict and distress in valuing is a better predictor of life satisfaction than is simply choosing a life direction.

Experiential Avoidance

From an ACT perspective, problems in living often result from attempts to avoid or eliminate negative thoughts and feelings, termed experiential avoidance (EA; Hayes et al., 1996). Efforts are made in the course of ACT to foster acceptance of and willingness to experience negative private content in order to help clients generate valued directions and persist in valued behaviors, which may have previously been stymied by experiential avoidance (e.g., rigidly following the rule “I must get rid of my depression before I can be a good parent.”). As such, increases in experiential avoidance would likely be associated with decreases in flexible valuing, and this result was found as expected in the relationships all three scales of the MVM with the

Acceptance and Action Questionnaire (AAQ-II; Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, et al., 2005). At the same time, though strongly correlated, the MVM scales were distinct from EA, a finding which argues further for the inclusion of changes in valuing as an additional second-order change variable to be assessed in ACT outcome studies.

Psychological Distress

Theoretically, generating and living consistently with one's freely chosen values would be expected to facilitate the development and maintenance of enriching, vital behavior patterns (Strosahl et al., 2004). Initial research assessing outcomes of ACT indeed suggests that values-based action is associated with positive outcomes (Lundgren et al., 2006; Vowles & McCracken, 2008). As such, one would expect that valuing would be protective against distress. In the current study, increases in both MVM Valuing and Freedom from Values Conflict scores were associated with decreases in reported levels of overall distress, as well as anxiety and depression, as measured by the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995), suggesting that choosing a life direction and flexibly mattering about one's values across domains are associated with greater psychological well-being. MVM Flexibility in Valuing showed a negative relationship with measures of overall distress, but not with measures of anxiety and depression; again given its psychometric instability, it is difficult to make conclusions about this finding.

Social Desirability

In terms of discriminant validity, the MVM scales were expected to be distinct

from social desirability. This was indeed the case for the MVM Valuing scale. A positive relationship was found between the Freedom from Values Conflict scale and social desirability as measured by the Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960). However, a socially desirable response set accounted for a minimal amount of the variance in Freedom from Values Conflict scores, and this scale was therefore certainly distinct from social desirability.

Additional Relationships

Given that the MVM was designed to be a measure of flexible valuing, it was expected to have stronger relationships with other measures of valuing than with measures of other constructs, in particular mindfulness and positive affect. Partial support for this conjecture was found with the MVM Valuing scale. MVM Valuing had a stronger relationship with values purity, or the extent to which valued behavior is freely chosen, than with positive affect. This finding lends support for the convergent validity of this scale. Neither MVM Valuing nor Freedom from Values Conflict was more strongly related to other measures of valuing than they were to mindfulness. Strong relationships of the MVM scales were expected with mindfulness, given that, theoretically, mindfulness should facilitate freely choosing a life direction as well as active choosing of valued behavior in the moment, particularly in the face of difficult thoughts and feelings (Hayes, 2004b). However, in validating a new measure of valuing, one would hope for even stronger relationships with other similar measures of this construct.

It is possible that the MVM is assessing different aspects of the valuing construct than the VLQ and PVQ. This may particularly be relevant in the case of the MVM

Freedom from Values Conflict scale as compared to other values measures. The VLQ composite measures the extent of valued living and the PVQ values purity score measures the extent to which values are freely chosen. These aspects seem to be better captured by the content of other two MVM scales than by Freedom from Values Conflict. A strength of the MVM may be that it captures an important aspect of flexible valuing, that the other measures do not: the ability to make valued choices across context, in the face of psychological distress. Another factor that may have contributed to a failure to find stronger relationships among MVM scales and other measures of valuing may be that the MVM, scored on a Likert-type scale and summed to yield a total score shares more method variance with several other Likert-type scales than with the VLQ and PVQ.

Relationships among the two more reliable MVM scales and demographic variables were also explored. Of particular interest were the relationships of the scales with mental health counseling attendance. In the current sample, those participants who endorsed that they had attended mental health counseling had significantly higher MVM Valuing scores and significantly lower MVM Freedom from Values Conflict scores than those who indicated that they had never attended counseling. Freedom from Values conflict scores were also more strongly negatively related to distress than were valuing scores. This suggests that reducing values conflict and distress about values may be more protective than simply choosing a life direction. In addition, this finding is consistent with current clinical uses of the VLQ. Specifically, clinicians often examine discrepancies between VLQ Importance and Consistency scores, in particular life areas of high importance with which the client has difficulty carrying out valued behaviors, in

order to determine targets for treatment. Hence the Freedom from Values Conflict scale may have similar clinical utility.

Relationships among MVM Scales

While practically, an orthogonal solution was chosen in the exploratory factor analysis, some of the MVM factors were correlated with each other. As these factor correlations were modest and below cut-off and, as an oblique rotation yielded the same solution, for the sake of simplicity the orthogonal solution was retained. After item elimination through EFA and reliability analyses, the MVM Valuing scale was not significantly correlated with the MVM Freedom from Values Conflict scale. The items of the Freedom from Values Conflict scale appear to measure the absence of conflicts among values and freedom from distress about valuing. That this scale is not related to valuing as a general process is an interesting, though not unexpected, finding. From an ACT perspective it is the function of verbally constructing a future, not the form of that future, that is believed to facilitate meaningful valued living and buffer against distress (Hayes et al., 1999). The Valuing scale is only assessing self-report of verbally construing life directions, and to a lesser extent acting consistently with those directions, but not the function of this behavior. That is, such rules may be generated out of pliance or experientially avoidance, or they may be freely chosen. Valuing to please others (pliance) or to displease others (counterpliance) and valuing to avoid negative consequences would be expected to contribute to values conflicts and distress, whereas flexible valuing would be expected to be protective against values conflicts. As

the function of participants' valuing was likely varied, it would be expected that any correlation with values conflicts may not be observed.

This result was similar to that observed in MVM correlations with the VLQ. Results of analyses of the relationships among VLQ scales and the MVM Valuing and MVM Freedom from Values Conflict scale are consistent with the finding that simply choosing a life direction is not related to conflict-free valuing behavior. Specifically, MVM Freedom from Values Conflict was significantly correlated with VLQ Values Consistency, but not with VLQ Values Importance. Valuing in general seems as though it is not sufficient to prevent conflict or distress about values. This is consistent with the theoretical underpinnings of ACT which would suggest that the function of valuing is more strongly related to outcome. People can have lots of values in many domains without conflict and distress, and they can have lots of values in many domains and lots of conflict. Valuing in general does not address flexibility in valuing.

The MVM Valuing scale had a significant, negative relationship with the MVM Flexibility in Valuing scale. Inspection of the factor loadings revealed that, while the items of the Flexibility in Valuing scale showed modest negative loadings on the Valuing scale, these values were not dangerously close to cross-loading and they suggest that the constructs underlying these two factors are indeed distinct. While the small number of items and the less than ideal reliability of the Flexibility in Valuing scale warrant caution in interpretation, this unexpected finding warrants some discussion in terms of future development of the MVM.

One would have expected a similar neutral relationship between valuing in general and flexibility in valuing as is seen between general valuing and freedom from

values conflict. That is, these constructs would not necessarily be expected to be related because respondents likely varied in the rigidity of their values expression; some could have lots of values and be rigid in their form and application, whereas others could have lots of values and more flexibility. However, this was not the case. As levels of general valuing increased, flexibility decreased, suggesting that choosing a life direction may be associated with rather rigidly following it. Such rigidity is often found in rule-following (Hayes et al., 1986) and may allow valuing behavior to persist even when psychological difficulties are present. However, inflexibility in the form of valuing behavior indicates that the behavior is under aversive control; which is a less effective means of controlling behavior (Skinner, 1938). It may also reflect pliance-type behaviors. Expansion of this scale should include items to assess the function of inflexibility (e.g., “If I don’t do very specific things to show what is important to me, something bad will happen”). The relationship between these scales underscores the importance in ACT of emphasizing assessment of the function of chosen values, so that they are freely chosen and thus facilitate contact with vitality-enhancing positive reinforcement.

Increases in scores on the MVM Freedom from Values Conflict scale were associated with increases in scores on the MVM Flexibility in Valuing scale. This result would be expected if the latter scale were more psychometrically sound and could safely be assumed to measure flexibility in valuing. Theoretically, flexibility in the form of valued behaviors would likely reduce values conflict and distress by allowing for an increased repertoire of valued actions that may be available for mattering across context, in any moment.

Limitations and Future Directions

Several limitations and future directions for the current study relate to scale and item development concerns and will no doubt drive future development of the MVM. Specifically, more strongly worded marker variables to assess important aspects of flexible valuing would likely have been helpful, particularly with respect to items assessing values as freely chosen and those assessing whole life valuing (i.e., ongoing valuing in a context, across values domains). Although consulting with experts in the field should have provided some assurance of content validity with regard to the flexible valuing construct, this clearly was not the case with the Flexibility in Valuing scale, which consisted of only three items. Additional efforts are needed to increase the content validity of this scale, for example, including additional marker variables (i.e., items considered most characteristic of a construct; see Comrey, 1988) to assess values as freely chosen (e.g., “It’s ok for me to choose a life direction that is different from what my parents would like”) and conversely as pliance (e.g., “I have to value certain things so others do not get upset”) or counterpliance (e.g., “I sometimes engage in negative behaviors just to see the reactions of others”). Including both positively and negatively worded versions of marker variables for all scales would also have guarded further against method variance contributing to factor loadings (Comrey, 1988).

The whole life valuing aspect of flexible valuing was predicted to manifest as a factor but did not, although some aspects of ongoing valuing across context are evident in the items of the MVM Freedom from Values Conflict scale. Inspection of the items that would be thought to capture this construct revealed that they were perhaps too complex and/or double-barreled, e.g., “I see myself as someone who has many things

that are important to me and I can interact with them all at the same time.” Future development of the MVM should assess the performance of simpler items to capture this construct, for example, “Regardless of the situation, I can show that I care.” The revised set of MVM items, including new items assessing flexibility and the function of valuing as well as whole life valuing should be administered to a new large development sample, and the factor structure and item characteristics of the MVM should be re-assessed.

Additional limitations include the means of assessing construct validity and characteristics of the development sample. Administering a variety of self-report measures theoretically believed to be related to the construct of interest to a large development sample is a convenient means to gather construct validity data; however, it is not ideal. Future development of the measure would do well to employ a multi-trait, multi-method approach to the evaluation of construct validity, as this would account for correlations among constructs due to method variance (Campbell & Fiske, 1959). Clinician and informant ratings of flexible valuing could be useful to this end. Additional measures of constructs relevant for convergent validity should also be included in future research including other measures of life satisfaction and measures assessing meaning and purpose in life (e.g., Scales of Psychological Well Being: Purpose in Life scale; Ryff, 1989). However, a challenge to the validation of a measure of the valuing construct remains in that there is no gold standard criterion measure against which to compare it.

With regard to the development sample, the MVM was designed to assess flexible valuing pre- and post- a course of ACT. It is possible that the factor structure of

the MVM would be different with a clinical sample, as compared with the rather psychologically healthy current undergraduate sample. Future development of the measure should assess its psychometric characteristics with a clinical sample as well as its utility as a treatment outcome measure pre- and post-ACT. In addition, a more diverse sample should be obtained to further assess generalizability of the findings, as the current sample was quite young and largely consisted of White females. Further development should also include an assessment of test-retest reliability as well as a confirmatory factor analysis in independent and diverse samples to see if the factor structure found in EFA is consistent.

Clinical Implications and Conclusions

Valuing as universal and important in influencing behavior has been observed in social psychology for decades and is now being explained through relational frame theory and fostered in acceptance and commitment therapy to facilitate meaningful living. Measuring this complex construct is a challenging endeavor. The results of the current study suggest that the Meta-Valuing Measure in its present form has a relatively stable factor structure, reliably captures aspects of this construct including formulating and carrying out rules about mattering as well as valuing across context and even when distressed, and is associated with other relevant constructs.

Clinically, it is of note that the Freedom from Values Conflict scale was more strongly negatively associated with distress than was general Valuing, a finding that supports the importance in ACT of not only verbally generating valued directions, but also of assessing the function of valuing and reducing experiential avoidance such that

matter in the face of distress is more likely. Such ongoing valuing in context, as measured by this scale, was associated with lower levels of distress. In its current form, the MVM may provide useful clinical data pre- and post-treatment, as many clients experience distress related to perceived values conflicts and/or have learning histories in which important things have been punished, although additional research is needed to ascertain its clinical utility.

Valuing is a historically difficult construct to measure, and its role in psychological well-being warrants its assessment. It is hoped that future development of the scale will more adequately capture the function of valuing behavior, as this aspect is critical to building stable patterns of valued behavior, which contribute to life's meaning and purpose. While the current work is a good beginning, ongoing research is needed to accurately capture this complex behavior and to begin to answer scientifically if mattering is what matters.

