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Exploration of the Relationship between Moral Judgment Development and Attention

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EXPLORATION OF THE RELATIONSHIP BETWEEN MORAL JUDGMENT
DEVELOPMENT AND ATTENTION

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree
Specialist in Education

By
Lauren I. Clark

August 2010

EXPLORATION OF THE RELATIONSHIP BETWEEN MORAL JUDGMENT
DEVELOPMENT AND ATTENTION

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Research in moral psychology has focused on understanding what factors assist in the development of moral action and decision making. The purpose of this study was to address whether variability in attention relates to moral judgment development. The reason for exploring moral judgment development was to further explore the research of Thoma and Bebeau (2008) who documented that the moral development scores of college and graduate students has been declining over time, with more college-aged students scoring in the lower levels of moral reasoning. Attention was chosen as a viable topic of research, based on the writings of Carr (2008a) who suggests that technology has had an impact on the way that individuals read and process information.

College students from Western Kentucky University were recruited via the Psychology Department Study Board. Participants first took the Defining Issues Test-2 (DIT2) online and then scheduled a subsequent session in the laboratory to take the Test of Everyday Attention (TEA). The DIT2 assesses three levels of moral reasoning advancing by level: Personal Interests, Maintaining Norms, and Postconventional schemas. The TEA assesses four different types of attention: divided attention, attentional switching, selective attention, and sustained attention. In a sample of 79 college students, results revealed that stronger attention abilities were related to higher postconventional reasoning. However, decreases in attention were not related to lower

personal interests reasoning. Attentional switching, selective attention, and sustained attention were particularly influential where postconventional reasoning was concerned. The trends observed in this study were somewhat expected as moral judgment development is regarded and verified as a cognitive intellectual process.

In light of the information provided by the results of this study, future studies are recommended to determine how efforts to facilitate improved attention might ultimately translate to improved moral judgment development. Research has shown that interventions aimed at improving attention are successful (Kerns, Eso, & Thomson, 1999). In conclusion, this study supports the notion that attention does pertain to moral judgment scores as inferred by the DIT2. The effect of the TEA scores on the DIT2 postconventional scores was strong ($R^2 = .237$).

Introduction

Morality is considered to be a topic of interest because of its many implications in decision making. The function of morality is to provide basic guidelines for determining how conflicts between individuals are to be handled and for maximizing the mutual benefits of people living together in groups (Rest, Deemer, Barnett, Spickelmier, & Volker, 1986). Moral judgment development refers to changes in reasoning and decision-making concerned with issues of morality. A large area of research in moral psychology has focused on understanding what factors assist in the development of moral judgment (Rest, Narvaez, Bebeau, & Thoma, 1999; Thoma, 2002).

Generally, there are considered to be two types of moral considerations: micromorality and macromorality. Micromorality is typically viewed as having to do with the face-to-face relationships that people experience in their daily encounters. Examples of micromorality include courtesy toward others, being on time for obligations, and acting in a decent, responsible manner. Micromorality is seen as how people view others as someone of personal virtue; in effect, this is seen with the promotion of virtuous behaviors of a moral leader. Macromorality, on the other hand, places an emphasis on the formal structure of society as defined by institutions, rules, and roles (Rest et al., 1999). Some examples of macromorality include the U.S. Constitution's Bill of Rights, George Wallace's law-and-order movement, and Richard Nixon's silent majority. Macromorality is believed to be manifested mostly in the behavior of the individual as it affects the structure of society and public policy. These issues are most often evident in elections, referendums, polls, and public service/political activities, especially in relationship to impartiality and acting on principle (Rest et al., 1999).

The focus of this research is on macromoral judgment development, which has been studied within the cognitive developmental approach to moral judgment development. The cognitive developmental approach to moral judgment development is the study of the products of cognitive processes that lead to moral decision making as opposed to the implicit processes that are involved in moral decision making (Rest et al., 1999). The main reason for studying macromorality is that many moral debates that frame social systems are centered within this area, rather than virtues-based morality (Rest et al., 1999).

There are two prominent cognitive developmental researchers of the construct of macromorality who have contributed important theories to this particular area of research. The first is Lawrence Kohlberg, who is known for his six stages of moral judgment development. Kohlberg proposed that moral thinking is not based on decisions, but rather the reasoning behind these decisions. The second is James Rest, who pioneered what is known as the neo-Kohlbergian approach to moral judgment development (Thoma, 2002). Rest's neo-Kohlbergian approach is rooted in the research done by Kohlberg, and while different, the two theories of moral judgment development share some similarities (Rest et al., 1999).

Lawrence Kohlberg is known for his six stages of moral judgment development, and individuals are expected to progress through these stair-step stages as they grow older. The six stages are divided into three levels: preconventional thinking, conventional thinking, and postconventional thinking. There are two stages of development at each level. According to Kohlberg's theory, the stages form a logical

hierarchy. This implies that, at each new stage, individuals reorganize their views of morality, realizing that previous beliefs are inadequate or immature. These stages form an invariant sequence, initially beginning with moral beliefs that are self-serving or believed to be enforced by authority figures. It ends with an understanding of rules and laws created with the purpose of upholding basic principles of fairness, justice, and humanity. According to Kohlberg, moral judgment development is synonymous with moral development. In other words, Kohlberg believed that as our ability to reason and make decisions about moral situations advances, so too does our moral development in general (Colby & Kohlberg, 1987; Kay, 1982; Rest et al., 1999).

At the preconventional level, Stage 1 judgments are based on whether a behavior will result in a reward or punishment. At Stage 2, moral decisions are reached when the consequences are weighed in light of benefiting one's self or loved ones. These stages are considered to characterize children of early school age. The major concern at this level is the personal consequences of a person's behavior. The second level, conventional thinking, demonstrates growth in the concept of moral judgment development. At Stage 3, judgments are based on the approval or disapproval of authorities. Stage 4 involves decision-making based on whether a behavior upholds or violates the laws of society. In this stage, the focus is on following rules and obeying authority. At the postconventional level, moral judgments are based on preserving social contracts based on collaborative cooperation in Stage 5. At Stage 6, the individual develops a sense of universal ethical principles that apply across time and cultures. It is

at this level that individuals have an acceptance of moral principles that are a part of a person's ideology rather than simply being imposed by the social order.

The Kohlbergian approach relies on an interview format known as the Moral Judgment Interview (MJl, Colby & Kohlberg, 1987) as its means for measuring moral judgment development. In scoring the MJl, the focus is on the mental operations that individuals used to explain how they came to their decisions regarding a moral dilemma. The MJl is a free-flow interview format where participants are asked to solve dilemmas and explain their choices (Rest et al., 1999). According to Kohlberg, the role of the psychologist is to be candid, ask questions about the responses of the participants, and then report the participants' theories about their inner processes (Colby & Kohlberg, 1987). Critics of the interview format commented on the difficulty of scoring the interviews without bias. Another criticism is that people are often unable to explain the processes of how they came to a moral decision.

The neo-Kohlbergian approach to moral judgment development has its roots in the Kohlbergian stages of development. Like Kohlberg, Rest viewed moral judgment development as a social and cognitive construct that followed a developmental progression from a narrow, self-focused view of the world to a reliance on postconventional moral principles, with an increase in understanding of the broader social world (Thoma, 1994). Rest believed that much of moral judgment development occurs in adolescence and is a result of increased understanding of and exposure to politics and the world overall in conjunction with engagement and dialogue with others on these various considerations. Similar to Kohlberg, the neo-Kohlbergian approach assumes that the best

way to understand morality is to focus on the cognitive component with regard to how people construct their moral beliefs (Rest et al., 1999).

There are several amendments to the neo-Kohlbergian approach that distinguish it from Kohlberg's theory of moral judgment development. One important distinction is that moral judgment development is considered to be but one component of moral development. Rest (1986) developed a Four Component Model to further understand and explain the construct of moral development as a whole. This model suggests that moral development and functioning are the result of four component processes: moral sensitivity, moral judgment, moral motivation, and moral character (Thoma, 1994). Each of these components operates together to contribute uniquely to moral functioning. Moral sensitivity refers to one's awareness that a moral situation is occurring. Moral judgment refers to the development of those processes leading to the judgment of what one should do. Moral motivation references the motivation to act morally as a result of the internalization and prioritization of moral values relative to others. Moral character is the identification of and following through on a plan of action (i.e., implementation). In advancing this model, Rest (1986) illustrates how moral development is more accurately conceived as the interaction of various cognitive, affective, and behavioral forces.

The neo-Kohlbergian approach also differs from Kohlberg in its description of moral judgment development as a construct. With the neo-Kohlbergian approach to moral judgment development, the focus is on schemas rather than the hard stages found with Kohlberg's theory of moral judgment development. Schemas are defined as general knowledge structures in the long term memory. In other words, schemas are what people

come to know as they form ideas and opinions based on their experiences, expectations, and conceptual knowledge. The schemas differ from the previous stage theories in that the development is no longer considered a “staircase” process but rather “shifting distributions” (Rest et. al, 1999).

Moral judgment development is not considered to be fixed at any one point in development, and is also combined with the idea that individuals may have beliefs rooted in multiple schemata at the same time (Rest et al., 1999). This allows for more flexibility in moral reasoning as opposed to a hard stage model (such as Kohlberg’s) that does not allow for reversal or skipping any stages. Ultimately, Rest identified three different moral judgment schemas that individuals reference as they develop. These include the Personal Interests, Maintaining Norms, and Postconventional schemas.

The Personal Interests schema is most regularly referenced during childhood. It is considered to be aligned with Kohlberg’s Stage 2 and Stage 3, which are usually resolved during the beginning stages of childhood (Crowson, DeBacker, & Thoma, 2007). This schema is referred to as “presociocentric” (Rest et al., 1999, p. 305). Individuals in this schema typically are oriented to how something affects them personally, as well as emphasizing obedience to avoid punishment. Close attention to their own relationships is also a focus for individuals in this schema (Thoma & Bebeau, 2008). Much of the focus is on actions that will serve one’s own best interest.