Table 1

Matrix of Correlation Coefficients among MVM Items

	MVM1	MVM2	MVM3	MVM4	MVM5	MVM6	MVM7	MVM8	MVM9	MVM10	MVM11	MVM12	MVM13	MVM14	MVM15	MVM16	MVM17	MVM18
MVM1	1.000																	
MVM2	0.336	1.000																
MVM3	0.006	0.299	1.000															
MVM4	-0.090	0.246	0.521	1.000														
MVM5	-0.088	0.255	0.420	0.581	1.000													
MVM6	0.135	0.006	-0.298	-0.330	-0.187	1.000												
MVM7	-0.106	-0.386	-0.386	-0.299	-0.351	0.174	1.000											
MVM8	0.296	0.232	0.082	-0.098	-0.156	0.113	-0.123	1.000										
MVM9	0.294	0.169	-0.068	-0.238	-0.229	0.179	-0.002	0.424	1.000									
MVM10	0.310	0.253	0.070	-0.051	-0.049	0.208	-0.130	0.387	0.495	1.000								
MVM11	0.286	0.276	0.082	-0.044	-0.011	0.239	-0.167	0.245	0.375	0.718	1.000							
MVM12	-0.047	0.318	0.404	0.469	0.438	-0.183	-0.437	0.034	-0.121	0.022	0.019	1.000						
MVM13	0.156	-0.093	-0.255	-0.357	-0.368	0.200	0.226	0.148	0.276	0.278	0.220	-0.495	1.000					
MVM14	0.342	0.340	0.094	-0.074	-0.032	0.090	-0.353	0.369	0.353	0.405	0.322	0.097	1.000	1.000				
MVM15	0.008	0.080	0.258	0.269	0.295	-0.152	-0.173	-0.060	-0.178	-0.088	-0.007	0.276	-0.259	-0.096	1.000			
MVM16	-0.076	0.090	0.253	0.427	0.398	-0.186	-0.230	-0.062	-0.200	-0.088	-0.070	0.447	-0.374	-0.098	0.312	1.000		
MVM17	0.247	0.273	0.154	0.042	0.082	0.043	-0.221	0.203	0.148	0.202	0.293	0.089	0.001	0.313	0.131	-0.021	1.000	
MVM18	0.258	0.224	-0.020	-0.115	-0.100	0.161	-0.134	0.322	0.400	0.632	0.574	-0.042	0.344	0.460	-0.112	-0.187	0.344	1.000
MVM19	-0.050	0.306	0.385	0.415	0.501	-0.140	-0.426	-0.015	-0.172	-0.085	-0.027	0.535	-0.399	0.116	0.353	0.345	0.119	-0.051
MVM20	0.057	-0.158	-0.277	-0.345	-0.350	0.187	0.184	0.174	0.213	0.210	0.153	-0.404	0.406	0.106	-0.210	-0.367	0.009	0.251
MVM21	0.019	0.214	0.332	0.288	0.274	-0.125	-0.346	0.068	-0.134	-0.095	-0.009	0.379	-0.314	0.086	0.208	0.247	0.121	-0.048
MVM22	0.234	-0.039	-0.156	-0.214	-0.249	0.239	0.074	0.180	0.256	0.234	0.221	-0.313	0.348	0.175	-0.115	-0.302	0.055	0.237
MVM23	0.312	0.278	0.053	-0.124	-0.099	0.097	-0.146	0.312	0.353	0.434	0.377	-0.077	0.179	0.458	-0.077	-0.151	0.264	0.471
MVM24	0.264	0.387	0.195	0.064	0.100	0.115	-0.197	0.291	0.186	0.308	0.289	0.131	-0.004	0.437	0.036	-0.012	0.299	0.357
MVM25	-0.153	0.144	0.291	0.411	0.411	-0.178	-0.236	-0.150	-0.256	-0.089	-0.058	0.402	-0.363	-0.073	0.151	0.374	0.033	-0.119
MVM26	-0.109	0.063	0.134	0.248	0.240	-0.109	-0.092	-0.176	-0.244	-0.257	-0.240	0.250	-0.274	-0.164	0.182	0.289	-0.106	-0.310
MVM27	-0.061	0.225	0.402	0.442	0.472	-0.172	-0.288	-0.093	-0.138	-0.030	0.062	0.434	-0.347	0.012	0.235	0.370	0.070	-0.067
MVM28	0.282	0.244	0.117	-0.018	-0.025	0.117	-0.225	0.412	0.237	0.315	0.319	0.127	0.036	0.463	0.025	-0.033	0.315	0.330
MVM29	-0.059	-0.343	-0.354	-0.306	-0.262	0.130	0.689	-0.187	-0.025	-0.142	-0.161	-0.461	0.236	-0.317	-0.153	-0.219	-0.229	-0.157
MVM30	-0.018	0.306	0.349	0.431	0.406	-0.178	-0.364	0.024	-0.140	-0.003	0.066	0.482	-0.380	0.101	0.311	0.317	0.177	-0.015
MVM31	-0.082	0.198	0.316	0.416	0.412	-0.172	-0.282	-0.169	-0.250	-0.148	-0.051	0.396	-0.388	-0.045	0.293	0.367	0.115	-0.132
MVM32	0.358	0.376	0.174	0.021	0.067	0.093	-0.207	0.263	0.246	0.347	0.381	0.164	0.063	0.452	0.014	0.003	0.302	0.428
MVM33	0.233	0.268	0.151	0.050	0.145	0.187	-0.182	0.161	0.104	0.243	0.307	0.143	-0.005	0.243	0.043	-0.010	0.226	0.307
MVM34	-0.127	0.163	0.248	0.380	0.414	-0.138	-0.306	-0.154	-0.271	-0.118	-0.054	0.436	-0.388	-0.034	0.273	0.290	0.128	-0.104
MVM35	-0.044	0.266	0.339	0.403	0.438	-0.132	-0.332	-0.122	-0.150	-0.067	-0.035	0.419	-0.363	0.017	0.326	0.362	0.163	-0.082
MVM36	0.235	0.257	0.198	0.033	0.010	0.028	-0.302	0.233	0.210	0.300	0.247	0.092	0.094	0.496	-0.055	-0.083	0.175	0.333
MVM37	-0.005	0.109	0.100	0.202	0.219	-0.072	-0.070	-0.128	-0.155	-0.096	-0.010	0.201	-0.219	-0.128	0.293	0.229	0.049	-0.114
MVM38	0.018	-0.262	-0.380	-0.415	-0.439	0.054	0.367	-0.001	0.137	-0.027	-0.102	-0.458	0.349	-0.088	-0.315	-0.398	-0.132	0.032
MVM39	0.033	0.306	0.316	0.251	0.287	-0.074	-0.423	0.043	0.012	0.066	0.102	0.326	-0.237	0.167	0.215	0.267	0.164	0.059
MVM40	-0.008	0.369	0.407	0.455	0.493	-0.101	-0.417	-0.019	-0.123	0.021	0.070	0.516	-0.382	0.127	0.342	0.426	0.172	-0.011
MVM41	-0.092	-0.174	-0.059	-0.042	-0.073	-0.139	0.131	-0.102	-0.060	-0.211	-0.257	-0.066	-0.081	-0.213	0.089	0.005	-0.177	-0.236
MVM42	-0.056	0.290	0.407	0.407	0.425	-0.189	-0.380	-0.080	-0.184	-0.092	-0.019	0.467	-0.443	0.002	0.299	0.395	0.106	-0.125
MVM43	0.207	0.140	0.060	-0.061	-0.077	0.141	0.013	0.261	0.290	0.437	0.444	-0.058	0.256	0.285	-0.119	-0.164	0.174	0.478
MVM44	0.202	0.006	-0.096	-0.166	-0.069	0.444	0.086	0.204	0.182	0.287	0.314	-0.119	0.231	0.172	-0.111	-0.183	0.193	0.347
MVM45	0.096	0.351	0.259	0.204	0.284	0.026	-0.303	0.126	0.004	0.140	0.157	0.282	-0.187	0.212	0.056	0.187	0.256	0.086
MVM46	0.314	0.212	0.128	-0.023	-0.051	0.090	-0.242	0.508	0.306	0.340	0.262	0.083	0.132	0.479	0.011	-0.061	0.241	0.320
MVM47	0.178	-0.010	-0.100	-0.166	-0.154	0.175	0.113	0.186	0.225	0.171	0.122	-0.160	0.187	0.102	-0.075	-0.162	0.056	0.153
MVM48	0.231	0.084	-0.118	-0.241	-0.118	0.420	0.075	0.214	0.311	0.300	0.300	-0.148	0.282	0.228	-0.070	-0.164	0.181	0.322
MVM49	0.262	0.283	0.144	0.017	0.012	0.043	-0.223	0.318	0.209	0.262	0.240	0.105	0.091	0.383	-0.042	0.008	0.230	0.301
MVM50	0.150	0.142	0.096	-0.033	-0.016	0.209	-0.065	0.163	0.145	0.242	0.250	-0.008	0.175	0.261	0.028	-0.074	0.188	0.290

Table 1 (continued).