The Maintaining Norms schema is akin to Kohlberg’s Stage 4, which emphasizes laws and other socially defined regulatory structures that are purposed in informing moral decisions (Rest et al., 1999; Thoma & Bebeau, 2008). This schema has multiple

components. The first of these components is the “need for norms.” According to Rest et al. (1999), society must have a set of standards and norms in place to ensure cooperation among individuals. This standard lends itself to planning so that individuals within society value stability, predictability, safety and coordination. Individuals not only need to get along with people they know, but they also must learn to cooperate with strangers, establishing a society-wide system of cooperation amongst people who do not know each other in a personal, face-to-face way. Formal law provides a way to categorize people in a uniform way that is knowledgeable and applicable to everyone. The law is set up so that, no matter how individuals understand it, they are both protected by it as well as obligated to follow it. The law also sets up partial reciprocity, which presents the idea that people obey the law and expect others to do the same. Through this system, the society in general will benefit from everyone’s mutual labor of doing his or her duty. Rest et al. (1999) called this a partial reciprocity as opposed to a “full” reciprocity because obeying the law under the maintaining norms schema may not serve every individual equally.

The last component of the Maintaining Norms schema relates to the duty orientation that individuals feel for the social system. Those who operate under the Maintaining Norms schema follow the laws of society rigidly because that is what defines morality for them. Rest et al. (1999) stated “one must obey authorities, not necessarily out of respect for the personal qualities of the authority, but out of respect for the social system” (p. 306). In essence, individuals define their morality through the

order and law of society. It is through this belief system that these individuals oppose anyone who threatens the social order and, ultimately, their perceived morality.

At the peak of moral judgment is the Postconventional schema. Postconventional thinking is a group of ideals that individuals share for the cooperation of society and that those ideals are modifiable through debate, tests of logical consistency, mutual acceptance, and the personal experience of those involved in the community. As with the Maintaining Norms schema, the Postconventional schema is made up of four elements of reference. The first element is related to the primacy of moral criteria in which an individual realizes that the standards of society are arranged in a fashion that stipulates the way those under those standards are to behave. However, the Postconventional thinker also realizes that there are exceptions to the proposed norms and that just because norms require that people behave a certain way does not mean that it is moral for a person to behave that way. At the Postconventional level, individuals see the laws and standards as modifiable and negotiable when they are not serving the best interest of the community (Rest et al., 1999).

The second element is that these thinkers are appealing to an ideal. In other words, postconventional thinking aspires to achieve goals that create the greatest good for all. Rest et al. (1999) use examples such as guaranteeing minimal rights and protection for everyone, engendering caring and intimacy among people, fair treatment, providing for the needy, furthering the common good, and actualizing personhood to demonstrate that a postconventional thinker is not merely an individual who is opposing the current system's establishment. The third element of postconventional thinkers is shareable

ideals. Instead of a personal intuition or idiosyncratic preference, these individuals justify their acts by arguing that their behavior furthers the cooperation, the common good, and that their acts respect others (Crowson et al., 2007). Postconventional thinkers behave in such a way that is selfless because they view their behavior as promoting the overall well-being of everyone. The last element is known as full reciprocity. Partial reciprocity of the Maintaining Norms schema proposed that society will work if everyone abides by the law. However, the Postconventional thinker realizes the likelihood of a subjective law that favors certain individuals over others. Hence, the individual under this schema argues that certain laws should be modified to provide equality among all individuals (Rest et al., 1999).

Another important distinction of the neo-Kohlbergian approach relative to Kohlberg's approach is the means of measurement that is used for indexing moral judgment development. The neo-Kohlbergian approach relies on an objective, paper and pencil measurement known as the Defining Issues Test (DIT, Rest et al., 1999) and a subsequent and updated measure known as the Defining Issues Test 2 (DIT2; Rest et al., 1999). The DIT consists of six stories or dilemmas in which the protagonist of the story has a moral issue. Participants are asked to rank the 12 items that follow each story in terms of their importance in solving the moral dilemma. They also have to rank the four most important items. Data provided are used in indexing perceived importance of each of the three moral judgment schema.

The test requires an eighth grade reading ability, meaning that it is a measure intended to be used with adolescents and adults. The scores are normed, and the manual

provides extensive data on how this was done. It was noted that scores on the DIT are positively correlated with education, IQ, and age (Rest, Thoma, Davison, Robbins, & Swanson, 1987). According to the Defining Issues Test-2 manual, the reliability of the DIT is good, with test-retest reliability ranging from .71 to .82 for the P index, a measure of postconventional reasoning (Rest et al., 1987). Criterion-group validity was established by comparing groups of students at different levels of academic training. Significant differences were found among the groups, with more developed students showing higher scores. Individuals are not able to fake scores on the DIT, and it was noted that if participants receive too high of a score, it indicates that they did not understand the directions.

Purpose of the Study

The current study considered moral judgment development according to the neo-Kohlbergian approach. Specifically, this study addressed some recent trends (Thoma & Bebeau, 2008) in DIT research among college students and graduates, which noted increases in reasoning according to the Personal Interests schema in conjunction with decreases in Postconventional schema reasoning. These findings are cause for concern, as higher education has generally been noted to be an important influence on and contributor to moral judgment development.

Before addressing the findings of Thoma and Bebeau (2008), however, it is important to provide some background information on college attendance and its noted influence on moral judgment development, as indexed according to the neo-Kohlbergian approach. One of the main missions of higher education is to develop individuals who

will both think and act in a moral manner. Students typically make significant gains in their abilities to reason critically, flexibly, and abstractly during college (Pascarella & Terenzini, 1991). Much of the previous research on the Defining Issues Test shows that higher education experiences correlate with higher moral judgment scores (Rest, 1998). This is supported by the neo-Kohlbergian approach that much of growth in moral development that occurs in young adulthood is a result of increased understanding of and exposure to politics and the world (Thoma, 1994). This developmental growth has been considered to take place during the second decade of life (Rest et al., 1999). Historically, for many college students, the exposure to a broader social world on a college campus enhances their current knowledge, and many students become interested in finding a life philosophy through exploration. Pascarella and Terenzini (1991) give detailed insight into the increasing moral judgment development scores of college students. These authors demonstrated that students at higher levels of education typically made higher scores on the DIT. The authors were also able to categorize which type of students make higher scores on the DIT. Examples of these types of characteristics include older students (juniors and seniors as opposed to freshmen), students who are more socially connected, and students who are likely to complete college (Pascarella & Terenzini, 1991). These characteristics are not the only ones that have been explored, however, and many of these have been empirically tested.

Most research dealing with cognitive development starts out by looking at age trends. A study by Rest et al. (1986) explores the research that shows the empirical findings of the relationship between age trends and increasing scores on the DIT.

Because moral judgment development is a developmental theory, it is important to demonstrate that people do change over time. There has been a lot of evidence supporting the age trend, including a meta-analysis of over 6,000 subjects in a cross-sectional data collection that showed that age/education accounts for 52% of the variance of DIT scores. About a dozen other longitudinal studies of the DIT also show upward trends, as well as several cross-cultural studies (Rest et al., 1986). Because of the extensive amount of research that supports the age trend, one must conclude that the evidence that there is a general developmental trend in moral judgment.

The age trend indicates that people do develop in their moral judgment over time, but it does not indicate why or how. According to Piaget, cognitive development takes place because humans are active interpreters of their experiences (Rest et al., 1986). Morality researchers have been unable to determine precisely what creates the impetus for moral development, but they have been able to determine some correlates that play a role in increasing moral development. The number of years of formal education has been found to be one of the strongest and most consistent correlates of moral development (Rest, 1998). Several studies have been undertaken to try to gain a better grasp of the relation between formal education and moral judgment development.

King and Mayhew (2002) reviewed 172 studies that used the DIT to investigate the moral development of undergraduate college students in order to provide an organizational framework for analyzing educational contexts in higher education. They found that dramatic gains in moral judgment are associated with college participation, even after controlling for age and entering level of moral judgment. It is common to find

that most American colleges and Universities embrace a mission that includes moral development (King & Mayhew, 2002; Pascarella & Terenzini, 1991). Several longitudinal studies suggest that collegiate experiences do promote moral development; more specifically, during college, students typically tend to decrease their preference for conventional level reasoning and increase their preference for postconventional level reasoning. From the findings of the longitudinal studies that have compared moral reasoning scores of individuals without college experience to those who have attended college, it can be concluded that formal education makes a unique contribution to moral reasoning in that during college, moral reasoning scores typically advance to a higher moral reasoning level (King & Mayhew, 2002).

There are many possible reasons for the observed increase in postconventional reasoning. Some believe that experiences that occur in college may lead to increased interests in particular effects that increase moral thinking (King & Mayhew, 2002). One study that King and Mayhew (2002) included was designed to link certain activities, interests, and lifestyles with moral judgment. The main focus of many of the studies in King and Mayhew's metaanalysis was to determine whether certain types of students were more likely to engage in activities that led to increased postconventional moral reasoning as opposed to those students who had lower moral judgment scores. Some of these types of experiences include knowledge of social/political figures, how well-read the student is, involvement in academic experiences, religious identification, the quantity and quality of social activities, leadership or volunteer experience, and general life experiences (King & Mayhew, 2002; Rest et al., 1986). Most of these resulted in

inconsistent or weak findings. One possible explanation for this is that there may not be a clear answer that fits everyone. However, participation in higher education is associated with gains in moral development during the college years. Pascarella and Terenzini (1991) agreed that the observed increase in moral reasoning in college “appears to be substantially greater in magnitude than that due merely to maturation and cannot be attributed solely to initial differences in moral reasoning, intelligence, or social status between those who attend and those who do not attend college” (p. 5). In other words, there is no magic answer to explain why people develop in their moral judgment abilities during the college years.

Rest et al. (1986) conclude that development of moral judgment occurs in concert with general social development, as opposed to specific moral experiences. A growing awareness of the social world and one’s place in it seems to foster development in moral judgment. Individuals who are likely to develop in their moral judgment can be described in the following ways: those who love to learn, who seek new challenges, who enjoy intellectually stimulating environments, who are reflective, who make plans and set goals, who take risks, who see themselves in the larger social contexts of history and institutions and broad cultural trends, and who take responsibility for themselves and others in their close environment (Rest et al., 1986). This is supported by several other studies that demonstrate that students with close friendships who had multiple independent friendship groups had higher DIT scores than other studies; in effect, diverse friendships may provide a context for challenging students to consider issues of fairness from multiple perspectives (Derryberry & Thoma, 2000; King & Mayhew, 2002).

Statement of the Problem

As noted earlier, Thoma and Bebeau (2008) documented some troubling trends. Though moral judgment development is still prone to advancement during college, the degree to which advancement occurs has changed. Specifically, across three distinct and nationally representative samples, Thoma and Bebeau (2008) cited increases in personal interest reasoning and decreases in postconventional reasoning. In explaining these trends, Thoma and Bebeau (2008) reported that many of today's college students may be more focused on making choices that will ensure a secure career instead of seeking out activities that will allow for moral development to occur. Thoma and Bebeau (2008) also note other trends where heightened self interests may have contributed to these changes. Specifically, they cite research from Twenge, Konrath, Foster, Campbell, and Bushman (2008) that college students are scoring higher on narcissism scales. These higher scores are relevant because they suggest that younger individuals may be becoming increasingly focused on the self instead of attending to larger social perspectives. This may mean that instead of becoming interested in social concerns overall as they embed themselves in the college experience, college student interests are more likely to be centralized in how things affect themselves as an individual person. The focus on self may also limit an individual's ability to problem solve because of fewer active and ongoing discussions with peers.

In light of the presented research on the declining scores on the DIT, there seem to be a host of possible reasons that contribute to the lower scores. One possibility has to do with the rise in and popularity of technology. The exploration of technology and its

impact on current college students is deemed to be a relevant topic of interest because both the individual and college campuses are seeking to become more technologically advanced. Pascarella and Terenzini (1998) have spent the past 20 years studying what it takes for the college student to be successful. They discuss the changing teaching and learning methods where students can take classes from a satellite campus or online. Technology has made what used to be impossible possible. Students who work are now able to take courses from a university in a different state just by logging onto their computers. With less personal interactions and more attention elsewhere, it is not surprising that the technology boom has resulted in a different climate for the young students of today's world.

Over the past century, technology has become an integrated part of our everyday lives, and it seems that this integration of technology may have implications where cognitive processing is concerned. In Nicholas Carr's book (2008b), *The Big Switch*, he outlines the technology boom over the past century and discusses how it has affected the way people live with, respond to, and rely on technology. One does not have to look far to observe the many different outlets there are for technology. In the 1960s, Marshall McLuhan wrote that media are just not passive channels of information; they "supply the stuff of thought," and they also "shape the process of thought" (Carr, 2008a, p. 2). Some individuals are concerned that, because of the media, people are able to become lazier in their reasoning abilities due to not having to work as hard to find information. With all the access to technology, it is not surprising that technology is something that is continually advancing to play a more significant role in human lives.

Carr (2008a) also wrote an article titled, *Is Google Making us Stupid?*, suggesting that technology, particularly the Internet, has an impact on the way that people attend to what they read. This article is particularly important because it provides insight into the notion that frequent exposure to internet reading may interfere with the ability or willingness to attend to and concentrate on non-internet reading materials. Most of the internet usage is aimed toward convenience and efficiency, meaning that most people use it to avoid spending larger amounts of time trying to get tasks done that in the past would have taken much longer. For example, email provides a way to contact people quickly without having to spend time with small talk or being put on hold to wait to talk to someone. With the Internet, tasks can be completed quickly, over and over again. Bookmarking informative websites makes it easy to look up pieces of information without having to process the information deeply (Carr, 2008a).

In addition to the Internet, other providers of information have also had to adapt and change in order to survive the technology enthused society. Traditional media has adapted to the audience's expectations. Newspapers have had to adapt and put much of their content online where people who either do not have the time or the patience to sit down and read the actual paper can have access to daily news. In fact, there are newspaper companies that have done away with the paper edition of the newspaper because they have been unable to survive since many of their readers prefer the easier access of the internet. Magazines are also online, and both magazines and newspapers have shortened their articles. On these websites, one can quickly gain access to the basic idea of a news story by reading a capsule summary or information snippets on current

events. The designers of the web pages also crowd pages with easy-to-browse links that pique people's interests to read more stories. In addition to this, the television media has also added text crawls to their news programs so that people can get even more information while listening to the news. People are able to get a "quick taste" of what is going on in their immediate area, as well as around the world.

The college students of today are more immersed in technology than ever before (Pascarella & Terenzini, 1998). In fact, it could be argued that most people really are unable to get away from technology. The question then arises of how this affects the way our social networks change, the way the internet provides instant access to enormous amounts of information, and how this impacts the traditional methods of learning that secondary education has held in high regard for so many years. The decline of DIT scores may be related to this change in the way that people interpret and prefer to attend to text. Carr (2008a) suggests that when people read online, they simply become mere decoders of information. Carr (2008a) adds that the ability to interpret text, to make rich mental connections that form when people read deeply and without distractions, remains largely disengaged.

According to Carr (2008b), advancing technology has had an impact on our information processing abilities and preferences. Specifically, it has hindered our ability or, at the very least, willingness to pay attention to sustained and complex tasks. As Carr (2008a) notes, this seems to be more of a willingness issue than an ability issue, as sustained attention to text does occur the longer we force ourselves to do so. For college students, however, overcoming a lack of willingness may be difficult, as the majority of

today's college students likely do not recall a point in time when the internet was not prevalent.

It may be then, that the ramifications of the internet where attention is concerned may have played a role in the trends that Thoma and Bebeau (2008) observed on the DIT. In particular, the DIT and its predecessor, the DIT2, is not a typical paper and pencil measurement. On these measurements, individuals read up to six (DIT; five on the DIT2) different short stories in which a protagonist faces a moral dilemma and must make a judgment about what to do. Following each dilemma, the participant is asked to make a host of different types of decisions about multiple moral issues. In other words, the DIT and DIT2 require significant time and require intense cognitive processing. Participants often report that both are mentally draining.

If today's college students have become accustomed to expecting instantaneous results, then it is likely that spending time on these kinds of tasks that require intense attentional focus may be problematic for them. As such, in taking the DIT or DIT2, many students may choose to attend to either what is easiest to attend to, and also that which has been attended to the longest (the self), rather than the deeper and more embedded concerns pertaining to others and also the most recently developed or newest form of moral reasoning. Such a focus may lead to using personal interest schemas instead of postconventional moral reasoning. Overall then, this study will address the relationship between DIT2 scores and the attention of college students. Before doing so, however, it is important to address what is meant by attention.

What is Attention and how is it Addressed in the Current Study?

In order to evaluate the role that attention plays when relating it to DIT2 scores, it is important to distinguish the different types of attention. For the current study, the focus will be on four different types of attention: divided attention, attentional switching, selective attention, and sustained attention. The different types will have varying roles in the ability to pay attention while taking the DIT2. It is presumed that some of the types will be more relevant to the overall scores on the DIT2. Hypotheses will be addressed in more detail after the different types of attention are defined.

Divided attention refers to the ability to attend to more than one activity at the same time (Kolb & Whishaw, 2008). A particularly common example of this is talking on a cellular phone while driving at the same time. The circumstance with divided attention that distinguishes it from other types is that only so much information can be processed. A person cannot fully attend to two different stimuli. Because participants who take the DIT2 should not have access to other distracting activities, divided attention should not play too much of a role in decreased scores.

Attentional switching refers to the ability to switch attention quickly from one concept to another (Robertson, Ward, Ridgeway, & Nimmo-Smith, 2001). An example of this would be shifting sets in the Wisconsin Card Sorting Test. A group of researchers trained children in attentional skills and found that children who showed higher abilities to switch attention were less likely to be distracted by other stimuli or concepts (Dunbar, Hill, & Lewis, 2001). They were also less likely to be impulsive in their decisions. Attentional skills like attention switching may lead to one's own monitoring of his or her

attention, making him or her be able to concentrate longer on something like dense reading material or making choices when provided with various options. Hence, increased attentional switching skills are likely to relate positively to increased DIT2 scores.

Selective attention is somewhat similar to divided attention and attention switching. It can best be defined as being limited in the ability to process all sensory information at the same time (Kolb & Whishaw, 2008). The brain must selectively attend to the most preferred portion. An example of this would be paying attention to traffic lights at a busy intersection. This is considered to be relevant in terms of taking the DIT2. Because there are so many choices and the participants must narrow these choices down to their top three choices by selectively being inattentive to the other choices, the participants must use selective attention as a method for selecting answers that are in line with higher cognitive processes. Selective attention may also be involved in helping the reader to focus on the plight of the protagonist while reading each dilemma. Not only does the reader have to make various choices, he or she also must consider multiple views when making moral judgments. Individuals who may have previous exposure to more than one viewpoint about a particular moral topic may struggle with integrating all of the pieces and making a choice.

The psychological construct of sustained attention describes a fundamental component of attention characterized by the subject's readiness to detect rarely and unpredictably occurring signals over prolonged periods of time (Sarter, Bruno, & Givens, 2003). Sustained attention involves top-down processing. Sustained attention is the

ability of an individual to be attentive to something for an extended period of time.

Because of the nature of the DIT2 and the additional research provided by Carr (2008a) about technology's impact on attention, higher scores on this dimension of attention are hypothesized to have a significantly notable relationship with DIT2 scores, particularly increased scores pertaining to postconventional reasoning and decreased scores pertaining to personal interest reasoning.