	MVM1	MVM2	MVM3	MVM4	MVM5	MVM6	MVM7	MVM8	MVM9	MVM10	MVM11	MVM12	MVM13	MVM14	MVM15	MVM16	MVM17	MVM18
MVM51	-0.123	0.118	0.183	0.323	0.364	-0.091	-0.224	-0.156	-0.290	-0.186	-0.063	0.327	-0.407	-0.105	0.234	0.248	0.003	-0.197
MVM52	0.262	0.126	-0.054	-0.217	-0.178	0.149	-0.161	-0.278	0.448	0.371	0.296	-0.092	0.214	0.433	-0.053	-0.168	0.158	0.402
MVM53	0.011	0.256	0.339	0.310	0.389	-0.096	-0.271	0.002	-0.141	-0.046	0.020	0.444	-0.403	0.045	0.296	0.350	0.141	-0.063
MVM54	0.126	-0.054	-0.178	-0.227	-0.089	0.436	0.145	0.126	0.189	0.175	0.168	-0.170	0.205	0.081	-0.072	-0.173	0.074	0.208
MVM55	-0.033	0.125	0.206	0.275	0.229	-0.164	-0.177	-0.064	-0.148	-0.147	-0.117	0.333	-0.290	-0.021	0.109	0.287	-0.021	-0.147
MVM56	0.317	0.300	0.163	0.093	0.128	0.047	-0.162	0.137	0.094	0.151	0.157	0.101	-0.108	0.210	0.142	0.056	0.254	0.109
MVM57	-0.014	0.304	0.315	0.378	0.458	-0.131	-0.378	-0.045	-0.166	-0.018	0.045	0.479	-0.383	0.031	0.296	0.439	0.156	-0.109
MVM58	0.048	0.327	0.509	0.354	0.297	-0.137	-0.399	0.013	-0.060	0.085	0.137	0.383	-0.227	0.202	0.244	0.238	0.165	0.048
MVM59	0.021	0.311	0.432	0.430	0.436	-0.121	-0.358	-0.011	-0.151	0.003	0.079	0.446	-0.388	0.095	0.323	0.392	0.136	-0.055
MVM60	-0.130	0.207	0.333	0.482	0.369	-0.300	-0.228	-0.080	-0.243	-0.114	-0.082	0.441	-0.419	-0.101	0.192	0.446	-0.074	-0.150
MVM61	-0.094	0.051	0.216	0.292	0.317	-0.159	-0.165	-0.110	-0.239	-0.133	-0.097	0.213	-0.317	-0.078	0.226	0.296	0.011	-0.143
MVM62	0.284	0.204	0.053	-0.055	0.033	0.074	-0.072	0.181	0.223	0.242	0.195	0.001	0.041	0.272	0.016	-0.076	0.223	0.239
MVM63	0.060	-0.200	-0.339	-0.332	-0.299	0.239	0.321	0.038	0.213	0.065	-0.014	-0.442	0.315	-0.015	-0.265	-0.396	-0.081	0.117
MVM64	0.034	-0.199	-0.189	-0.165	-0.136	0.170	0.369	-0.013	0.068	0.072	0.090	-0.352	0.235	-0.133	-0.186	-0.286	-0.021	0.087
MVM65	0.244	0.228	0.179	0.043	0.053	0.156	-0.205	0.383	0.198	0.288	0.263	0.128	0.071	0.450	0.052	-0.017	0.325	0.331
MVM66	0.232	0.000	-0.122	-0.180	-0.144	0.189	0.040	0.199	0.260	0.198	0.170	-0.207	0.246	0.226	-0.085	-0.221	0.096	0.256
MVM67	0.168	0.067	-0.071	-0.115	-0.076	0.227	0.106	0.151	0.160	0.111	0.094	-0.213	0.135	0.070	-0.131	-0.144	0.072	0.109
MVM68	-0.048	0.197	0.342	0.339	0.295	-0.211	-0.297	0.017	-0.008	0.008	0.022	0.371	-0.237	0.095	0.127	0.262	0.093	-0.040
MVM69	0.322	0.434	0.192	0.033	0.059	0.076	-0.319	0.281	0.252	0.366	0.320	0.107	0.091	0.510	0.065	-0.009	0.311	0.388
MVM70	0.215	0.111	0.008	-0.126	-0.129	0.063	-0.054	0.274	0.368	0.386	0.270	-0.126	0.213	0.343	-0.133	-0.172	0.131	0.354
MVM71	0.174	0.418	0.227	0.154	0.228	0.073	-0.320	0.163	0.047	0.216	0.190	0.191	-0.119	0.330	0.107	0.150	0.274	0.129
MVM72	-0.082	0.088	0.233	0.286	0.336	-0.093	-0.175	-0.107	-0.228	-0.115	-0.040	0.324	-0.351	-0.128	0.200	0.345	0.027	-0.132
MVM73	0.190	0.191	0.100	0.109	0.115	0.003	-0.029	0.076	0.117	0.131	0.156	0.066	-0.019	0.144	-0.031	0.025	0.130	0.175
MVM74	0.266	0.374	0.200	0.034	0.067	0.130	-0.194	0.276	0.250	0.357	0.339	0.023	0.125	0.387	0.066	-0.094	0.268	0.442
MVM75	0.287	0.298	0.233	0.083	0.097	0.115	-0.269	0.409	0.231	0.334	0.312	0.181	0.069	0.459	0.066	0.004	0.312	0.365
	MVM19	MVM20	MVM21	MVM22	MVM23	MVM24	MVM25	MVM26	MVM27	MVM28	MVM29	MVM30	MVM31	MVM32	MVM33	MVM34	MVM35	MVM36
MVM1	-0.050	0.057	0.019	0.234	0.312	0.264	-0.153	-0.109	-0.061	0.282	-0.059	-0.018	-0.082	0.358	0.233	-0.127	-0.044	0.235
MVM2	0.306	-0.158	0.214	-0.039	0.278	0.387	0.144	0.063	0.225	0.244	-0.343	0.306	0.198	0.376	0.268	0.163	0.266	0.257
MVM3	0.385	-0.277	0.332	-0.156	0.053	0.195	0.291	0.134	0.402	0.117	-0.354	0.349	0.316	0.174	0.151	0.248	0.339	0.198
MVM4	0.415	-0.345	0.288	-0.214	-0.124	0.064	0.411	0.248	0.442	-0.018	-0.306	0.431	0.416	0.021	0.050	0.380	0.403	0.033
MVM5	0.501	-0.350	0.274	-0.249	-0.099	0.100	0.411	0.240	0.472	-0.025	-0.262	0.406	0.412	0.067	0.145	0.414	0.438	0.010
MVM6	-0.140	0.187	-0.125	0.239	0.097	0.115	-0.178	-0.109	-0.172	0.117	0.130	-0.178	-0.172	0.093	0.187	-0.138	-0.132	0.028
MVM7	-0.426	0.184	-0.346	0.074	-0.146	-0.197	-0.236	-0.092	-0.288	-0.225	0.689	-0.364	-0.282	-0.207	-0.182	-0.306	-0.332	-0.302
MVM8	-0.015	0.174	0.068	0.180	0.312	0.291	-0.150	-0.176	-0.093	0.412	-0.187	0.024	-0.169	0.263	0.161	-0.154	-0.122	0.233
MVM9	-0.172	0.213	-0.134	0.256	0.353	0.186	-0.256	-0.244	-0.138	0.237	-0.025	-0.140	-0.250	0.246	0.104	-0.271	-0.150	0.210
MVM10	-0.085	0.210	-0.095	0.234	0.434	0.308	-0.089	-0.257	-0.030	0.315	-0.142	-0.003	-0.148	0.347	0.243	-0.118	-0.067	0.300
MVM11	-0.027	0.153	-0.009	0.221	0.377	0.289	-0.058	-0.240	0.062	0.319	-0.161	0.066	-0.051	0.381	0.307	-0.054	-0.035	0.247
MVM12	0.535	-0.404	0.379	-0.313	-0.077	0.131	0.402	0.250	0.434	0.127	-0.461	0.482	0.396	0.164	0.143	0.436	0.419	0.092
MVM13	-0.399	0.406	-0.314	0.348	0.179	-0.004	-0.363	-0.274	-0.347	0.036	-0.236	-0.380	-0.388	0.063	-0.005	-0.388	-0.363	0.094
MVM14	0.116	0.106	0.086	0.175	0.458	0.437	-0.073	-0.164	0.012	0.463	-0.317	0.101	-0.045	0.452	0.243	-0.034	0.017	0.496
MVM15	0.353	-0.210	0.208	-0.115	-0.077	0.036	0.151	0.182	0.235	0.025	-0.153	0.311	0.293	0.014	0.043	0.273	0.326	-0.055
MVM16	0.345	-0.367	0.247	-0.302	-0.151	-0.012	0.374	0.289	0.370	-0.033	-0.219	0.317	0.367	0.003	-0.010	0.290	0.362	-0.083
MVM17	0.119	0.009	0.121	0.055	0.264	0.299	0.033	-0.106	0.070	0.315	-0.229	0.177	0.115	0.302	0.226	0.128	0.163	0.175
MVM18	-0.051	0.251	-0.048	0.237	0.471	0.357	-0.119	-0.310	-0.067	0.330	-0.157	-0.015	-0.132	0.428	0.307	-0.104	-0.082	0.333
MVM19	1.000	-0.468	0.511	-0.214	-0.048	0.182	0.383	0.272	0.397	0.155	-0.402	0.529	0.458	0.136	0.179	0.432	0.481	0.134
MVM20		1.000	-0.442	0.353	0.177	-0.001	-0.328	-0.258	-0.333	0.051	0.242	-0.400	-0.442	0.032	-0.022	-0.336	-0.360	0.054
MVM21			1.000	-0.200	0.042	0.100	0.233	0.225	0.269	0.094	-0.361	0.409	0.308	0.141	0.147	0.302	0.303	0.086
MVM22				1.000	0.200	0.082	-0.232	-0.216	-0.192	0.140	0.127	-0.289	-0.251	0.012	0.020	-0.229	-0.252	0.145
MVM23					1.000	0.440	-0.159	-0.292	-0.119	0.409	-0.123	-0.044	-0.130	0.400	0.212	-0.190	-0.056	0.275

Table 1 (continued)

	MVM19	MVM20	MVM21	MVM22	MVM23	MVM24	MVM25	MVM26	MVM27	MVM28	MVM29	MVM30	MVM31	MVM32	MVM33	MVM34	MVM35	MVM36
MVM24						1.000	0.026	-0.121	0.074	0.405	-0.166	0.150	0.071	0.457	0.355	0.091	0.099	0.284
MVM25							1.000	0.305	0.476	-0.056	-0.320	0.418	0.598	0.022	0.053	0.392	0.398	0.054
MVM26								1.000	0.238	-0.247	-0.097	0.210	0.280	-0.111	-0.105	0.259	0.201	-0.137
MVM27									1.000	0.007	-0.274	0.449	0.477	0.081	0.180	0.386	0.402	0.080
MVM28										1.000	-0.203	0.101	-0.018	0.412	0.267	-0.012	0.072	0.291
MVM29											1.000	-0.480	-0.350	-0.208	-0.106	-0.225	-0.310	-0.290
MVM30	0.529	-0.400	0.409	-0.289	-0.044	0.150	0.418	0.210	0.449	0.101	-0.480	1.000						
MVM31	0.458	-0.442	0.308	-0.251	-0.130	0.071	0.598	0.280	0.477	-0.018	-0.350	0.608	1.000					
MVM32	0.136	0.032	0.141	0.012	0.400	0.457	0.022	-0.111	0.081	0.412	-0.208	0.153	0.039	1.000				
MVM33	0.179	-0.022	0.147	0.020	0.212	0.355	0.053	-0.105	0.180	0.267	-0.106	0.147	0.101	0.448	1.000			
MVM34	0.432	-0.336	0.302	-0.229	-0.190	0.091	0.392	0.259	0.386	-0.012	-0.225	0.387	0.412	0.046	0.157	1.000		
MVM35	0.481	-0.360	0.303	-0.252	-0.056	0.099	0.398	0.201	0.402	0.072	-0.310	0.436	0.437	0.100	0.138	0.455	1.000	
MVM36	0.134	0.054	0.086	0.145	0.275	0.284	0.054	-0.137	0.080	0.291	-0.290	0.134	0.065	0.347	0.266	0.009	-0.030	1.000
MVM37	0.359	-0.241	0.185	-0.071	-0.074	-0.004	0.198	0.178	0.183	-0.032	-0.038	0.292	0.238	-0.101	0.045	0.302	0.277	-0.071
MVM38	-0.516	0.372	-0.381	0.162	-0.029	-0.233	-0.359	-0.154	-0.353	-0.159	0.398	-0.448	-0.447	-0.149	-0.185	-0.412	-0.479	-0.086
MVM39	0.418	-0.303	0.337	-0.103	0.070	0.217	0.236	0.106	0.291	0.152	-0.415	0.400	0.363	0.219	0.174	0.305	0.537	0.134
MVM40	0.590	-0.424	0.356	-0.182	0.014	0.203	0.434	0.234	0.531	0.176	-0.402	0.594	0.522	0.158	0.170	0.449	0.601	0.147
MVM41	-0.005	-0.013	-0.037	0.021	-0.133	-0.181	-0.083	0.152	-0.067	-0.204	0.167	-0.100	-0.046	-0.277	-0.262	-0.041	-0.016	-0.180
MVM42	0.513	-0.436	0.328	-0.205	-0.081	0.134	0.471	0.216	0.590	0.080	-0.352	0.545	0.575	0.064	0.145	0.452	0.500	0.104
MVM43	-0.115	0.239	-0.060	0.106	0.320	0.301	-0.119	-0.251	-0.086	0.299	-0.006	-0.077	-0.117	0.364	0.315	-0.115	-0.082	0.287
MVM44	-0.118	0.201	-0.050	0.192	0.182	0.207	-0.150	-0.158	-0.147	0.223	0.093	-0.115	-0.137	0.241	0.365	-0.108	-0.108	0.204
MVM45	0.294	-0.217	0.166	-0.061	0.165	0.255	0.345	0.077	0.273	0.230	-0.309	0.317	0.301	0.270	0.285	0.222	0.319	0.244
MVM46	0.087	0.121	0.066	0.197	0.423	0.336	-0.077	-0.208	-0.014	0.636	-0.198	0.027	-0.068	0.384	0.274	-0.093	-0.005	0.362
MVM47	-0.162	0.259	-0.190	0.197	0.169	0.080	-0.253	-0.121	-0.159	0.183	0.127	-0.213	-0.218	0.044	0.106	-0.250	-0.129	0.034
MVM48	-0.105	0.236	-0.144	0.264	0.245	0.240	-0.238	-0.224	-0.170	0.340	0.118	-0.154	-0.253	0.200	0.213	-0.174	-0.106	0.151
MVM49	0.087	0.045	0.098	0.041	0.309	0.245	0.036	-0.083	0.047	0.336	-0.207	0.139	0.036	0.317	0.267	-0.005	0.070	0.333
MVM50	0.038	0.144	-0.053	0.079	0.189	0.220	-0.099	-0.151	-0.017	0.242	-0.044	0.033	-0.078	0.255	0.281	-0.008	-0.014	0.205
MVM51	0.417	-0.339	0.273	-0.212	-0.135	0.075	0.392	0.317	0.356	-0.019	-0.155	0.359	0.419	0.000	0.099	0.407	0.360	-0.022
MVM52	-0.066	0.186	-0.078	0.262	0.369	0.265	-0.279	-0.325	-0.146	0.359	-0.073	-0.140	-0.233	0.307	0.195	-0.133	-0.062	0.265
MVM53	0.550	-0.408	0.385	-0.192	0.002	0.203	0.374	0.222	0.391	0.115	-0.323	0.513	0.468	0.115	0.168	0.392	0.446	0.080
MVM54	-0.134	0.233	-0.129	0.220	0.080	0.128	-0.201	-0.124	-0.219	0.122	0.146	-0.183	-0.215	0.102	0.252	-0.094	-0.117	0.046
MVM55	0.407	-0.296	0.319	-0.248	-0.090	0.088	0.260	0.474	0.260	0.002	-0.159	0.316	0.305	0.002	0.041	0.272	0.229	-0.033
MVM56	0.181	-0.097	0.109	0.052	0.211	0.333	0.039	0.019	0.128	0.210	-0.109	0.182	0.118	0.260	0.309	0.099	0.180	0.189
MVM57	0.524	-0.406	0.322	-0.238	-0.024	0.187	0.428	0.213	0.404	0.122	-0.376	0.474	0.457	0.137	0.144	0.471	0.590	0.102
MVM58	0.466	-0.362	0.397	-0.112	0.086	0.213	0.321	0.104	0.409	0.181	-0.399	0.413	0.398	0.224	0.243	0.359	0.410	0.261
MVM59	0.526	-0.400	0.432	-0.198	0.003	0.175	0.382	0.204	0.471	0.149	-0.362	0.587	0.509	0.152	0.206	0.426	0.494	0.183
MVM60	0.442	-0.417	0.335	-0.313	-0.133	0.057	0.471	0.228	0.479	-0.022	-0.235	0.468	0.525	0.047	0.135	0.439	0.406	0.025
MVM61	0.315	-0.227	0.255	-0.118	-0.136	0.059	0.259	0.187	0.241	-0.063	-0.114	0.279	0.335	-0.010	0.103	0.310	0.304	-0.004
MVM62	0.061	0.000	0.020	0.120	0.347	0.196	-0.052	-0.151	0.018	0.277	-0.067	0.067	0.008	0.225	0.142	-0.052	0.039	0.253
MVM63	-0.392	0.382	-0.342	0.343	0.078	-0.079	-0.425	-0.236	-0.350	0.001	0.399	-0.383	-0.404	-0.084	-0.072	-0.330	-0.409	-0.055
MVM64	-0.292	0.276	-0.276	0.262	0.035	-0.099	-0.265	-0.115	-0.175	-0.041	0.406	-0.336	-0.318	-0.029	0.037	-0.263	-0.288	-0.097
MVM65	0.144	0.052	0.115	0.122	0.328	0.402	-0.009	-0.185	0.017	0.687	-0.240	0.126	0.000	0.391	0.327	-0.001	0.090	0.390
MVM66	-0.187	0.232	-0.081	0.561	0.264	0.100	-0.236	-0.208	-0.171	0.210	0.056	-0.191	-0.218	0.161	0.098	-0.226	-0.254	0.216
MVM67	-0.081	0.203	-0.124	0.181	0.077	0.124	-0.124	0.033	-0.125	0.069	0.141	-0.178	-0.207	0.095	0.209	-0.172	-0.117	0.035
MVM68	0.334	-0.372	0.336	-0.189	0.027	0.057	0.322	0.097	0.307	0.085	-0.348	0.386	0.325	0.108	0.096	0.289	0.309	0.172
MVM69	0.115	0.025	0.126	0.131	0.474	0.398	-0.029	-0.125	0.069	0.422	-0.248	0.101	-0.002	0.472	0.310	0.000	0.103	0.340
MVM70	-0.157	0.238	-0.109	0.213	0.361	0.213	-0.162	-0.314	-0.139	0.190	-0.029	-0.145	-0.211	0.264	0.118	-0.176	-0.117	0.266
MVM71	0.264	-0.110	0.141	-0.007	0.235	0.359	0.189	0.005	0.177	0.264	-0.353	0.263	0.255	0.376	0.256	0.154	0.357	0.238
MVM72	0.338	-0.327	0.255	-0.245	-0.155	0.072	0.398	0.267	0.352	-0.057	-0.170	0.353	0.427	0.062	0.140	0.364	0.291	0.012
MVM73	0.069	0.018	0.029	-0.014	0.141	0.142	0.015	0.005	0.075	0.156	-0.004	0.125	0.036	0.232	0.185	0.068	0.034	0.125