Hypotheses

Overall, the hypothesis of this study is that increased attentional abilities will be related to increased DIT2 scores. The specific hypotheses of this study are as follows:

- (1) Divided attention will have little impact on DIT2 scores.
- (2) Attentional switching is also hypothesized to have little effect on DIT2 scores.
- (3) Selective attention is hypothesized to have an impact on DIT2 scores. It is likely that individuals who score lower on measures of selective attention may be more likely to have higher personal interest scores.
- (4) Sustained attention is also hypothesized to have an impact on DIT2 scores in that high ability will positively relate to postconventional reasoning and negatively relate to personal interests reasoning. It is hypothesized to play a role due to the comprehension needed to complete the test.
- (5) Because the DIT2 involves cognitive processes but is not reducible to cognitive abilities (Rest et al., 1999), it is hypothesized that the magnitude of observed correlations will be moderate at most.

Method

Participants

Participants included 79 college students. Participants were recruited through the Department of Psychology's Study Board at Western Kentucky University. Participants included 25 males and 54 females. For class year, 31 were freshmen, 24 were sophomores, 9 were juniors, and 14 were seniors. One participant did not report class year. The ages ranged from 18 to 35, with a mean of 20.49 and a standard deviation of 2.86. Among those that provided information about ethnicity, 64 were Caucasian, 7 were African American, 1 was Asian American, 2 were Latino, and 4 designated other. One participant did not report ethnicity. Participants reported spending 1 to 30 hours a week on the internet for academic purposes, with a mean of 7.47 hours and a standard deviation of 6.29. Participants reported spending 1 to 90 hours a week on the internet for other purposes with a mean of 9.61 hours and a standard deviation of 11.69.

Measures

Demographics questionnaire. Participants were asked to indicate their age, sex, ethnicity, and educational level (see Appendix A). In addition, they were asked to report how many hours a week they spent on the internet for academic purposes and other purposes (i.e., social networking, playing games).

Attention Measure. The Test of Everyday Attention (TEA; Robertson, Ward, Ridgeway, & Nimmo-Smith, 1994) is an individually administered norm-referenced test for individuals from 18 to 80 years of age that is designed to measure selective attention, sustained attention, divided attention, and attentional switching. It has eight subtests:

Map Search (selective attention), Elevator Counting (sustained attention), Elevator Counting with Distraction (attentional switching), Visual Elevator (attentional switching), Elevator Counting with Reversal (attentional switching), Telephone Search (divided attention), Telephone Search While Counting (divided attention), and Lottery (sustained attention). Additionally, the Map Search subtest is divided into two parts, and the Visual Elevator subtest also yields a time component score. The test yields a score for each of the subtests. A description of all of the subtests can be found in Appendix B. It has three forms (A, B, and C) that can be used for repeated testing. The battery requires about 45 minutes to complete. The authors indicate that the test may be useful for examination of attention problems in general, as well as gauging prognostic outlook for recovery and daily life function in patients following brain injuries (Robertson et al., 2001).

The TEA is considered to be the first norm-referenced test to assess several independent attention systems. Little is known about the correlates between the different systems but the availability of measures may lead to research that can support new understandings and clinical uses. Robertson et al. (2001) suggest that the use of common, everyday activities as contexts makes the assessment seem relevant to examinees, who may range from younger, healthy participants to early Alzheimer's populations, indicating that the test has usefulness in a variety of areas. There are three versions if needed for repeated testing; they are to be administered in a prescribed order (i.e., A-B-C) due to practice effects.

The norming sample for the TEA consisted of 154 normal volunteers ranging in age from 18 years of age to 80 years of age, who were divided into four age bands (Robertson et al., 1994). No information on how they were selected and recruited was provided. Their educational level was assessed by *National Adult Reading Test*. All of the 154 participants took Form A, 118 took Form B, and 39 of those who took Form B also took Form C. Because of the small sample size, the researchers were unable to make many clinical interpretations for Form C. In addition, Form C does not provide very many standardized scores. Test-retest reliability estimates were developed for the norm group, as well as for a sample of 74 unilateral stroke patients. The coefficients generally support the usage of the test to be used for research purposes. The coefficients ranged from .59 to .86. The TEA manual provides evidence that the subtests are reasonably independent of hearing and visual difficulties, although the Elevator with Distraction subtest is not suitable for individuals who have hearing impairments. The scores of stroke victims and controls separately by two age groups typically show clear differences; some subtests show differences between age and aptitude-matched controls and closed-head-injured groups (Robertson et al., 2001). The differences between the scores of the groups are evidence for the validity of the TEA, according to the manual (Robertson et al., 1994).

The Map Search and Telephone Search subtests are sensitive to visual selective attention deficit, reflecting difficulty ignoring irrelevant information and picking out targets in complex visual array. Individuals with this deficit may have difficulty with filling out forms, looking up television schedules, or finding what they are looking for on

supermarket shelves. Even though the Map Search and Telephone Search subtests require the participants to do similar tasks, the two tests assess two different areas of attention. Map Search assesses selective attention, and Telephone Search measures divided attention. The Visual Elevator subtest measures ability to change a train of thought and is sensitive to problems of flexibility of thought and is thus considered a measure of attentional switching.

The Lottery and Elevator Counting subtests are sensitive to the ability to keep one's mind on a relatively unchanging, even boring, task. Participants who do poorly may tend to drift off during mundane tasks, such as listening to a long lecture. These two subtests assess sustained attention. The Telephone Search While Counting subtest is a test of divided attention, or one's ability to do more than one thing at a time. This subtest may indicate that sustained attention is an important factor in dual task performance, and it is also sensitive to the ability to handle the complex demands of everyday life. The Elevator Counting with Distraction and Elevator Counting with Reversal subtests relate to the ability to manipulate information in auditory-verbal working memory and also measure attention switching.

Moral Judgment. The Defining Issues Test-2 (DIT2; Rest et al., 1999) was used to assess participants' moral judgment development (see Appendix C). The DIT2 is an objective measure that presents five moral dilemmas for a main character. The participants are asked to indicate the action choice they feel is most appropriate for the main character. The response choices indicate whether or not the character should act on the situation or if the participant is unable to decide on the proper choice. The participant

is then faced with 12 issues related to each dilemma and asked to rate the importance of each issue or statement on a scale of 1 to 5 (1 = great importance, 5 = no importance) in terms of its importance to the decision made about the main character. Participants then rank the four most important items. The length of this test varies among participants, taking anywhere from 25 to 60 minutes to complete.

The DIT2 indices used in the current study include the Personal Interests (PI), Maintaining Norms (MN), and Postconventional (P) indices, which respectively measure reasoning from the personal interests, maintaining norms, and postconventional schemata. Scores on the indices range from 0 to 95, with higher scores indicating higher reasoning ability. For example, those with a P score of 85 would be considered high in postconventional reasoning and would also have lower MN and PI scores as a result (Rest, Thoma, & Edwards, 1997).

Cronbach's alpha for the DIT2 ranges from the upper .70s to the lower end of the .80s (Rest et al., 1999). Cronbach's alpha in the current study was .76 for PI scores, .77 for MN scores, and .71 for P scores. Validity was determined in terms of seven validity criteria: differentiation of various age/education groups, longitudinal gains, correlation with cognitive capacity measures, sensitivity to moral education interventions, links to prosocial behavior, predicting political choice, and reliability. Rest et al. (1999) documented specific relationships and/or outcomes with each criterion in documenting the validity of the DIT and DIT2.

Procedure

Participants were obtained from various classes from the College of Education at Western Kentucky University. Prior to any testing, participants were asked to complete an online informed consent form (see Appendix D). Participants were then asked to complete a demographics questionnaire and the DIT2. Data collection for the demographics questionnaire and the DIT2 was conducted on-line. After completing these two portions, the participants selected a time slot to come to the laboratory on a subsequent date to complete the Test of Everyday Attention. The study was split into two sessions because the participants may have become fatigued completing all the measures in a single session. Upon the participant's entry into the lab, the researcher greeted the participant and briefly explained the purpose of the study. Participants were asked if they had completed the first portion of the study and were asked to write down a six digit identification number that they had selected upon taking the DIT2. Trained examiners administered the TEA, which took about 45 to 60 minutes to administer. All participants were thanked for their participation and were given extra credit for their full participation. Prior to any data collection, approval was received from the Human Subjects Review Board (see Appendix E).

Results

Results for participant responses to the two measures can be found in Table 1 and Table 2. On the TEA, the score range is from 0 to 15 on all of the subtests, with exception of Elevator Counting. On this particular subtest, a score of 7 is considered typical, a score of 6 is possibly abnormal, and a score of 5 or below is considered to be deficient. On all of the other subtests, scores of 5 or below are considered to be deficient in terms of attention. The sample as a whole reported average scores across most of the attention indices (Lottery, Visual Elevator, Telephone Counting, Elevator Counting with Reversal, and Elevator Counting with Reversal). Participants had scores that were overall deficient on the Map Search 2 and the Visual Elevator time component portion. The second portion of Map Search is a continued sustained attention task where participants were asked to find specific symbols on a map. The Visual Elevator time component assessed how quickly participants could complete the Visual Elevator Task, a task that measures attention switching.

In terms of moral judgment development, the sample is considered to be modal at the postconventional moral judgment schema since P scores exceed MN and PI scores. However, MN and PI scores suggest that reasoning from the maintaining norms and personal interests schema is similarly influential. The DIT2 PI, MN, and P scores indicate that the moral judgment development of the sample is similar to that of other reported samples of American college students (Rest et al., 1999; Thoma & Bebeau, 2008).

Table 1

TEA and DIT2 Results Total and for Gender

	Total		Male		Female	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
MS1	6.27	2.11	6.08	1.99	6.35	2.17
MS2	3.59	2.31	3.76	2.24	3.52	2.36
TS	6.23	4.15	7.64*	4.15	5.57*	4.03
Lottery	10.54	3.40	10.52	3.67	10.56	3.31
EC	6.91	.32	6.88	.33	6.93	.32
VE	9.73	9.73	9.52	3.17	9.83	3.00
VET	4.91	3.43	5.72	3.81	4.54	3.22
TC	10.18	4.98	11.12	4.84	9.74	5.02
EDist	10.03	2.70	10.12	2.57	9.98	2.79
ERev	9.14	3.46	10.20	3.18	8.65	3.50
P	33.53	15.54	30.31	12.98	35.02	16.50
MN	29.12	11.05	28.85	10.85	29.25	11.24
PI	28.81	11.71	33.36*	10.02	26.70*	11.92

Note: * = $p < .05$; Males – $N = 25$, Females – $N = 54$; MS1 = Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score, Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score, VET = Visual Elevator Time Scaled Score, TC = Telephone Search While Counting Scaled Score, EDist = Elevator Counting with Distraction Scaled Score, ERev = Elevator Counting with Reversal, P = DIT2 Postconventional Score, MN = DIT2 Maintaining Norms Score, PI = DIT2 Personal Interest Score.

Table 1 addresses the mean results on all of the separate indices when comparing male and female responses to the total results. Scores on the Telephone Search subtest were found to be significant across gender ($F [1, 77] = 4.405, p < .05, \eta^2 = .05$). The Telephone Search subtest is a subtest that measures an individual's ability to attend selectively to information. Scores on the Personal Interests index were also found to be significant ($F [1, 77] = 5.861, p < .05, \eta^2 = .07$).

Table 2 reports results according to class levels. Typically, upperclassmen are expected to perform higher on measures of moral reasoning, meaning that they should have scored higher on measures of Postconventional Reasoning as a test of between-subjects test confirms ($F [3, 74] = 2.692, p < .05, \eta^2 = .10$). As Bonferroni post hoc tests support, this is attributable to significant differences favoring the juniors over the freshman ($p < .05$). Minimal differences were seen on the TEA among classes, with the exception of the Telephone Search subtest ($F [3, 74] = 2.832, p < .05, \eta^2 = .10$). Bonferroni post hoc tests of the mean differences indicate that the differences were not attributable to any statistical differences between classes. A less conservative post hoc test may have found statistical differences between classes.

Correlations among the different measures are noted in Table 3. As marked, significant correlations existed among several of the various indices. The strongest relationships are seen among the indices that measure similar constructs. For example, Map Search 2 and Visual Elevator Time scores are likely to correlate because both variables are related to the ability to sustain attention and complete a task quickly. Scores on the Lottery Elevator and Counting with Reversal subtests were significantly correlated

Table 2

TEA and DIT2 Results for Class Year

	Freshmen		Sophomore		Junior		Senior	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
MS1	5.87	1.99	6.83	2.18	6.89	2.71	5.79	1.76
MS2	3.55	2.37	4.42	2.28	2.78	2.58	2.93	1.81
TS	5.06	3.30	7.58	4.52	8.33	4.47	5.29	4.35
Lottery	10.16	3.64	10.58	3.50	10.78	2.63	11.00	3.46
EC	7.00	.00	6.83	.48	6.89	.33	6.93	.26
VE	8.68	2.93	10.08	3.33	10.78	2.33	10.86	2.77
VET	4.16	2.97	5.79	3.43	6.00	4.87	4.07	3.05
TC	8.77	5.27	11.50	4.70	8.89	4.01	11.50	4.80
EDist	9.71	2.75	10.33	2.56	10.11	3.58	10.36	2.37
ERev	8.16	3.55	10.00	3.06	9.11	4.07	9.57	3.34
P	28.72*	10.70	35.71	15.53	44.18*	21.87	33.77	17.93
MN	31.32	9.99	29.17	13.38	22.08	8.57	29.65	8.96
PI	29.05	10.96	27.70	10/94	28.71	14.26	29.04	13.60

Note: * = $p < .05$; Freshmen – $N = 31$, Sophomores – $N = 24$, Juniors = $N = 9$, Seniors – $N = 14$; MS1 =

Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score,

Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score,

VET = Visual Elevator Time Scaled Score, TC = Telephone Search While Counting Scaled Score, EDist =

Elevator Counting with Distraction Scaled Score, ERev = Elevator Counting with Reversal, P = DIT2

Postconventional Score, MN = DIT2 Maintaining Norms Score, PI = DIT2 Personal Interest Score.

Table 3

Correlations among DIT2 and TEA Scores

	MS1	MS2	TS	Lottery	EC	VE	VET	TC
MS1	1.000							
MS2	.661**	1.000						
TS	.005	.111	1.000					
Lottery	.003	-.032	.168	1.000				
EC	.090	.070	-.136	.009	1.000			
VE	-.063	-.070	.021	.267*	.015	1.000		
VET	.312**	.242*	.459**	.123	.038	.176	1.000	
TC	.113	.108	.092	.287	.010	.184	.123	1.000
EDist	.015	.041	.134	.281	.248	.158	.161	.117
ERev	.079	.149	.260*	.391*	.045	.33**	.354**	.492**
P	.113	-.101	.064	.283**	.046	.091	.188	.175
MN	-.074	.149	.059	-.016	.099	.072	-.164	.084
PI	-.049	-.038	-.140	-.187	-.081	-.041	.004	-.188

	EDist	ERev	P	MN	PI
EDist	1.000				
ERev	.262*	1.000			
P	.171	.347**	1.000		
MN	-.016	-.078	-.538**	1.000	

PI	-.108	-.179	-.465**	-.384**	1.000
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Note: ** $p < .01$ * $p < .05$; *Note:* MS1 = Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score, Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score, VET = Visual Elevator Time Scaled Score, TC = Telephone

with Postconventional scores. The Lottery subtest is a measure of sustained attention. The Elevator Counting with Reversal subtest is an auditory working memory task that requires participants to use their attention switching skills to count varying elevator tones.

Three linear regression analyses were conducted to examine how the TEA subtests account for variance in DIT2 P, MN, and PI scores. The attention scores from the TEA served as the independent variables and P, MN, and PI scores were the dependent variable in each regression. As Tables 4 and 5 note, the TEA subtests did not provide a significant contribution to DIT2 PI or MN score variance, although the Map Search 2 provided an independent significant contribution to Maintaining Norms scores (see Table 5). As seen in Table 6, the TEA provided a significant contribution to DIT2 P score variance. Significant contributions were seen from Map Search 1, Map Search 2, and Elevator with Reversal.

Table 4

Summary of Linear Regression Analyses for Variables Predicting DIT2 PI scores

		<i>B</i>	<i>SE B</i>	β	T	Sig.
$(R^2 = .096,$ $p < .70)$	MS1	-.524	.904	.094	-.580	.564
	MS2	.171	.799	.034	.213	.832
	TS	-.511	.388	-.181	-1.317	.192
	Lottery	-.364	.454	-.106	-.803	.425
	EC	-3.388	4.358	-.095	-.778	.440
	VE	.047	.488	.012	.097	.923
	VET	.586	.500	.172	1.172	.245
	TC	-.261	.317	-.111	-.824	.413
	EDist	-.104	.550	-.024	-.190	.850
	ERev	-.295	.518	-.087	-.569	.572

Note: MS1 = Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score, Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score, VET = Visual Elevator Time Scaled Score, TC = Telephone Search While Counting Scaled Score, EDist = Elevator Counting with Distraction Scaled Score, ERev = Elevator Counting with Reversal, PI = DIT2 Personal Interest Score.

Table 5

Summary of Linear Regression Analyses for Variables Predicting DIT2 MN scores

		<i>B</i>	<i>SE B</i>	<i>B</i>	<i>T</i>	<i>Sig.</i>
$(R^2 = .18,$ $p < .16)$	MS1	-1.29	.812	-.246	1.588	.117
	MS2	1.75	.718	.366	2.437	.017
	TS	-.506	.349	.190	1.450	.152
	Lottery	-.019	.407	-.006	-.048	.962
	EC	4.906	3.914	.145	1.253	.214
	VE	.608	.438	.168	1.388	.170
	VET	-.765	.449	-.238	-1.703	.093
	TC	.357	.285	.161	1.253	.214
	EDist	-.162	.494	-.040	-.327	.744
	ERev	-.661	.466	-.207	-1.419	.161

Note: MS1 = Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score, Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score, VET = Visual Elevator Time Scaled Score, TC = Telephone Search While Counting Scaled Score, EDist = Elevator Counting with Distraction Scaled Score, ERev = Elevator Counting with Reversal, MN = DIT2 Maintaining Norms Score.

Table 6

Summary of Linear Regression Analyses for Variables Predicting DIT2 P scores

		<i>B</i>	<i>SE B</i>	β	T	Sig.
$(R^2 = .237,$ $p < .03)$	MS1	2.201	1.102	.299	1.997	.050
	MS2	-2.440	.974	-.363	-2.505	.015
	TS	-.172	.473	-.046	-.363	.718
	Lottery	.700	.553	.153	1.267	.210
	EC	.264	5.310	.006	.050	.960
	VE	-.432	.595	-.085	-.727	.470
	VET	.349	.609	.077	.573	.569
	TC	-.060	.386	-.019	-.157	.876
	EDist	.352	.670	.061	.525	.602
	ERev	1.450	.632	.323	2.296	.025

Note: MS1 = Map Search 1 Scaled Score, MS2 = Map Search 2 Scaled Score, TS = Telephone Search Scaled Score, Lottery = Lottery Scaled Score, EC = Elevator Counting Scaled Score, VE = Visual Elevator Scaled Score, VET = Visual Elevator Time Scaled Score, TC = Telephone Search While Counting Scaled Score, EDist = Elevator Counting with Distraction Scaled Score, ERev = Elevator Counting with Reversal, PI = DIT2 Personal Interest Score, MN = DIT2 Maintaining Norms Score, P = DIT2 Postconventional Score.