Table 1 (continued)

	MVM19	MVM20	MVM21	MVM22	MVM23	MVM24	MVM25	MVM26	MVM27	MVM28	MVM29	MVM30	MVM31	MVM32	MVM33	MVM34	MVM35	MVM36
MVM74	0.088	0.131	0.065	0.216	0.431	0.343	-0.092	-0.133	0.017	0.386	-0.189	0.049	-0.046	0.429	0.287	-0.043	0.066	0.278
MVM75	0.151	0.081	0.109	0.153	0.351	0.401	0.001	-0.191	0.116	0.667	-0.262	0.173	0.023	0.471	0.373	0.008	0.084	0.356
	MVM37	MVM38	MVM39	MVM40	MVM41	MVM42	MVM43	MVM44	MVM45	MVM46	MVM47	MVM48	MVM49	MVM50	MVM51	MVM52	MVM53	MVM54
MVM1	-0.005	0.018	0.033	-0.008	-0.092	-0.056	0.207	0.202	0.096	0.314	0.178	0.231	0.262	0.150	-0.123	0.262	0.011	0.126
MVM2	0.109	-0.262	0.306	0.369	-0.174	0.290	0.140	0.006	0.351	0.212	-0.010	0.084	0.283	0.142	0.118	0.126	0.256	-0.054
MVM3	0.100	-0.380	0.316	0.407	-0.059	0.407	0.060	-0.096	0.259	0.128	-0.100	-0.118	0.144	0.096	0.183	-0.054	0.339	-0.178
MVM4	0.202	-0.415	0.251	0.455	-0.042	0.407	-0.061	-0.166	0.204	-0.023	-0.166	-0.241	0.017	-0.033	0.323	-0.217	0.310	-0.227
MVM5	0.219	-0.439	0.287	0.493	-0.073	0.425	-0.077	-0.069	0.284	-0.051	-0.154	-0.118	0.012	-0.016	0.364	-0.178	0.389	-0.089
MVM6	-0.072	0.054	-0.074	-0.101	-0.139	-0.189	0.141	0.444	0.026	0.090	0.175	0.420	0.043	0.209	-0.091	0.149	-0.096	0.436
MVM7	-0.070	0.367	-0.423	-0.417	0.131	-0.380	0.013	0.086	-0.303	-0.242	0.113	0.075	-0.223	-0.065	-0.224	-0.161	-0.271	0.145
MVM8	-0.128	-0.001	0.043	-0.019	-0.102	-0.080	0.261	0.204	0.126	0.508	0.186	0.214	0.318	0.163	-0.156	0.278	0.002	0.126
MVM9	-0.155	0.137	0.012	-0.123	-0.060	-0.184	0.290	0.182	0.004	0.306	0.225	0.311	0.209	0.145	-0.290	0.448	-0.141	0.189
MVM10	-0.096	-0.027	0.066	0.021	-0.211	-0.092	0.437	0.287	0.140	0.340	0.171	0.300	0.262	0.242	-0.186	0.371	-0.046	0.175
MVM11	-0.010	-0.102	0.102	0.070	-0.257	-0.019	0.444	0.314	0.157	0.262	0.122	0.300	0.240	0.250	-0.063	0.296	0.020	0.168
MVM12	0.201	-0.458	0.326	0.516	-0.066	0.467	-0.058	-0.119	0.282	0.083	-0.160	-0.148	0.105	-0.008	0.327	-0.092	0.444	-0.170
MVM13	-0.219	0.349	-0.237	-0.382	-0.081	-0.443	0.256	0.231	-0.187	0.132	0.187	0.282	0.091	0.175	-0.407	0.214	-0.403	0.205
MVM14	-0.128	-0.088	0.167	0.127	-0.213	0.002	0.285	0.172	0.212	0.479	0.102	0.228	0.383	0.261	-0.105	0.433	0.045	0.081
MVM15	0.293	-0.315	0.215	0.342	0.089	0.299	-0.119	-0.111	0.056	0.011	-0.075	-0.070	-0.042	0.028	0.234	-0.053	0.296	-0.072
MVM16	0.229	-0.398	0.267	0.426	0.005	0.395	-0.164	-0.183	0.187	-0.061	-0.162	-0.164	0.008	-0.074	0.248	-0.168	0.350	-0.173
MVM17	0.049	-0.132	0.164	0.172	-0.177	0.106	0.174	0.193	0.256	0.241	0.056	0.181	0.230	0.188	0.003	0.158	0.141	0.074
MVM18	-0.114	0.032	0.059	-0.011	-0.236	-0.125	0.478	0.347	0.086	0.320	0.153	0.322	0.301	0.290	-0.197	0.402	-0.063	0.208
MVM19	0.359	-0.516	0.418	0.590	-0.005	0.513	-0.115	-0.118	0.294	0.087	-0.162	-0.105	0.087	0.038	0.417	-0.066	0.550	-0.134
MVM20	-0.241	0.372	-0.303	-0.424	-0.013	-0.436	0.239	0.201	-0.217	0.121	0.259	0.236	0.045	0.144	-0.339	0.186	-0.408	0.233
MVM21	0.185	-0.381	0.337	0.356	-0.037	0.328	-0.060	-0.050	0.166	0.066	-0.190	-0.144	0.098	-0.053	0.273	-0.078	0.385	-0.129
MVM22	-0.071	0.162	-0.103	-0.182	0.021	-0.205	0.106	0.192	-0.061	0.197	0.197	0.264	0.041	0.079	-0.212	0.262	-0.192	0.220
MVM23	-0.074	-0.029	0.070	0.014	-0.133	-0.081	0.320	0.182	0.165	0.423	0.169	0.245	0.309	0.189	-0.135	0.369	0.002	0.080
MVM24	-0.004	-0.233	0.217	0.203	-0.181	0.134	0.301	0.207	0.255	0.336	0.080	0.240	0.245	0.220	0.075	0.265	0.203	0.128
MVM25	0.198	-0.359	0.236	0.434	-0.083	0.471	-0.119	-0.150	0.345	-0.077	-0.253	-0.238	0.036	-0.099	0.392	-0.279	0.374	-0.201
MVM26	0.178	-0.154	0.106	0.234	0.152	0.216	-0.251	-0.158	0.077	-0.208	-0.121	-0.224	-0.083	-0.151	0.317	-0.325	0.222	-0.124
MVM27	0.183	-0.353	0.291	0.531	-0.067	0.590	-0.086	-0.147	0.273	-0.014	-0.159	-0.170	0.047	-0.017	0.356	-0.146	0.391	-0.219
MVM28	-0.032	-0.159	0.152	0.176	-0.204	0.080	0.299	0.223	0.230	0.636	0.183	0.340	0.336	0.242	-0.019	0.359	0.115	0.122
MVM29	-0.038	0.398	-0.415	-0.402	0.167	-0.352	-0.006	0.093	-0.309	-0.198	0.127	0.118	-0.207	-0.044	-0.155	-0.073	-0.323	0.146
MVM30	0.292	-0.448	0.400	0.594	-0.100	0.545	-0.077	-0.115	0.317	0.027	-0.213	-0.154	0.139	0.033	0.359	-0.140	0.513	-0.183
MVM31	0.238	-0.447	0.363	0.522	-0.046	0.575	-0.117	-0.137	0.301	-0.068	-0.218	-0.253	0.036	-0.078	0.419	-0.233	0.468	-0.215
MVM32	-0.101	-0.149	0.219	0.158	-0.277	0.064	0.364	0.241	0.270	0.384	0.044	0.200	0.317	0.255	0.000	0.307	0.115	0.102
MVM33	0.045	-0.185	0.174	0.170	-0.262	0.145	0.315	0.365	0.285	0.274	0.106	0.213	0.267	0.281	0.099	0.195	0.168	0.252
MVM34	0.302	-0.412	0.305	0.449	-0.041	0.452	-0.115	-0.108	0.222	-0.093	-0.250	-0.174	-0.005	-0.008	0.407	-0.133	0.392	-0.094
MVM35	0.277	-0.479	0.537	0.601	-0.016	0.500	-0.082	-0.108	0.319	-0.005	-0.129	-0.106	0.070	-0.014	0.360	-0.062	0.446	-0.117
MVM36	-0.071	-0.086	0.134	0.147	-0.180	0.104	0.287	0.204	0.244	0.362	0.034	0.151	0.333	0.205	-0.022	0.265	0.080	0.046
MVM37	1.000	-0.270	0.175	0.351	0.249	0.295	-0.171	-0.081	0.138	-0.102	-0.162	-0.085	-0.047	-0.098	0.300	-0.122	0.378	-0.112
MVM38		1.000	-0.509	-0.623	0.043	-0.498	-0.004	0.067	-0.337	-0.093	0.144	0.107	-0.112	-0.070	-0.389	0.024	-0.490	0.106
MVM39			1.000	0.599	-0.028	0.455	-0.063	-0.125	0.414	0.140	-0.110	-0.078	0.151	0.052	0.257	0.093	0.461	-0.137
MVM40				1.000	-0.020	0.676	-0.104	-0.149	0.422	0.087	-0.145	-0.122	0.128	-0.001	0.418	-0.052	0.604	-0.179
MVM41					1.000	0.061	-0.407	-0.286	-0.154	-0.157	-0.028	-0.159	-0.195	-0.244	0.037	-0.114	-0.037	-0.180
MVM42						1.000	-0.210	-0.250	0.390	-0.003	-0.197	-0.183	0.064	-0.036	0.431	-0.144	0.564	-0.248
MVM43							1.000	0.562	0.041	0.260	0.138	0.312	0.188	0.300	-0.129	0.237	-0.086	0.273
MVM44								1.000	0.037	0.184	0.166	0.514	0.104	0.261	-0.089	0.158	-0.089	0.531
MVM45									1.000	0.292	0.015	0.038	0.267	0.119	0.234	0.041	0.368	-0.026

Table 1 (continued)