Discussion

The current study was initiated in order to understand the relationship between DIT2 scores and the attention of college students. The rationale for selecting this particular area of research was based on the rise of technology and its implications where attention is concerned. Carr (2008a) suggested that technology has an impact on the way that people attend to what they read. He further noted (2008b) that the frequent use of the internet can impact the way that people attend to information while reading. The internet is based on efficiency, which may contribute to individuals becoming accustomed to nuggets of information, as opposed to being willing to put forth effort on reading more draining or strenuous material.

Five hypotheses were tested in the current study. First, it was hypothesized that divided attention would have little impact on DIT2 scores. This hypothesis was supported as the Telephone Search and Telephone Search with Counting TEA subtests did not significantly correlate with any of the DIT2 scores. As noted earlier, divided attention refers to the ability to attend to more than one activity at the same time (Kolb & Whishaw, 2008) such as talking on a cellular phone while also driving. Given that participants completed the DIT2 on-line, two possibilities can be presumed, then. The first is that attending to other stimuli while taking the DIT2 is not detrimental to scores. The second possibility is that participants, as a whole, remained focused on the DIT2 while completing it, and, as such, divided attention was not problematic.

Second, attentional switching was also hypothesized to have little effect on DIT2 scores. This hypothesis was not supported. Attentional switching appeared to be

particularly influential where postconventional reasoning is concerned, as evidenced by a significant correlation between Elevator Counting with Reversal TEA subtest and DIT2 P scores (see Table 3) along with a significant contribution from the former to the latter index (see Table 6). Even though these relationships were not hypothesized, they appear sensible. As previously noted, individuals with higher levels of attentional switching are not as distracted by other stimuli or concepts and are less likely to be impulsive in their decisions (Dunbar et al., 2001). Although not hypothesized, it makes sense that attentional switching would play a role when one considers the format of the DIT2. One would expect that individuals with higher levels of attentional switching would be able to attend to the differing choices that are presented on the DIT2. Attentional skills like attention switching may lead to one's own monitoring of his or her attention, making him or her better able to concentrate longer on something like dense reading material or making choices when provided with various options.

Third, selective attention was hypothesized to have an impact on DIT2 scores. Specifically, it was suggested that individuals who score lower on measures of selective attention would be more likely to have higher personal interest scores. This hypothesis was partially supported, as no significant relationships were observed among the Map Search TEA subtests and DIT2 PI scores (see Tables 3 and 4). However, selective attention was influential to postconventional reasoning, as evidenced by a significant contribution to P score variance from both of the TEA Map Search subtests (see Table 6). Selective attention refers to the ability to focus on limited pieces of information while ignoring other stimuli. This may make it easier for individuals taking the DIT2 to focus

on the more embedded and abstract issues and principles that the postconventional schema presents (e.g., what is just, fair, principled) and minimize the influence of the more concrete and surface characteristics that the personal interests (e.g., how the protagonist would be impacted) and maintaining norms (e.g., laws, norms, expectations, etc.) schemas emphasize.

The fourth hypothesis stated that sustained attention would have an impact on DIT2 scores in that high ability would positively relate to postconventional reasoning and negatively relate to personal interests reasoning. This hypothesis was partially supported. No significant relationships were observed between the TEA Lottery and Elevator Counting subtests and DIT2 PI scores. A significant correlation was observed between the TEA Lottery subtest and DIT2 P scores (see Table 3), though this did not result in a significant contribution to variance (see Table 6). Furthermore, the Elevator Counting TEA subtest did not significantly correlate with DIT2 P scores (see Table 3) nor was there a significant contribution to variance (see Table 6). Although only one significant relationship was seen, it is still believed to be an important factor in performance on the DIT2 and its role should not be overlooked. Sustained attention, which refers to an individual's ability to focus on an unchanging or boring task for an extended period of time (Sarter et al., 2003), should be considered relevant in that higher levels of sustained attention may help the individual hold on to and more clearly focus on the postconventional schema. According to Carr (2008a), sustained attention to text occurs the longer we force ourselves to do so.

The last hypothesis stated that the magnitude of observed correlations would be moderate at most since the DIT2 involves cognitive processes but is not reducible to cognitive abilities (Rest et al., 1999). This hypothesis was supported, as evidenced by the correlations observed in Table 3. Particularly notable is the lack of significant relationships between DIT2 PI scores and the TEA subtests. As such, though attention can be related to higher DIT2 P scores, DIT2 scores are not reducible to attentional abilities as the correlations between DIT2 PI scores and the TEA subtests attest.

Overall, results of this study supported that improved attention is related to advanced moral judgment development as evidenced by DIT2 P scores. At the same time, results showed that deficits in attention are not associated with decreased moral judgment development as evidenced by DIT2 PI scores. Given these findings, it is evident that attention is an important area of research for those interested in exploring reasons for recently observed decreases in moral judgment development (i.e., Thoma & Bebeau, 2008).

Limitations and Strengths

One limitation of this study is the sample size. Furthermore, the number of female participants outweighed the number of male participants. This disparity may help to explain the observed gender differences. Regardless, it is important to note that the observed gender differences in PI scores refute those who suggest that males will have more advanced reasoning over females on Kohlbergian based assessments of moral judgment development (Gilligan, 1982) and support arguments that any gender differences that do exist occur at lower levels of moral reasoning (Thoma, 2006).

Another limitation had to do with participant attrition. There were 18 potential participants that completed the first part of the study (i.e., on-line administration of Demographics questionnaire and DIT2) but did not show up for the second part of the study to complete the TEA. Another limitation is that a large portion of the participants were in their freshmen or sophomore years of college. The most notable increases in moral judgment development are often observed among upper classmen in college samples (King & Mayhew, 2002). How attention relates to moral judgment growth during this important time for moral judgment growth is therefore largely overlooked in the current study. One other important note is that the large majority of the juniors who participated in the study were from an honors psychology course, which may have resulted in skewed data. Based on research, involvement in college activities centered toward personal growth is a primary factor in moral judgment development (King & Mayhew, 2002).

Limitations aside, it is believed that this study has provided some important first steps in better understanding relationships among moral judgment development and attention. In support of the notions of Carr (2008a, 2008b) and the change in how younger students read and manipulate information, the implications of this study demonstrate that moral development researchers and educators need to fully consider the implications of the online world on education and information retrieval where attention is concerned. Some students reported spending numerous hours on the internet for various purposes each week. This finding in itself has implications for how students of today interact amongst themselves and may be used as an impetus for future research.

Future Directions

Because of the exploratory nature of this study, it is hoped that the results can be used to explore further how attention pertains to DIT2 scores. Since this study shows a link between attention and moral development, future studies on attention and moral judgment development should explore how efforts to improve attention might translate to moral judgment development. Since there is research that shows that attention can be improved, such efforts seem worthwhile (Kerns et al., 1999; Mateer & Sohlberg, 1988; Mateer, Sohlberg, & Yougman, 1990; Raskin & Mateer, 1993; Wilson & Robertson, 1992). There is quite a bit of research on attention interventions for individuals with attention deficits. One study suggested that direct interventions aimed at improving attention may be a valuable treatment option for improving cognitive efficiency in children and adults with attention deficits (Kerns et al., 1999).

Kerns et al. (1999) also did an overview on studies of attention training in adults. Changes in performance on attention training tasks over time have been quite consistently shown in adult samples, which indicates that there are ways to facilitate improved attention, even with adults with severe acquired cognitive deficits. There has been some experimental support for a positive impact of attention training on reading ability (Raskin & Mateer, 1993; Wilson & Robertson, 1992), everyday memory ability (Mateer & Sohlberg, 1988), and work performance (Mateer et al., 1990). Most of these interventions involved not just attention training exercises but also activities and interventions designed to facilitate awareness, emotional response to attentional slips, and self-regulatory skills.

Since the DIT and DIT2 require intense attention, a format change for the DIT2 that has less of a cognitive load may become a necessity. One idea might be to present the moral dilemmas in a video format that is more interactive in that the dilemmas are acted out and examples of reasoning are illustrated. It is possible that because this a medium to which college students are more accustomed, this particular change might result in improved scores. In other words, it may be that the DIT and DIT2 are not the most ecologically valid means for assessing moral judgment development. Efforts to assess moral judgment development by presenting moral scenarios through a medium that participants are more accustomed to and familiar with might yield more accurate moral judgment indices.

Conclusion

In conclusion, this study supports the notion that attention does pertain to moral judgment scores as inferred by the DIT2. It is important to note that the effect of TEA scores on DIT2 P scores was strong ($R^2 = .237$) in the current study. Based on this finding, it should be pointed out that attention is not the only factor that plays into the decreasing moral reasoning scores and that a variety of other factors certainly pertain to the observed decreases in moral judgment development (Thoma & Bebeau, 2008). This study only provides one more glimpse into possible factors that play into the big picture of moral judgment development. Nonetheless, the role of attention is a promising avenue worthy of additional consideration.