	MVM37	MVM38	MVM39	MVM40	MVM41	MVM42	MVM43	MVM44	MVM45	MVM46	MVM47	MVM48	MVM49	MVM50	MVM51	MVM52	MVM53	MVM54
MVM46										1.000	0.276	0.317	0.368	0.283	-0.105	0.379	0.018	0.108
MVM47											1.000	0.389	0.191	0.244	-0.262	0.192	-0.235	0.275
MVM48												1.000	0.246	0.337	-0.193	0.324	-0.153	0.544
MVM49													1.000	0.286	-0.087	0.231	0.079	0.082
MVM50														1.000	-0.169	0.296	-0.004	0.251
MVM51															1.000	-0.284	0.448	-0.160
MVM52																1.000	-0.145	0.209
MVM53																	1.000	-0.212
MVM54																		1.000
MVM55	0.353	-0.316	0.255	0.376	0.117	0.342	-0.098	-0.104	0.199	-0.032	-0.150	-0.145	0.022	-0.068	0.386	-0.199	0.418	-0.215
MVM56	0.170	-0.186	0.159	0.223	-0.046	0.191	0.117	0.145	0.329	0.212	0.114	0.171	0.268	0.145	0.126	0.141	0.226	0.089
MVM57	0.339	-0.518	0.524	0.605	-0.019	0.560	-0.109	-0.084	0.378	0.029	-0.174	-0.145	0.048	-0.035	0.439	-0.116	0.588	-0.140
MVM58	0.261	-0.439	0.438	0.524	-0.075	0.517	0.059	-0.095	0.324	0.145	-0.170	-0.088	0.174	0.077	0.274	-0.015	0.430	-0.194
MVM59	0.330	-0.494	0.453	0.662	-0.024	0.571	-0.037	-0.065	0.337	0.029	-0.211	-0.149	0.098	-0.057	0.427	-0.126	0.562	-0.200
MVM60	0.236	-0.371	0.347	0.508	-0.037	0.578	-0.142	-0.266	0.245	-0.097	-0.265	-0.361	-0.029	-0.134	0.422	-0.254	0.466	-0.361
MVM61	0.243	-0.255	0.222	0.297	0.240	0.330	-0.158	-0.160	0.166	-0.097	-0.169	-0.159	-0.019	-0.082	0.297	-0.160	0.369	-0.155
MVM62	0.019	-0.104	0.070	0.112	-0.136	0.040	0.162	0.073	0.189	0.324	0.113	0.154	0.224	0.105	-0.019	0.317	0.098	0.055
MVM63	-0.146	0.365	-0.322	-0.418	0.056	-0.426	0.126	0.211	-0.262	0.046	0.242	0.220	-0.032	0.113	-0.336	0.235	-0.388	0.242
MVM64	-0.147	0.233	-0.272	-0.345	0.013	-0.361	0.156	0.222	-0.173	0.016	0.146	0.195	-0.065	0.095	-0.191	0.060	-0.313	0.224
MVM65	-0.053	-0.200	0.163	0.145	-0.230	0.034	0.301	0.255	0.302	0.654	0.161	0.337	0.380	0.352	-0.051	0.329	0.121	0.171
MVM66	-0.088	0.129	-0.091	-0.193	0.026	-0.249	0.160	0.231	-0.047	0.250	0.204	0.275	0.144	0.101	-0.253	0.304	-0.196	0.210
MVM67	-0.058	0.110	-0.110	-0.181	-0.046	-0.177	0.156	0.247	0.043	0.123	0.431	0.310	0.096	0.181	-0.116	0.095	-0.161	0.282
MVM68	0.148	-0.299	0.275	0.412	-0.063	0.366	0.006	-0.121	0.234	0.068	-0.227	-0.190	0.117	-0.114	0.229	-0.062	0.338	-0.291
MVM69	-0.040	-0.189	0.260	0.227	-0.178	0.106	0.276	0.157	0.292	0.460	0.133	0.257	0.371	0.286	-0.037	0.378	0.086	0.069
MVM70	-0.206	0.022	0.025	-0.110	-0.040	-0.116	0.241	0.099	0.069	0.341	0.226	0.232	0.263	0.220	-0.288	0.436	-0.160	0.078
MVM71	0.041	-0.330	0.589	0.405	-0.190	0.312	0.064	-0.005	0.513	0.255	0.028	0.087	0.290	0.178	0.114	0.158	0.297	-0.031
MVM72	0.129	-0.330	0.235	0.347	-0.040	0.386	-0.112	-0.109	0.231	-0.134	-0.212	-0.205	-0.050	-0.107	0.467	-0.240	0.384	-0.118
MVM73	0.037	-0.075	0.055	0.087	-0.087	0.080	0.191	0.151	0.199	0.138	0.063	0.171	0.147	0.127	0.047	0.102	0.131	0.089
MVM74	-0.062	-0.147	0.197	0.136	-0.157	0.024	0.306	0.181	0.197	0.403	0.143	0.302	0.326	0.316	-0.084	0.378	0.014	0.124
MVM75	-0.029	-0.204	0.226	0.206	-0.239	0.110	0.304	0.258	0.279	0.637	0.128	0.307	0.378	0.328	-0.034	0.339	0.095	0.110
	MVM55	MVM56	MVM57	MVM58	MVM59	MVM60	MVM61	MVM62	MVM63	MVM64	MVM65	MVM66	MVM67	MVM68	MVM69	MVM70	MVM71	MVM72
MVM1	-0.033	0.317	-0.014	0.048	0.021	-0.130	-0.094	0.284	0.060	0.034	0.244	0.232	0.168	-0.048	0.322	0.215	0.174	-0.082
MVM2	0.125	0.300	0.304	0.327	0.311	0.207	0.051	0.204	-0.200	-0.199	0.228	0.000	0.067	0.197	0.434	0.111	0.418	0.088
MVM3	0.206	0.163	0.315	0.509	0.432	0.333	0.216	0.053	-0.339	-0.189	0.179	-0.122	-0.071	0.342	0.192	0.008	0.227	0.233
MVM4	0.275	0.093	0.378	0.354	0.430	0.482	0.292	-0.055	-0.332	-0.165	0.043	-0.180	-0.115	0.339	0.033	-0.126	0.154	0.286
MVM5	0.229	0.128	0.458	0.297	0.436	0.369	0.317	0.033	-0.299	-0.136	0.053	-0.144	-0.076	0.295	0.059	-0.129	0.228	0.336
MVM6	-0.164	0.047	-0.131	-0.137	-0.121	-0.300	-0.159	0.074	0.239	0.170	0.156	0.189	0.227	-0.211	0.076	0.063	0.073	-0.093
MVM7	-0.177	-0.162	-0.378	-0.399	-0.358	-0.228	-0.165	-0.072	0.321	0.369	-0.205	0.040	0.106	-0.297	-0.319	-0.054	-0.320	-0.175
MVM8	-0.064	0.137	-0.045	0.013	-0.011	-0.080	-0.110	0.181	0.038	-0.013	0.383	0.199	0.151	0.017	0.281	0.274	0.163	-0.107
MVM9	-0.148	0.094	-0.166	-0.060	-0.151	-0.243	-0.239	0.223	0.213	0.068	0.198	0.260	0.160	-0.008	0.252	0.368	0.047	-0.228
MVM10	-0.147	0.151	-0.018	0.085	0.003	-0.114	-0.133	0.242	0.065	0.072	0.288	0.198	0.111	0.008	0.366	0.386	0.216	-0.115
MVM11	-0.117	0.157	0.045	0.137	0.079	-0.082	-0.097	0.195	-0.014	0.090	0.263	0.170	0.094	0.022	0.320	0.270	0.190	-0.040
MVM12	0.333	0.101	0.479	0.383	0.446	0.441	0.213	0.001	-0.442	-0.352	0.128	-0.207	-0.213	0.371	0.107	-0.126	0.191	0.324
MVM13	-0.290	-0.108	-0.383	-0.227	-0.388	-0.419	-0.317	0.041	0.315	0.235	0.071	0.246	0.135	-0.237	0.091	0.213	-0.119	-0.351
MVM14	-0.021	0.210	0.031	0.202	0.095	-0.101	-0.078	0.272	-0.015	-0.133	0.450	0.226	0.070	0.095	0.510	0.343	0.330	-0.128
MVM15	0.109	0.142	0.296	0.244	0.323	0.192	0.226	0.016	-0.265	-0.186	0.052	-0.085	-0.131	0.127	0.065	-0.133	0.107	0.200
MVM16	0.287	0.056	0.439	0.238	0.392	0.446	0.296	-0.076	-0.396	-0.286	-0.017	-0.221	-0.144	0.262	-0.009	-0.172	0.150	0.345
MVM17	-0.021	0.254	0.156	0.165	0.136	-0.074	0.011	0.223	-0.081	-0.021	0.325	0.096	0.072	0.093	0.311	0.131	0.274	0.027

Table 1 (continued)

	MVM55	MVM56	MVM57	MVM58	MVM59	MVM60	MVM61	MVM62	MVM63	MVM64	MVM65	MVM66	MVM67	MVM68	MVM69	MVM70	MVM71	MVM72
MVM18	-0.147	0.109	-0.109	0.048	-0.055	-0.150	-0.143	0.239	0.117	0.087	0.331	0.256	0.109	-0.040	0.388	0.354	0.129	-0.132
MVM19	0.407	0.181	0.524	0.466	0.526	0.442	0.315	0.061	-0.392	-0.292	0.144	-0.187	-0.081	0.334	0.115	-0.157	0.264	0.338
MVM20	-0.296	-0.097	-0.406	-0.362	-0.400	-0.417	-0.227	0.000	0.382	0.276	0.052	0.232	0.203	-0.372	0.025	0.238	-0.110	-0.327
MVM21	0.319	0.109	0.322	0.397	0.432	0.335	0.255	0.020	-0.342	-0.276	0.115	-0.081	-0.124	0.336	0.126	-0.109	0.141	0.255
MVM22	-0.248	0.052	-0.238	-0.112	-0.198	-0.313	-0.118	0.120	0.343	0.262	0.122	0.561	0.181	-0.189	0.131	0.213	-0.007	-0.245
MVM23	-0.090	0.211	-0.024	0.086	0.003	-0.133	-0.136	0.347	0.078	0.035	0.328	0.264	0.077	0.027	0.474	0.361	0.235	-0.155
MVM24	0.088	0.333	0.187	0.213	0.175	0.057	0.059	0.196	-0.079	-0.099	0.402	0.100	0.124	0.057	0.398	0.213	0.359	0.072
MVM25	0.260	0.039	0.428	0.321	0.382	0.471	0.259	-0.052	-0.425	-0.265	-0.009	-0.236	-0.124	0.322	-0.029	-0.162	0.189	0.398
MVM26	0.474	0.019	0.213	0.104	0.204	0.228	0.187	-0.151	-0.236	-0.115	-0.185	-0.208	0.033	0.097	-0.125	-0.314	0.005	0.267
MVM27	0.260	0.128	0.404	0.409	0.471	0.479	0.241	0.018	-0.350	-0.175	0.017	-0.171	-0.125	0.307	0.069	-0.139	0.177	0.352
MVM28	0.002	0.210	0.122	0.181	0.149	-0.022	-0.063	0.277	0.001	-0.041	0.687	0.210	0.069	0.085	0.422	0.190	0.264	-0.057
MVM29	-0.159	-0.109	-0.376	-0.399	-0.362	-0.235	-0.114	-0.067	0.399	0.406	-0.240	0.056	0.141	-0.348	-0.248	-0.029	-0.353	-0.170
MVM30	0.316	0.182	0.474	0.413	0.587	0.468	0.279	0.067	-0.383	-0.336	0.126	-0.191	-0.178	0.386	0.101	-0.145	0.263	0.353
MVM31	0.305	0.118	0.457	0.398	0.509	0.525	0.335	0.008	-0.404	-0.318	0.000	-0.218	-0.207	0.325	-0.002	-0.211	0.255	0.427
MVM32	0.002	0.260	0.137	0.224	0.152	0.047	-0.010	0.225	-0.084	-0.029	0.391	0.161	0.095	0.108	0.472	0.264	0.376	0.062
MVM33	0.041	0.309	0.144	0.243	0.206	0.135	0.103	0.142	-0.072	0.037	0.327	0.098	0.209	0.096	0.310	0.118	0.256	0.140
MVM34	0.272	0.099	0.471	0.359	0.426	0.439	0.310	-0.052	-0.330	-0.263	-0.001	-0.226	-0.172	0.289	0.000	-0.176	0.154	0.364
MVM35	0.229	0.180	0.590	0.410	0.494	0.406	0.304	0.039	-0.409	-0.288	0.090	-0.254	-0.117	0.309	0.103	-0.117	0.357	0.291
MVM36	-0.033	0.189	0.102	0.261	0.183	0.025	-0.004	0.253	-0.055	-0.097	0.390	0.216	0.035	0.172	0.340	0.266	0.238	0.012
MVM37	0.353	0.170	0.339	0.261	0.330	0.236	0.243	0.019	-0.146	-0.147	-0.053	-0.088	-0.058	0.148	-0.040	-0.206	0.041	0.129
MVM38	-0.316	-0.186	-0.518	-0.439	-0.494	-0.371	-0.255	-0.104	0.365	0.233	-0.200	0.129	0.110	-0.299	-0.189	0.022	-0.330	-0.330
MVM39	0.255	0.159	0.524	0.438	0.453	0.347	0.222	0.070	-0.322	-0.272	0.163	-0.091	-0.110	0.275	0.260	0.025	0.589	0.235
MVM40	0.376	0.223	0.605	0.524	0.662	0.508	0.297	0.112	-0.418	-0.345	0.145	-0.193	-0.181	0.412	0.227	-0.110	0.405	0.347
MVM41	0.117	-0.046	-0.019	-0.075	-0.024	-0.037	0.240	-0.136	0.056	0.013	-0.230	0.026	-0.046	-0.063	-0.178	-0.040	-0.190	-0.040
MVM42	0.342	0.191	0.560	0.517	0.571	0.578	0.330	0.040	-0.426	-0.361	0.034	-0.249	-0.177	0.366	0.106	-0.116	0.312	0.386
MVM43	-0.098	0.117	-0.109	0.059	-0.037	-0.142	-0.158	0.162	0.126	0.156	0.301	0.160	0.156	0.006	0.276	0.241	0.064	-0.112
MVM44	-0.104	0.145	-0.084	-0.095	-0.065	-0.266	-0.160	0.073	0.211	0.222	0.255	0.231	0.247	-0.121	0.157	0.099	-0.005	-0.109
MVM45	0.199	0.329	0.378	0.324	0.337	0.245	0.166	0.189	-0.262	-0.173	0.302	-0.047	0.043	0.234	0.292	0.069	0.513	0.231
MVM46	-0.032	0.212	0.029	0.145	0.029	-0.097	-0.097	0.324	0.046	0.016	0.654	0.250	0.123	0.068	0.460	0.341	0.255	-0.134
MVM47	-0.150	0.114	-0.174	-0.170	-0.211	-0.265	-0.169	0.113	0.242	0.146	0.161	0.204	0.431	-0.227	0.133	0.226	0.028	-0.212
MVM48	-0.145	0.171	-0.145	-0.088	-0.149	-0.361	-0.159	0.154	0.220	0.195	0.337	0.275	0.310	-0.190	0.257	0.232	0.087	-0.205
MVM49	0.022	0.268	0.048	0.174	0.098	-0.029	-0.019	0.224	-0.032	-0.065	0.380	0.144	0.096	0.117	0.371	0.263	0.290	-0.050
MVM50	-0.068	0.145	-0.035	0.077	-0.057	-0.134	-0.082	0.105	0.113	0.095	0.352	0.101	0.181	-0.114	0.286	0.220	0.178	-0.107
MVM51	0.386	0.126	0.439	0.274	0.427	0.422	0.297	-0.019	-0.336	-0.191	-0.051	-0.253	-0.116	0.229	-0.037	-0.288	0.114	0.467
MVM52	-0.199	0.141	-0.116	-0.015	-0.126	-0.254	-0.160	0.317	0.235	0.060	0.329	0.304	0.095	-0.062	0.378	0.436	0.158	-0.240
MVM53	0.418	0.226	0.588	0.430	0.562	0.466	0.369	0.098	-0.388	-0.313	0.121	-0.196	-0.161	0.338	0.086	-0.160	0.297	0.384
MVM54	-0.215	0.089	-0.140	-0.194	-0.200	-0.361	-0.155	0.055	0.242	0.224	0.171	0.210	0.282	-0.291	0.069	0.078	-0.031	-0.118
MVM55	1.000	0.124	0.332	0.227	0.334	0.350	0.257	-0.103	-0.257	-0.251	-0.049	-0.268	-0.073	0.227	-0.006	-0.238	0.104	0.251
MVM56		1.000	0.203	0.129	0.231	0.048	0.166	0.281	-0.094	-0.047	0.210	0.034	0.213	0.035	0.259	0.142	0.325	0.089
MVM57			1.000	0.462	0.589	0.478	0.345	0.086	-0.428	-0.325	0.118	-0.267	-0.171	0.376	0.088	-0.132	0.385	0.410
MVM58				1.000	0.605	0.404	0.240	0.100	-0.351	-0.229	0.215	-0.122	-0.165	0.438	0.247	-0.004	0.311	0.211
MVM59					1.000	0.562	0.432	0.079	-0.469	-0.324	0.181	-0.220	-0.189	0.424	0.148	-0.116	0.329	0.401
MVM60						1.000	0.357	-0.106	-0.464	-0.292	-0.069	-0.287	-0.188	0.354	-0.004	-0.222	0.177	0.405
MVM61							1.000	-0.081	-0.261	-0.142	-0.026	-0.167	-0.101	0.217	-0.032	-0.191	0.136	0.302
MVM62								1.000	0.102	0.035	0.321	0.200	0.077	0.055	0.355	0.308	0.210	-0.092
MVM63									1.000	0.451	-0.029	0.416	0.197	-0.295	-0.066	0.120	-0.212	-0.327
MVM64										1.000	0.045	0.305	0.188	-0.227	-0.077	0.080	-0.151	-0.219
MVM65											1.000	0.259	0.099	0.089	0.450	0.237	0.320	-0.065
MVM66												1.000	0.165	-0.141	0.257	0.253	0.002	-0.233
MVM67													1.000	-0.335	0.117	0.135	0.081	-0.129