References

- Carr, N. (2008a). Is Google making us stupid? *Atlantic Monthly*. Retrieved July 17, 2008 from <http://www.theatlantic.com/doc/200807/google>.
- Carr, N. (2008b). *The big switch: Rewiring the world, from Edison to Google*. New York: W. W. Norton and Co.
- Crowson, H. M., DeBacker, T. K., & Thoma, S. J. (2007). Are DIT scores empirically distinct from measures of political identification and intellectual ability? : A test using post- 9/11 data. *British Journal of Developmental Psychology*, 25, 197-211.
- Colby, A., & Kohlberg, L. (1987). *The measurement of moral judgment, Vol. 1: Theoretical foundations and research validation*. New York: Cambridge University Press.
- Derryberry, W., & Thoma, S. (2000). The friendship effect: Its role in the development of moral thinking in students. *About Campus*, 5, 13-18.
- Dunbar, G., Hill, R., & Lewis, V. (2001). Children's attention skills and road behavior. *Journal of Experimental Psychology*, 7, 227-234.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.
- Kay, S. R. (1982). Kohlberg's theory of moral development: Critical analysis of validation studies with the Defining Issues Test. *International Journal of Psychology*, 17, 27-42.
- Kerns, K.A., Eso, K., & Thomson, J. (1999). Investigation of a direct intervention for

- improving attention in young children with ADHD. *Developmental Neuropsychology*, 16, 273-295.
- King, P. M., & Mayhew, M. J. (2002). Moral judgment development in higher education: Insights from the Defining Issues Test. *Journal of Moral Education*, 31, 247-270.
- Kolb, B., & Whishaw, I. Q. (2008). *Fundamentals of human neuropsychology* (6th Edition). New York: Worth Publishers.
- Mateer, C. A., & Sohlberg, M. M. (1988). A paradigm shift in memory rehabilitation. In H. Whitaker (Ed.), *Neuropsychological studies of nonfocal brain injury: Dementia and closed head injury* (pp. 202–225). New York: Springer-Verlag.
- Mateer, C. A., Sohlberg, M. M., & Yougman, P. (1990). The management of acquired attention and memory disorders following mild closed head injury. In R. Wood (Ed.), *Cognitive rehabilitation in perspective* (pp. 68–95). London: Taylor & Francis.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. Jossey-Bass Publishers: San Francisco.
- Pascarella, E. T., & Terenzini, P. T. (1998). Studying college students in the 21st century: Meeting new challenges. *The Review of Higher Education*, 21, 151-165.
- Raskin, S., & Mateer, C. A. (1993, June). *Cognitive rehabilitation of the functional reading deficits following traumatic brain injury*. Paper presented at the meeting of the American College of Rehabilitation Medicine, Denver, CO.
- Rest, J. (1986). *Moral development*. New York: Praeger.

- Rest, J. R. (1998). Why does college promote development in moral judgment? *Journal of Moral Education*, 17, 183-194.
- Rest, J., Deemer, D., Barnett, R., Spickelmier, J., & Volker, J. (1986). Life experiences and developmental pathways. In J. Rest (Ed.), *Moral development: Advances in research and theory* (pp. 28–58). New York: Praeger.
- Rest, J., Narvaez, D., Bebeau, M., & Thoma, S. (1999). A Neo-Kohlbergian approach: The DIT and schema theory. *Educational Psychology Review*, 11, 291-324.
- Rest, J. R., Thoma, S., Davison, M., Robbins, S., & Swanson, D. (1987). *Defining Issues Test manual*. Minneapolis, Minnesota: Center for the Study of Ethical Development.
- Rest, J., Thoma, S., & Edwards, L. (1997). Designing and validating a measure of moral judgment: Stage preference and stage consistency approaches. *Journal of Educational Psychology*, 89, 5–28.
- Robertson, I. H., Ward, T., Ridgeway, V., & Nimmo-Smith, I. (1994). *The Test of Everyday Attention manual*. London: Proctor House.
- Robertson, I. H., Ward, T., Ridgeway, V., & Nimmo-Smith, I. (2001). The Test of Everyday Attention: Test review. *The Application of Occupational Psychology to Employment and Disability*, 4, 51-55.
- Sarter, M., Bruno, J. P., & Givens, J. P. (2003). Attentional functions of cortical cholinergic inputs: What does it mean for learning and memory? *Neurobiology of Learning & Memory*, 80, 245-257.

- Thoma, S. J. (1994). Trends and issues in moral judgment research using the Defining Issues Test. *Moral Education Forum*, 9, 1-7.
- Thoma, S. J. (2002). An overview of the Minnesota approach to research in rural development. *Journal of Education*, 31, 225-245.
- Thoma, S. J. (2006). Research using the Defining Issues Test. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (pp. 67-91). Hillsdale, NJ: Lawrence Erlbaum.
- Thoma, S.J., & Bebeau, M. (2008, April). *Moral judgment competency is declining over time: Evidence from twenty years of Defining Issues Test data*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Twenge, J. M., Konrath, S., Foster, J. D., Campbell, W. K., & Bushman B. J. (2008). Egos inflating over time: A cross-temporal meta-analysis of the Narcissistic Personality Inventory. *Journal of Personality*, 76, 875–901.]
- Wilson, C., & Robertson, I. H. (1992). A home-based intervention for attentional slips during reading following head injury: A single case study. *Neuropsychological Rehabilitation*, 2, 193–205.

Appendix A
Demographic Questionnaire

Demographic Questionnaire

DIRECTIONS: Please respond to the following questions by circling the number beside the most appropriate response, checking the appropriate selection, or filling in the blank.

- a. Are you: 1. male 2. female
- b. How old were you on your last birthday: _____
- c. What is your college classification? 1. Freshman 2. Sophomore 3. Junior
4. Senior 5. Other (please name) _____
- d. What is your major? _____
- e. In hours, how much time per week do you spend on the internet? Be sure to indicate hours for both academic purposes and other purposes.
Academic purposes _____ hours per week
Other purposes (i.e., social, gaming, current events) _____ hours per week
- f. Optional: What is your ethnic origin (i.e., Caucasian, Native American, African American, Asian American, Latino, etc.)? _____

Appendix B
Test of Everyday Attention

Subtest	Description of Subtest
Map search	Subjects have to search for symbols on a colored map. The score is the number out of 80 found in 2 minutes. This subtest is age-sensitive and usable with almost all brain-damaged patients, including those with Alzheimer's disease. It measures selective attention and loads on the same factor as the Stroop Test.
Elevator counting	Subjects are asked to pretend they are in an elevator whose door-indicator is not functioning. They have to establish which 'door' they have arrived at by counting a series of tape-presented tones. This is an established measure of sustained attention sensitive to right frontal lesions.
Elevator counting with distraction	Subjects have to count the low tones in the pretend elevator while ignoring the high tones. This was designed as a subtest of auditory selective attention.
Visual elevator	Subjects have to count up and down as they follow a series of visually presented 'doors' in the elevator. This reversal task is a measure of attentional switching, and of cognitive flexibility. It is self-paced and loads on the same factor as the number of categories on the Wisconsin Card Sorting Test.
Auditory elevator with reversal	The same as the visual elevator subtest except that it is presented at fixed speed on tape.
Telephone search	Subjects must look for key symbols while searching entries in a simulated classified telephone directory.
Telephone search dual task	Subject must again search in the directory while simultaneously counting strings of tones presented by a tape recorder. The combined performance on sub-tests 6 and 7 gives a measure of divided attention - a 'dual task decrement'.
Lottery	Patients are asked to listen for their "winning number" presented on audio tape then write down the two letters preceding a specified number.

Appendix C

Defining Issues Test-2

Defining Issues Test 2

FAMINE

The small village in northern India has experienced shortages of food before, but this year's famine is worse than ever. Some families are even trying to sustain themselves by making soup from tree bark. Mustaq Singh's family is near starvation. He had heard that a rich man in his village has supplies of food stored away and is hoarding food while its price goes higher so that he can sell the food later at a huge profit. Mustaq was desperate and thinks about stealing some food from the rich man's warehouse. The small amount of food that he needs for his family probably wouldn't be missed.

What should Mustaq Singh do? Do you favor the action of taking the food? (*Mark one*)

___ Should take the food ___ Can't Decide ___ Should not take the food

Please rate in the space beside each statement how important each particular item/question is in making a decision about what you should do one way or another.

1=Great 2=Much 3=Some 4=Little 5=No

1. Is Mustaq Singh courageous enough to risk getting caught stealing? ___
2. Isn't it only natural for a loving father to care so much for his family that he would steal? ___
3. Shouldn't the community's laws be upheld? ___
4. Does Mustaq Singh know a good recipe for preparing soup from tree bark? ___
5. Does the rich man have any legal right to store food when other people are starving? ___
6. Is the motive of Mustaq Singh to steal for himself or to steal for his family? ___
7. What values are going to be the basis for social cooperation? ___
8. Is the epitome of eating reconcilable with the culpability of stealing? ___
9. Does the rich man deserve to be robbed for being so greedy? ___
10. Isn't private property an institution to enable the rich to exploit the poor? ___
11. Would stealing bring about more total good for everybody concerned or not? ___
12. Are laws getting in the way of the most basic claim of any member of society? ___

Now that you have rated these items, please rank them below from most important to fourth most important in making a decision about what Mustaq Singh should do.

___ # of Most important item ___ # of Third most important item
 ___ # of Second most important ___ # of Fourth most important item

REPORTER

Molly Dayton has been a news reporter for the *Gazette* newspaper for over a decade. Almost by accident, she learned that one of the candidates for Lieutenant Governor for her state, Grover Thompson, had been arrested for shop-lifting, 20 years earlier. Reporter Dayton found out that early in his life, Candidate Thompson had undergone a confused period and done things he later regretted which were very out-of-character now. His shop-lifting had been a minor offense and charges had been dropped by the department store. Thompson has not only straightened himself out since then, but in addition built a distinguished record in helping many people and in leading community projects. Now, Reporter Dayton regards Thompson as the best candidate in the field and likely to go on to important leadership positions in the state. Reporter Dayton wonders whether or not she should write the story about Thompson's earlier troubles because in the upcoming close and heated election, she fears that such a news story would wreck Thompson's chance to win.

Do you favor the action of reporting the story? (*Mark one*)

___ Should report the story ___ Can't Decide ___ Should not report the story

Please rate in the space beside each statement how important each particular item/question is in making a decision about what you should do one way or another.