Table 1 (continued)

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	MVM55	MVM56	MVM57	MVM58	MVM59	MVM60	MVM61	MVM62	MVM63	MVM64	MVM65	MVM66	MVM67	MVM68	MVM69	MVM70	MVM71	MVM72	
MVM68														1.000	0.052	-0.075	0.141	0.210	
MVM69															1.000	0.410	0.437	-0.102	
MVM70																1.000	0.187	-0.237	
MVM71																	1.000	0.094	
MVM72																		1.000	
MVM73	0.046	0.226	0.081	0.084	0.100	0.012	0.045	0.135	0.031	0.080	0.186	0.039	0.092	0.034	0.174	0.093	0.201	0.041	
MVM74	-0.078	0.208	0.023	0.224	0.099	-0.046	-0.063	0.342	0.030	0.025	0.448	0.274	0.138	-0.019	0.672	0.372	0.361	-0.193	
MVM75	-0.055	0.274	0.134	0.245	0.198	-0.003	-0.005	0.338	-0.007	0.026	0.755	0.235	0.087	0.100	0.510	0.298	0.377	-0.047	
	MVM73	MVM74	MVM75																
MVM73	1.000	0.180	0.243																
MVM74		1.000	0.524																
MVM75			1.000																

Table 2

Matrix of Unrotated Factor Loadings

Item	Factor 1	Factor 2	Factor 3
1	-.070	.475	.010
2	.379	.451	-.060
3	.541	.170	-.107
4	.608	-.062	.000
5	.613	-.015	.167
6	-.282	.254	.404
7	-.520	-.306	.260
8	-.086	.518	-.139
9	-.297	.484	-.143
10	-.110	.624	-.046
11	-.028	.578	.071
12	.673	.062	-.042
13	-.570	.236	-.054
14	.045	.679	-.238
15	.404	-.033	.081
16	.551	-.136	.038
17	.151	.438	.046
18	-.153	.649	-.030
19	.717	.080	.082
20	-.558	.186	.004
21	.529	.062	-.044
22	-.373	.288	.025
23	-.093	.615	-.167
24	.180	.536	.079
25	.605	-.123	.060

Table 2 (continued)

Item	Factor 1	Factor 2	Factor 3
26	.358	-.314	.144
27	.618	-.006	.060
28	.087	.651	-.032
29	-.528	-.283	.297
30	.703	.084	.010
31	.690	-.088	.074
32	.147	.625	.017
33	.182	.480	.322
34	.600	-.084	.156
35	.660	.034	.100
36	.114	.513	-.137
37	.379	-.112	.167
38	-.660	-.155	-.090
39	.582	.229	-.069
40	.792	.148	.042
41	-.031	-.329	-.108
42	.758	-.002	.001
43	-.169	.517	.177
44	-.245	.419	.521
45	.455	.341	.086
46	.005	.671	-.127
47	-.308	.278	.152
48	-.299	.497	.388
49	.094	.512	-.071
50	-.069	.444	.174

Table 2 (continued)

Item	Factor 1	Factor 2	Factor 3
51	.568	-.163	.219
52	-.214	.559	-.151
53	.698	.057	.114
54	-.324	.284	.518
55	.479	-.120	.088
56	.220	.364	.196
57	.732	.062	.104
58	.619	.230	-.091
59	.754	.109	.059
60	.685	-.154	-.041
61	.451	-.130	.104
62	.022	.435	-.058
63	-.611	.067	.112
64	-.453	.036	.244
65	.103	.679	.022
66	-.335	.361	-.003
67	-.245	.224	.315
68	.514	.046	-.203
69	.131	.685	-.133
70	-.217	.490	-.224
71	.390	.450	-.006
72	.519	-.151	.188
73	.088	.268	.159
74	.037	.651	-.061
75	.145	.717	-.014

Table 3

MVM Item Communalities

Item	Initial	Extraction
MVM1	0.393	0.231
MVM2	0.503	0.350
MVM3	0.531	0.334
MVM4	0.580	0.374
MVM5	0.575	0.404
MVM6	0.469	0.308
MVM7	0.652	0.431
MVM8	0.491	0.295
MVM9	0.497	0.333
MVM10	0.689	0.403
MVM11	0.647	0.340
MVM12	0.594	0.459
MVM13	0.501	0.384
MVM14	0.590	0.520
MVM15	0.372	0.170
MVM16	0.474	0.323
MVM17	0.366	0.217
MVM18	0.647	0.446
MVM19	0.627	0.527
MVM20	0.505	0.380
MVM21	0.471	0.286
MVM22	0.516	0.222
MVM23	0.515	0.414
MVM24	0.484	0.356
MVM25	0.554	0.384
MVM26	0.473	0.247
MVM27	0.528	0.385
MVM28	0.655	0.433
MVM29	0.661	0.447
MVM30	0.631	0.502
MVM31	0.626	0.490
MVM32	0.527	0.413
MVM33	0.479	0.368
MVM34	0.479	0.391
MVM35	0.578	0.446
MVM36	0.455	0.295
MVM37	0.429	0.185
MVM38	0.568	0.468
MVM39	0.637	0.396
MVM40	0.741	0.651
MVM41	0.453	0.121

Table 3 (continued)

Item	Initial	Extraction
MVM42	0.676	0.575
MVM43	0.586	0.328
MVM44	0.643	0.507
MVM45	0.487	0.331
MVM46	0.650	0.467
MVM47	0.408	0.195
MVM48	0.573	0.487
MVM49	0.368	0.276
MVM50	0.366	0.232
MVM51	0.490	0.397
MVM52	0.507	0.381
MVM53	0.609	0.503
MVM54	0.521	0.453
MVM55	0.500	0.252
MVM56	0.392	0.219
MVM57	0.641	0.550
MVM58	0.594	0.445
MVM59	0.691	0.584
MVM60	0.641	0.494
MVM61	0.409	0.231
MVM62	0.370	0.193
MVM63	0.544	0.390
MVM64	0.451	0.266
MVM65	0.731	0.472
MVM66	0.533	0.243
MVM67	0.413	0.210
MVM68	0.443	0.307
MVM69	0.632	0.504
MVM70	0.459	0.337
MVM71	0.622	0.355
MVM72	0.439	0.327
MVM73	0.230	0.105
MVM74	0.615	0.429
MVM75	0.727	0.536

Table 4

MVM Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.010	-.247
2	—	1.000	.217
3	—	—	1.000

Note. Principal axis factoring with direct oblimin oblique rotation was used.

Table 5

Matrix of Rotated Factor Loadings for the 49 Retained MVM Items, Full Sample (N = 530)

Item	Factor		
	1	2	3
3. I see myself as someone who has many things that are important to me that I can interact with all at the same time.*	0.519	0.213	-0.238
4. It's important for me to live in ways that show what I care about.*	0.599	-0.043	-0.203
5. There are things that matter to me. *	0.631	-0.046	-0.014
12. If I look at my daily life, I can say that there are principles that I live by. *	0.648	0.080	-0.099
16. I think about my purpose in life. *	0.535	-0.126	-0.109
19. I am willing to stick to what's important to me even when there are obstacles in my way.*	0.719	0.077	-0.034
21. Even though I may feel disappointed, I can choose between two actions when both are important to me.*	0.518	0.097	-0.058
25. It's really important to me to care about something.*	0.605	-0.133	-0.050
27. Many things are very important to me.*	0.630	-0.006	-0.099
30. I make choices based on what is important to me.*	0.702	0.086	-0.048
31. It's really important for me to have things I care about. *	0.704	-0.099	-0.027
34. I have many areas of my life that are interconnected.*	0.614	-0.115	0.036
35. I can describe the person that I want to be. *	0.655	0.016	-0.014
39. I know what I want for my life. *	0.553	0.230	-0.070
40. I do things that are important to me.*	0.799	0.147	-0.056
42. I see myself as someone who has many things that are important to me.*	0.754	0.004	-0.153
51. Something is important to me even if I'm not doing it right now.*	0.600	-0.191	0.101
53. I know when I am doing what matters to me.*	0.721	0.045	0.017
55. I am willing to give up things that might feel good for what I care about.*	0.479	-0.103	-0.065
57. I have considered what I want my life to be about.*	0.743	0.039	0.040
58. I see myself as someone who has many things that are important to me and I can interact with them all at the same time.*	0.605	0.267	-0.148
59. I choose to do what is important to me. *	0.773	0.125	-0.009
60. It's important to me to live in ways that show I care.*	0.680	-0.116	-0.206
61. I can have priorities that are different from what others want me to do. *	0.459	-0.127	-0.038
68. I make time for the things that are important to me each day.*	0.496	0.103	-0.210
72. I want to care about things. *	0.553	-0.179	0.104

Note. * items of Factor 1; ** items of Factor 2; *** items of Factor 3.

Table 5 (continued)

Item	Factor		
	1	2	3
1. I feel pressured by others to hold certain values.**	-0.069	0.453	0.092
8. When I am upset it is more difficult to do what's important to me.**	-0.090	0.543	0.017
9. I feel worried when I have to sacrifice something that is important to me for another thing that's important to me.**	-0.273	0.503	0.041
10. I feel like I have to choose between what's most important to me.**	-0.094	0.614	0.170
11. I feel like I have to choose the one thing that is most important to me.**	0.002	0.535	0.253
14. I have trouble balancing different areas of my life.**	0.024	0.703	-0.020
18. I find myself having to choose between areas in my life that matter to me.**	-0.120	0.629	0.191
23. I feel torn between conflicting goals.**	-0.099	0.637	-0.003
24. I find it difficult to incorporate multiple values into single activities.**	0.196	0.542	0.151
28. When I'm upset, I find myself making decisions that I regret.**	0.100	0.667	0.087
32. I find myself in values conflicts.**	0.146	0.613	0.113
36. I have trouble balancing my work and relationships.**	0.109	0.522	0.004
46. When I'm upset it is more difficult to make decisions about what's important.**	0.002	0.705	-0.039
49. I do different things when I am alone from when I am with others.**	0.081	0.509	-0.044
52. I get stressed out when my values seem to conflict with each other.**	-0.233	0.570	0.009
65. When I'm upset, I find myself making decisions that are wrong.**	0.108	0.687	0.112
69. I find myself doubting whether I'm doing the right thing.**	0.099	0.697	-0.055
70. I dislike choosing to do one action I value over another action I value.**	-0.247	0.518	-0.125
74. I find myself asking if I am doing the right thing.**	0.027	0.652	-0.005
75. When I'm upset, I find myself making decisions that are inconsistent with what is important to me.**	0.145	0.731	0.060
6. I have to do very specific things to show what is important to me.***	-0.204	0.147	0.585
44. I must do specific things to show what is important to me.***	-0.141	0.300	0.666
54. I must express my values in a specific way.***	-0.237	0.155	0.595

Note. * items of Factor 1; ** items of Factor 2; *** items of Factor 3.

Table 6

Matrix of Rotated Factor Loadings for the 49 Retained MVM Items: Subsamples 1 and 2

Item	Subsample 1 (n = 265)			Subsample 2 (n = 265)		
	Factor			Factor		
	1	2	3	1	2	3
MVM3	0.497	0.281	-0.233	0.547	0.149	-0.179
MVM4	0.567	0.015	-0.176	0.630	-0.096	-0.194
MVM5	0.612	-0.027	-0.005	0.649	-0.073	0.018
MVM12	0.610	0.069	-0.090	0.691	0.095	-0.109
MVM16	0.512	-0.172	-0.198	0.555	-0.077	-0.052
MVM19	0.716	0.138	-0.028	0.719	0.014	0.001
MVM21	0.482	0.191	-0.050	0.545	0.009	-0.045
MVM25	0.566	-0.087	-0.061	0.642	-0.184	-0.072
MVM27	0.638	-0.043	-0.074	0.636	0.033	-0.152
MVM30	0.702	0.164	-0.062	0.694	0.012	-0.067
MVM31	0.748	-0.010	-0.054	0.652	-0.185	-0.045
MVM34	0.571	-0.085	0.073	0.644	-0.148	0.025
MVM35	0.654	0.039	0.043	0.663	-0.014	-0.041
MVM39	0.526	0.264	-0.028	0.588	0.194	-0.089
MVM40	0.784	0.191	-0.075	0.808	0.109	-0.048
MVM42	0.710	0.006	-0.242	0.793	0.005	-0.072
MVM51	0.606	-0.125	0.126	0.592	-0.273	0.112
MVM53	0.758	0.037	-0.006	0.683	0.050	0.008
MVM55	0.514	-0.056	0.023	0.450	-0.155	-0.116
MVM57	0.705	0.038	0.032	0.776	0.035	0.040
MVM58	0.601	0.335	-0.107	0.610	0.202	-0.167
MVM59	0.784	0.125	-0.015	0.764	0.118	-0.004
MVM60	0.620	-0.112	-0.284	0.739	-0.117	-0.117
MVM61	0.455	-0.115	-0.031	0.466	-0.150	-0.003
MVM68	0.439	0.127	-0.177	0.547	0.097	-0.287
MVM72	0.559	-0.192	0.055	0.545	-0.173	0.121
MVM1	-0.015	0.396	0.121	-0.111	0.511	0.026
MVM8	-0.031	0.530	-0.009	-0.137	0.560	0.048
MVM9	-0.228	0.483	0.115	-0.310	0.536	-0.081
MVM10	-0.009	0.623	0.289	-0.177	0.618	-0.039
MVM11	0.119	0.514	0.311	-0.115	0.556	0.083
MVM14	0.086	0.668	-0.014	-0.024	0.736	0.000
MVM18	-0.067	0.592	0.294	-0.163	0.661	0.072

Table 6 (continued)

Item	Subsample 1 (<i>n</i> = 265)			Subsample 2 (<i>n</i> = 265)		
	Factor			Factor		
	1	2	3	1	2	3
MVM23	-0.072	0.586	0.089	-0.109	0.682	-0.060
MVM24	0.207	0.550	0.175	0.190	0.526	0.165
MVM28	0.095	0.679	0.007	0.115	0.643	0.268
MVM32	0.170	0.635	0.118	0.127	0.583	0.146
MVM36	0.108	0.519	0.033	0.108	0.528	-0.031
MVM46	-0.043	0.737	-0.097	0.056	0.667	0.135
MVM49	0.113	0.539	-0.015	0.046	0.482	-0.065
MVM52	-0.258	0.591	0.049	-0.201	0.552	0.024
MVM65	0.081	0.696	0.027	0.137	0.667	0.308
MVM69	0.091	0.723	-0.055	0.115	0.665	0.026
MVM70	-0.247	0.499	-0.045	-0.233	0.548	-0.182
MVM74	0.003	0.668	0.019	0.060	0.627	0.067
MVM75	0.138	0.774	-0.058	0.157	0.678	0.294
MVM6	-0.156	0.095	0.532	-0.267	0.186	0.508
MVM44	-0.065	0.308	0.655	-0.229	0.267	0.624
MVM54	-0.210	0.128	0.657	-0.267	0.159	0.539

Table 7

Item and Scale Means and Standard Deviations, Valuing Scale, Subsample 1 (n = 265)

Item	Mean	SD
3. I see myself as someone who has many things that are important to me that I can interact with all at the same time.	4.536	1.073
4. It's important for me to live in ways that show what I care about.	4.925	1.095
5. There are things that matter to me. *	5.509	0.926
12. If I look at my daily life, I can say that there are principles that I live by. *	4.951	1.056
16. I think about my purpose in life.	4.917	1.045
19. I am willing to stick to what's important to me even when there are obstacles in my way.*	4.966	0.947
21. Even though I may feel disappointed, I can choose between two actions when both are important to me.	4.509	0.942
25. It's really important to me to care about something.	4.925	1.216
27. Many things are very important to me.*	4.932	1.031
30. I make choices based on what is important to me.*	4.770	0.971
31. It's really important for me to have things I care about. *	4.977	1.033
34. I have many areas of my life that are interconnected.	4.751	1.007
35. I can describe the person that I want to be. *	4.966	1.092
39. I know what I want for my life. *	4.789	1.259
40. I do things that are important to me.	5.045	0.891
42. I see myself as someone who has many things that are important to me.*	4.894	1.021
51. Something is important to me even if I'm not doing it right now.*	4.849	1.059
53. I know when I am doing what matters to me.*	4.959	0.974
55. I am willing to give up things that might feel good for what I care about.	4.593	1.091
57. I have considered what I want my life to be about.*	5.094	0.994
58. I see myself as someone who has many things that are important to me and I can interact with them all at the same time.	4.577	1.035
59. I choose to do what is important to me. *	4.974	0.927
60. It's important to me to live in ways that show I care.*	4.713	1.000
61. I can have priorities that are different from what others want me to do.	4.713	1.094
68. I make time for the things that are important to me each day.	4.423	1.106
72. I want to care about things. *	4.981	1.050
TOTAL SCALE	126.242	17.007

Note. SD = standard deviation. * items retained for final scale.

Table 8

Matrix of Item Covariances, Valuing Scale, Subsample 1

Item	3	4	5	12	16	19	21	25	27	30	31	34	35	39	40	42	51	53	55	57	58		
3	1.151																						
4	0.571	1.199																					
5	0.414	0.592	0.857																				
12	0.436	0.504	0.362	1.115																			
16	0.276	0.471	0.364	0.405	1.092																		
19	0.401	0.418	0.415	0.510	0.285	0.897																	
21	0.353	0.285	0.228	0.396	0.236	0.464	0.887																
25	0.325	0.472	0.470	0.530	0.482	0.399	0.255	1.479															
27	0.461	0.457	0.455	0.440	0.400	0.388	0.254	0.518	1.064														
30	0.379	0.437	0.337	0.477	0.326	0.500	0.413	0.456	0.469	0.943													
31	0.334	0.491	0.387	0.495	0.456	0.503	0.337	0.710	0.559	0.605	1.068												
34	0.260	0.386	0.370	0.423	0.248	0.378	0.241	0.455	0.381	0.363	0.430	1.014											
35	0.367	0.410	0.389	0.426	0.342	0.518	0.298	0.505	0.411	0.500	0.537	0.454	1.192										
39	0.455	0.348	0.332	0.285	0.270	0.531	0.373	0.268	0.270	0.512	0.510	0.292	0.671	1.584									
40	0.392	0.424	0.378	0.449	0.352	0.502	0.318	0.382	0.435	0.541	0.562	0.314	0.585	0.684	0.793								
42	0.470	0.431	0.353	0.476	0.370	0.436	0.285	0.515	0.641	0.506	0.615	0.390	0.500	0.481	0.554	1.042							
51	0.207	0.371	0.316	0.390	0.256	0.434	0.251	0.356	0.365	0.386	0.421	0.474	0.423	0.354	0.359	0.420	1.121						
53	0.371	0.357	0.366	0.456	0.375	0.529	0.336	0.482	0.444	0.479	0.579	0.403	0.552	0.594	0.566	0.537	0.551	0.949					
55	0.293	0.352	0.254	0.408	0.296	0.429	0.337	0.348	0.343	0.383	0.400	0.258	0.335	0.353	0.397	0.411	0.469	0.419	1.189				
57	0.267	0.310	0.361	0.387	0.398	0.492	0.281	0.492	0.355	0.435	0.502	0.380	0.602	0.626	0.511	0.510	0.480	0.553	0.402	0.987			
58	0.574	0.324	0.258	0.411	0.253	0.440	0.390	0.358	0.418	0.399	0.456	0.357	0.512	0.623	0.500	0.561	0.296	0.498	0.285	0.457	1.071		
59	0.435	0.400	0.389	0.412	0.369	0.495	0.347	0.381	0.464	0.543	0.526	0.403	0.495	0.510	0.566	0.543	0.454	0.537	0.387	0.540	0.568		
60	0.307	0.429	0.298	0.422	0.438	0.384	0.192	0.440	0.450	0.400	0.531	0.360	0.403	0.386	0.452	0.538	0.419	0.465	0.315	0.448	0.359		
61	0.155	0.270	0.336	0.164	0.344	0.343	0.177	0.297	0.329	0.301	0.384	0.273	0.354	0.299	0.293	0.341	0.320	0.412	0.250	0.387	0.303		
68	0.351	0.346	0.280	0.384	0.259	0.314	0.295	0.460	0.313	0.359	0.385	0.310	0.283	0.287	0.344	0.393	0.242	0.275	0.328	0.380	0.486		
72	0.253	0.374	0.370	0.336	0.343	0.352	0.180	0.518	0.431	0.344	0.473	0.382	0.352	0.276	0.312	0.403	0.546	0.378	0.307	0.422	0.200		

Table 8 (continued)

Item	59	60	61	68	72
59	0.859				
60	0.511	1.001			
61	0.447	0.323	1.198		
68	0.382	0.319	0.228	1.222	
72	0.409	0.404	0.370	0.163	1.102

Table 9

Item and Scale Means and Standard Deviations, Freedom from Values Conflict Scale, Subsample 1 (n = 265)

Item	Mean	SD
1. I feel pressured by others to hold certain values.	3.664	1.418
8. When I am upset it is more difficult to do what's important to me.	3.125	1.284
9. I feel worried when I have to sacrifice something that is important to me for another thing that's important to me.	2.879	1.228
10. I feel like I have to choose between what's most important to me.*	3.302	1.398
11. I feel like I have to choose the one thing that is most important to me.	3.676	1.477
14. I have trouble balancing different areas of my life.*	3.396	1.392
18. I find myself having to choose between areas in my life that matter to me.*	3.211	1.271
23. I feel torn between conflicting goals.*	3.430	1.344
24. I find it difficult to incorporate multiple values into single activities.*	4.045	1.157
28. When I'm upset, I find myself making decisions that I regret.*	3.577	1.383
32. I find myself in values conflicts.*	3.766	1.215
36. I have trouble balancing my work and relationships.	3.721	1.432
46. When I'm upset it is more difficult to make decisions about what's important.*	3.638	1.392
49. I do different things when I am alone from when I am with others.	3.377	1.368
52. I get stressed out when my values seem to conflict with each other.*	2.898	1.256
65. When I'm upset, I find myself making decisions that are wrong.*	3.796	1.336
69. I find myself doubting whether I'm doing the right thing.	3.430	1.333
70. I dislike choosing to do one action I value over another action I value.	2.879	1.145
74. I find myself asking if I am doing the right thing.*	3.313	1.304
75. When I'm upset, I find myself making decisions that are inconsistent with what is important to me.*	3.800	1.326
TOTAL SCALE	68.925	16.670

Note. SD = standard deviation. * items retained for final scale.