1=Great 2=Much 3=Some 4=Little 5=No

1. Doesn't the public have a right to know all the facts about all the candidates for office?

2. Would publishing the story help Reporter Dayton's reputation for investigative reporting? ___
3. If Dayton doesn't publish the story wouldn't another reporter get the story anyway and get the credit for investigative reporting? ___
4. Since voting is such a joke anyway, does it make any difference what reporter Dayton does? ___
5. Hasn't Thompson shown in the past 20 years that he is a better person than his earlier days as a shop-lifter? ___
6. What would best serve society? ___
7. If the story is true, how can it be wrong to report it? ___
8. How could reporter Dayton be so cruel and heartless as to report the damaging story about candidate Thompson? ___
9. Does the right of 'habeas corpus' apply in this case? ___
10. Would the election process be more fair with or without reporting the story? ___
11. Should reporter Dayton treat all candidates for office in the same way by reporting everything she learns about them, good and bad? ___
12. Isn't it a reporter's duty to report all the news regardless of the circumstances? ___

Now that you have rated these items, please rank them below from most important to fourth most important in making a decision about what Reporter Dayton should do.

_____ # of Most important item _____ # of Third most important item
 _____ # of Second most important _____ # of Fourth most important item

SCHOOL BOARD

Mr. Grant was elected to the School Board District 190 and was chosen to be Chairman. The district was bitterly divided over the closing of one of the high schools. One of the high schools had to be closed for financial reasons, but there was no agreement over which school to close. During his election to the School Board, Mr. Grant had proposed a series of "Open Meetings" in which members of the community could voice their opinions. He hoped that dialogue would make the community realize the necessity of closing one high school. Also he hoped that through open discussion, the difficulty of the decision would be appreciated, and the community would ultimately support the school board decision. The first Open Meeting was a disaster. Passionate speeches dominated the microphones and threatened violence. The meeting barely closed without fist-fights. Later in the week, school board members received threatening phone calls. Mr. Grant wonders if he ought to call off the next Open Meeting.

Do you favor calling off the next Open Meeting? (*Mark one*)

___ Should call off the next open meeting ___ Can't Decide ___ Should have the next open meeting

Please rate in the space beside each statement how important each particular item/question is in making a decision about what you should do one way or another.

1=Great 2=Much 3=Some 4=Little 5=No

1. Is Mr. Grant required by law to have Open Meetings on major school board decisions?

2. Would Mr. Grant be breaking his election campaign promises to the community by discontinuing the Open Meetings? _____

3. Would the community be even angrier with Mr. Grant if he stopped the Open Meetings? _____

4. Would the change in plans prevent scientific assessment? _____

5. If the school board is threatened, does the chairman have the legal authority to protect the Board by making decisions in closed meetings? _____

6. Would the community regard Mr. Grant as a coward if he stopped the Open Meetings?

7. Does Mr. Grant have another procedure in mind for ensuring that divergent views are heard? _____

8. Does Mr. Grant have the authority to expel troublemakers from the meetings or prevent them from making long speeches? ____
9. Are some people deliberately undermining the school board process by playing some sort of power game? ____
10. What effect would stopping the discussion have on the community's ability to handle controversial issues in the future? ____
11. Is the trouble coming from only a few hotheads, and is the community in general really fair-minded and democratic? ____
12. What is the likelihood that a good decision could be made without open discussion from the community? ____

Now that you have rated these items, please rank them below from most important to fourth most important in making a decision about what Mr. Grant should do.

____ # of Most important item ____ # of Third most important item
 ____ # of Second most important ____ # of Fourth most important item

CANCER

Mrs. Bennett is 62 years old, and in the last phases of colon cancer. She is in terrible pain and asks the doctor to give her more pain-killer medicine. The doctor has given her the maximum safe dose already and is reluctant to increase the dosage because it would probably hasten her death. In a clear and rational mental state, Mrs. Bennett says that she realizes this; but she wants to end her suffering even if it means ending her life.

Should the doctor give her an increased dosage?

Do you favor the action of giving more medicine? (*Mark one*)

- ____ Should give Mrs. Bennett an increased dosage to make her die
 ____ Can't Decide
 ____ Should not give her an increased dosage

Please rate in the space beside each statement how important each particular item/question is in making a decision about what you should do one way or another.

1=Great 2=Much 3=Some 4=Little 5=No

1. Isn't the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her? ____
2. Wouldn't society be better off without so many laws about what doctors can and cannot do? ____
3. If Mrs. Bennett dies, would the doctor be legally responsible for malpractice? ____
4. Does the family of Mrs. Bennett agree that she should get more painkiller medicine?

5. Is the painkiller medicine an active heliotropic drug? ____

6. Does the state have the right to force continued existence on those who don't want to live? ____
7. Is helping to end another's life ever a responsible act of cooperation? ____
8. Would the doctor show more sympathy for Mrs. Bennett by giving the medicine or not? ____
9. Wouldn't the doctor feel guilty from giving Mrs. Bennett so much drug that she died?

10. Should only God decide when a person's life should end? ____
11. Shouldn't society protect everyone against being killed? ____
12. Where should society draw the line between protecting life and allowing someone to die if the person wants to? ____

Now that you have rated these items, please rank them below from most important to fourth most important in making a decision about what the doctor should do.

____ # of Most important item ____ # of Third most important item
 ____ # of Second most important ____ # of Fourth most important item

DEMONSTRATION

Political and economic instability in a South American country prompted the President of the United States to send troops to "police" the area. Students at many campuses in the U.S.A. have protested that the United States was using its military might for economic advantage. There is widespread suspicion that big oil multinational companies were pressuring the President to safeguard a cheap oil supply even if it means loss of life. Students at one campus took to the streets in demonstration, tying up traffic and stopping regular business in town. The president of the university demanded that the students stop their illegal demonstrations. Students then took over the college's administration building, completely paralyzing the college. Are the students right to demonstrate in these ways?

Do you favor the action of demonstrating in these ways?

____ Should continue demonstrating in these ways
 ____ Can't Decide
 ____ Should not continue demonstrating in these ways

Please rate in the space beside each statement how important each particular item/question is in making a decision about what you should do one way or another.

1=Great 2=Much 3=Some 4=Little 5=No

1. Do the students have any right to take over property that doesn't belong to them? ____
2. Do the students realize that they might be arrested and fined, and even expelled from school? ____
3. Are the students serious about their cause or are they doing it just for fun? ____
4. If the university president is soft on students this time, will it lead to more disorder?

5. Will the public blame all students for the actions of a few demonstrators? ____
6. Are the authorities to blame by giving in to the greed of the multinational oil companies? ____
7. Why should a few people like the Presidents and business leaders have more power than ordinary people? ____
8. Does this student demonstration bring about more or less good in the long run to all people? ____
9. Can the students justify their civil disobedience? ____
10. Shouldn't the authorities be respected by students? ____
11. Is taking over a building consistent with principles of justice? ____
12. Isn't it everyone's duty to obey the law, whether one likes it or not? ____

Now that you have rated these items, please rank them below from most important to fourth most important in making a decision about what the students should do.

____ # of Most important item ____ # of Third most important item
 ____ # of Second most important ____ # of Fourth most important item

Appendix D
Informed Consent Document

INFORMED CONSENT DOCUMENT

(WEB VERSION)

Project Title: Exploration of the Relationship between Social Decision Making and Cognitive Processing

Investigator: Lauren Clark
Psychology Department
lauren.ingram665@wku.edu

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your agreement to participate in this project.

This document will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may contact the investigator for this project with any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and contact the researcher with any questions you may have.

1. **Nature and Purpose of the Project:** The purpose of this project is to address how social decision making are related to cognitive processing tasks.
2. **Explanation of Procedures:** Your participation in this study involves your completion of three questionnaires. The first questionnaire asks you to provide background information. The second asks for your opinions about various social issues. The third will be a measure of attention, which will be scheduled at another date and time. The first part of the study is expected to take between 45 minutes to an hour. The second part will last an hour to an hour and a half.
3. **Discomfort and Risks:** There is no risk involved in the participation of this study.
4. **Benefits:** Your participation in this research will contribute to psychological research by helping to better understand factors pertaining to social decision making.
5. **Confidentiality:** Answers and information obtained in this study will remain anonymous and confidential and will be used solely for the purposes of this study. Additionally,

answers and information obtained will not be identifiable as your specific answers. If you should become uncomfortable at any time, you have the right to discontinue your participation, and your answers will be removed from the study. You also have the option to refuse to answer any question and remain in the study. Only group data will appear in any reports of this study.

6. **Refusal/Withdrawal:** Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

If you have read and understand the parameters of this study and wish to participate, please read the statement that follows and then click the submit button below:

I understand that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

**-BY SUBMITTING THIS DOCUMENT, YOU ARE PROVIDING YOUR
CONSENT TO PARTICIPATE IN THIS RESEARCH PROJECT –**

SUBMIT (wish to participate)

DON'T SUBMIT (do not wish to participate)

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD

Paul Mooney, Compliance Manger

TELEPHONE: (270) 745-4652

HRSB APPLICATION #10-044

APPROVED 09/29/2009 EXPIRES 08/30/2010

EXEMPT EXPEDITED FULL BOARD

Appendix E

Human Subjects Review Board Approval



A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH
HUMAN SUBJECTS REVIEW BOARD

In future correspondence, please refer to HS10-044, September 29, 2009

Lauren Clark
c/o Dr. Pitt Derryberry
Psychology
WKU

Lauren Clark:

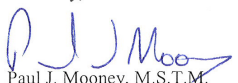
Your research project, *Exploration of the Relationship between Social Decision Making and Cognitive Processing*, was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is not required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

This project is therefore approved at the Expedited Review Level until August 30, 2010.

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project. Also, please use the stamped approval forms to assure participants of compliance with The Office of Human Research Protections regulations.

Sincerely,


Paul J. Mooney, M.S.T.M.
Compliance Coordinator
Office of Sponsored Programs
Western Kentucky University



cc: HS file number Clark HS10-044

HSRB APPLICATION # 10-044
APPROVED 9/29/09 to 8/30/10
~~EXEMPT~~ EXPEDITED ~~FULL BOARD~~
DATE APPROVED 9/28/09

The Spirit Makes the Master

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