Table 10

Matrix of Item Covariances, Freedom from Values Conflict Scale, Subsample 1

Item	1	8	9	10	11	14	18	23	24	28	32	36	46	49	52	65	69	70	74	75		
1	2.012																					
8	0.372	1.647																				
9	0.342	0.686	1.508																			
10	0.575	0.587	0.847	1.954																		
11	0.523	0.344	0.669	1.371	2.182																	
14	0.588	0.602	0.533	0.725	0.542	1.937																
18	0.336	0.413	0.609	1.250	1.107	0.674	1.614															
23	0.459	0.454	0.552	0.771	0.674	0.810	0.738	1.807														
24	0.447	0.366	0.256	0.536	0.609	0.747	0.521	0.632	1.339													
28	0.562	0.769	0.358	0.700	0.699	0.861	0.552	0.743	0.694	1.912												
32	0.686	0.401	0.385	0.685	0.734	0.824	0.678	0.647	0.666	0.677	1.475											
36	0.387	0.508	0.337	0.641	0.542	0.914	0.586	0.515	0.623	0.654	0.612	2.051										
46	0.567	0.901	0.539	0.754	0.541	0.940	0.581	0.721	0.482	1.233	0.657	0.774	1.936									
49	0.430	0.548	0.307	0.514	0.509	0.759	0.564	0.526	0.513	0.721	0.600	0.704	0.830	1.872								
52	0.466	0.448	0.662	0.720	0.486	0.726	0.647	0.643	0.395	0.601	0.461	0.547	0.698	0.433	1.577							
65	0.469	0.673	0.312	0.596	0.547	0.770	0.524	0.569	0.657	1.300	0.623	0.742	1.278	0.816	0.585	1.784						
69	0.528	0.564	0.446	0.760	0.670	0.901	0.674	0.845	0.647	0.713	0.904	0.636	0.891	0.667	0.658	0.834	1.776					
70	0.221	0.330	0.432	0.556	0.362	0.503	0.503	0.469	0.286	0.286	0.388	0.466	0.479	0.417	0.654	0.400	0.700	1.311				
74	0.375	0.552	0.557	0.742	0.693	0.660	0.676	0.778	0.512	0.663	0.718	0.508	0.781	0.491	0.691	0.784	1.244	0.587	1.701			
75	0.645	0.699	0.430	0.701	0.692	0.883	0.603	0.583	0.668	1.298	0.794	0.698	1.283	0.814	0.601	1.308	1.003	0.464	0.881	1.759		

Table 11

Item and Scale Means and Standard Deviations, Flexibility in Valuing Scale, Subsample 1 (n = 265)

Item	Mean	SD
6. I have to do very specific things to show what is important to me.	3.091	1.243
44. I must do specific things to show what is important to me.	3.223	1.225
54. I must express my values in a specific way.	3.106	1.123
TOTAL SCALE	9.419	2.905

Note. SD = standard deviation.

Table 12

Matrix of Item Covariances, Flexibility in Valuing Scale, Subsample 1

Item	MVM6	MVM44	MVM54
MVM6	1.614	—	—
MVM44	0.703	1.550	—
MVM54	0.627	0.747	1.278

Table 13

Means and Standard Deviations for the Total Sample on Comparison Measures

Scale	Mean	SD	N
VLQ-I	79.52	13.82	505
VLQ-C	69.86	17.76	505
VLQ-Comp	58.25	20.03	505
PVQ-VP	8.15	2.79	489
QOLI	44.54	13.56	502
KIMS	121.45	13.63	504
PANAS-PA	24.16	7.45	500
PANAS-NA	19.11	5.97	500
AAQ-II	30.41	10.12	507
DASS-T	24.01	22.05	496
DASS-D	7.52	8.52	496
DASS-A	6.14	6.94	496
MC-SDS	15.66	5.07	492

Note. SD = standard deviation; VLQ-I = Valued Living Questionnaire-Importance; VLQ-C = Valued Living Questionnaire-Consistency; VLQ-Comp = Valued Living Questionnaire-Composite; PVQ-VP = Personal Values Questionnaire-Values Purity; QOLI = Quality of Life Inventory; KIMS = Kentucky Inventory of Mindfulness Skills; PANAS-PA = Positive and Negative Affect Schedule-Positive Affect; PANAS-NA = Positive and Negative Affect Schedule-Negative Affect; AAQ-II = Acceptance and Action Questionnaire, second edition; DASS-T = Depression Anxiety Stress Scales-total score; DASS-D = Depression Anxiety Stress Scales-depression; DASS-A = Depression Anxiety Stress Scales-anxiety; MC-SDS = Marlowe-Crowne Social Desirability Scale.

Table 14

Convergent and Discriminant Correlations between MVM Scales and Comparison Measures

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. MVM-V	.94															
2. MVM-FC	-.03	.92														
3. MVM-FV	-.33***	.34***	.72													
4. VLQ-I	.24***	-.01	-.20***	.84												
5. VLQ-C	.12*	.15**	-.14**	.53***	.86											
6. VLQ-Comp	.19***	.10*	-.19**	.82***	.89***	.89										
7. PVQ-VP	.39***	.11*	.01	.30***	.06	.19	.93									
8. QOLI	.07	.32**	.01	.46***	.65***	.69***	.19	.88								
9. KIMS	.30***	.35***	-.03	.15**	.20***	.20***	.20***	.47***	.77							
10. PANAS-PA	.12**	.02	-.23***	.22***	.28***	.29***	.04	.28*	.15***	.83						
11. PANAS-NA	-.02	-.22***	-.20***	.09*	.12**	.11*	-.12**	-.15	-.14**	.68***	.83					
12. AAQ-II	-.21***	-.50***	-.13**	-.05	-.22***	-.19***	-.16***	-.45***	-.43***	.05	.37***	.86				
13. DASS-T	-.15**	-.42***	-.09*	-.08	-.23***	-.21***	-.19***	-.32*	-.34***	.02	.38***	.62***	.97			
14. DASS-D	-.21***	-.39***	-.03	-.11*	-.27***	-.26***	-.21***	-.38**	-.37***	-.02	.33***	.60***	.90***	.95		
15. DASS-A	-.17***	-.29***	-.07	-.07	-.12**	-.14**	-.23***	-.23*	-.24***	.05	.31***	.49***	.86***	.68***	.91	
16. MC-SDS	.02	.30***	-.06	.16**	.22***	.21***	.07	.22	.34***	.27***	.06	-.25***	-.23***	-.21***	-.13**	.75

Note. Diagonal values are α for the scale; MVM-V= Meta-Valuing Measure-Valuing Scale; MVM-FC= Meta-Valuing Measure-Freedom from Values Conflict Scale; MVM-FV= Meta-Valuing Measure-Flexibility in Valuing Scale; VLQ-I = Valued Living Questionnaire-Importance; VLQ-C = Valued Living Questionnaire-Consistency; VLQ-Comp = Valued Living Questionnaire-Composite; PVQ-VP = Personal Values Questionnaire-Values Purity; QOLI = Quality of Life Inventory; KIMS = Kentucky Inventory of Mindfulness Skills; PANAS-PA = Positive and Negative Affect Schedule-Positive Affect; PANAS-NA = Positive and Negative Affect Schedule-Negative Affect; AAQ-II = Acceptance and Action Questionnaire, second edition; DASS-T = Depression Anxiety Stress Scales-total score; DASS-D = Depression Anxiety Stress Scales-depression; DASS-A = Depression Anxiety Stress Scales-anxiety; MC-SDS = Marlowe-Crowne Social Desirability Scale.

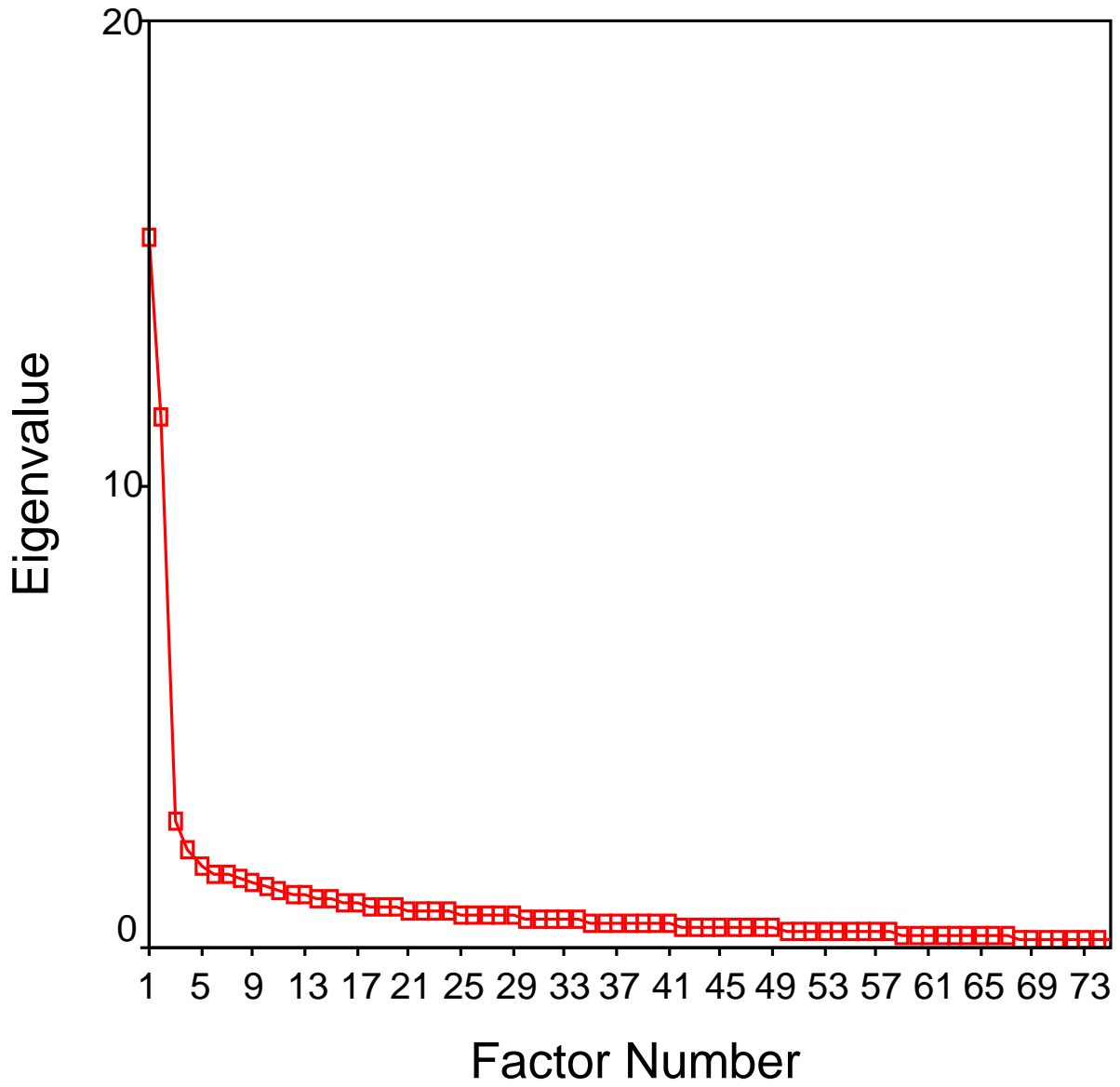


Figure 1. Scree plot of eigenvalues suggesting a three-factor solution for EFA of MVM items.

APPENDIX
DEMOGRAPHICS FORM

Major: _____

Other/Non-degree seeking: _____

Classification (Freshman, Sophomore, Junior, Senior)

Age: _____ (You must be 18 to participate in this study.)

Sex:

- Male
- Female

Shoe size: _____ (pull down choices)

Last 4 digits of your phone number: _____

Ethnic/racial background:

- Asian/Pacific Islander
- Black/African American
- Hispanic/Latino
- Middle Eastern/Arab
- Native American
- White/Caucasian
- Biracial, please specify _____
- Other, please specify _____

Is English your first language? (1) Yes (2) No (please specify _____)

Current Marital Status:

- Single/Never married
- Cohabiting
- Married
- Divorced
- Widowed

Approximate personal yearly income:

- <20,000
- 20,000-50,000
- 50,000-100,000
- 100,000-200,000
- >200,000

Does someone other than you provide most (more than 50%) of your income?

- Yes
- No

What is this person's relationship to you? _____

If yes, what is their approximate yearly income?

- <20,000
- 20,000-50,000
- 50,000-100,000
- 100,000-200,000
- >200,000

Parent's highest degree earned or highest grade in school completed:

- (1) 8th grade (2) 9th grade (3) 10th grade (4) 11th grade
- (5) 12th grade (H.S. diploma or GED) (6) technical/trade school diploma
- (7) community college degree (8) university/college degree, specify _____
- (9) advanced degree, specify _____
- (10) other, please specify _____

Additional parent's highest degree earned or highest grade in school completed:

- (1) 8th grade (2) 9th grade (3) 10th grade (4) 11th grade
- (5) 12th grade (H.S. diploma or GED) (6) technical/trade school diploma
- (7) community college degree (8) university/college degree, specify _____
- (9) advanced degree, specify _____
- (10) other, please specify _____
- (11) no additional parent/caregiver

Have you ever attended mental health counseling/therapy?

- Yes
- No

If yes, please indicate the type of counselor you saw:

- educational/guidance counselor
- social worker
- couples/marriage counselor
- clergy member
- licensed professional counselor
- psychologist
- psychiatrist
- other (please specify _____)

If yes, for how long did you attend counseling:

- 1-3 sessions or <1 month
- 4-12 sessions or 1-3 months
- 3-6 months
- 6 months-1 year
- 1-2 years
- 2 years or more

Which category best describes your religious preference?

- Agnostic (1)
- Buddhism (2)
- Christianity (3) Specify Denomination _____
- Hinduism (4)
- Islam (5)
- Judaism (6)
- Other (7) Specify _____
- None (8)

How often do you attend religious services?

- More than once per week (1)
- About once per week (2)
- About once per month (3)
- About once or twice per year (4)
- Seldom (less than once per year) (5)
- Never (6)

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