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A Comparison Of The Effects Of Psychopathic Personality Features, Context And Incentives On Individuals' Beliefs They Would Malingering

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A Comparison of the Effects of Psychopathic Personality Features, Context
And Incentives on Individuals' Beliefs They Would Malingering

A Dissertation

Presented to

The School of Graduate Studies
Department of Clinical Psychology
Indiana State University
Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Psychology

by

Thomas Earl Rae

August 2008

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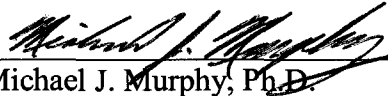
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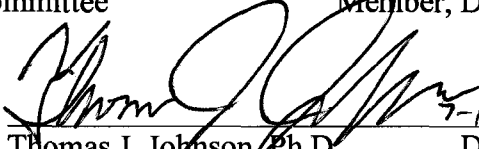
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ABSTRACT

Accuracy in psychological evaluation and diagnosis relies heavily on the self-report of those being assessed. Consequently, the person who feigns or exaggerates cognitive, physical or psychological impairment, known as malingering, can present significant challenges in such situations. Research on malingering has focused primarily on improving detection of the behavior, resulting in the development of a number of effective assessment measures. However, much less research attention has been paid to increasing our understanding of the primary motivations underlying attempts to feign. As such, our understanding of why people malingering and what factors most strongly influence their decisions is quite limited. In order to replicate and extend the findings of previous research, this study examined the effects of psychopathic personality features, context (i.e., setting), and incentives (i.e., potential positive and negative outcomes of a situation) on participants' beliefs they would malingering in various hypothetical situations. This study also examined which of these factors was most influential in this process. Two hundred fourteen participants read case vignettes reflecting high or low levels of incentives in each of three contexts (forensic, military, and medical) and completed questionnaires assessing their beliefs they would malingering in these situations. Participants also completed the Psychopathic Personality Inventory (PPI). PPI scores were significantly correlated with participants' rated likelihood of malingering, the level of effort

participants felt they would put into malingering, and the extent to which participants felt they could benefit from malingering. Although no effect for incentives was found, context significantly impacted likelihood of malingering, the level of effort employed in malingering, and the perceived benefit of malingering. Results are discussed in terms of the relationship between personality and situational variables with regards to malingering, and suggestions are made regarding future research in this area.

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DEDICATION

To my wife, Christina, who I thank for always being so understanding. Without your unending love and support, I would not be who I am today.

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Chapter 1

INTRODUCTION

Precision in psychological evaluation and diagnosis can be greatly influenced by an individual's motivation to self-report honestly and accurately (Rogers, 1997). In light of this fact, much research attention has been paid to malingering in recent years. Malingering, which refers to the deliberate fabrication or exaggeration of cognitive, physical, or psychological functioning motivated by an external goal (i.e., obtaining financial compensation; American Psychiatric Association [APA], 2000), has been estimated by forensic experts to occur in around 15.7-17.4% of forensic and 7.4-7.8% of non-forensic cases (Rogers, Salekin, Sewell, Goldstein, & Leonard, 1998; Rogers, Sewell, & Goldstein, 1994). Given the frequency in which malingering appears to occur, the vast majority of malingering research to date has involved improving detection of the behavior (Bordini, Chaknis, Ekman-Turner, & Perna, 2002; Rogers & Cruise, 1998; Rogers, Sewell, et al., 1994). As a result, the ability of clinicians and other professionals to identify those who would deceive them has been greatly improved by the construction and refinement of a number of assessment measures (Rogers, 1997). However, this emphasis on enhancing our ability to determine exactly who is malingering in a given situation has come at the expense of increasing our general understanding of why people

malingering and what factors are most influential in their decisions to do so (Rogers, 1990a, 1990b; Rogers, 1997; Rogers, Sewell, et al., 1994).

According to Rogers (1990a, 1990b), the scant research attention paid to investigating motivations to malingering has contributed to the stalled development of explanatory models for why malingering occurs. However, Rogers additionally identifies the Diagnostic and Statistical Manual of Mental Disorders' (DSM) past and current conceptualizations of why malingering occurs as being inherently flawed. These explanatory conceptualizations, which Rogers refers to as the pathogenic and criminological models, respectively, classify malingerers as either psychologically (pathogenic) or morally (criminological) disordered. In his review of the literature, Rogers discussed the downfall of the pathogenic model and challenged the explanatory and descriptive utility of the current, criminological model. Rogers therefore concluded the criminological model of malingering was in need of revision or complete replacement, proposing that his newly devised adaptational model be considered as an alternative.

The adaptational model of malingering (Rogers, 1990a, 1990b), unlike the pathogenic and criminological models, avoids the pejorative labeling of malingerers. Instead, emphasis is placed on aspects of the circumstances, including the associated incentives, available alternatives to resolving the situation other than malingering, and the extent to which the situation could be considered involuntary, antagonistic, or risky. The term incentive refers to a potential outcome of a situation that motivates individuals to behave in a given manner, and can be either positive (e.g., financial compensation) or negative (e.g., criminal prosecution). Rogers used terms such as involuntary, risky, and

adversarial to describe situations involving either evaluation or treatment in which individuals feel their needs are being opposed. Rogers argued that, in such situations, potential malingerers engage in a cost-benefit analysis in order to determine if what they feel is the most effective method of achieving their goals. Generally speaking, the adaptational model contends that situational variables, not underlying character pathology or inherent badness, more reliably account for instances of malingering. This line of reasoning is strongly supported by the empirical literature. For instance, given that psychopathy is characterized by a variety of conning, manipulative, and deceptive behaviors (Hare, 1993), the beliefs that psychopathic individuals are more likely to mangle and are more effective malingerers than non-psychopaths, continue to endure. However, little scientific evidence exists to support these notions (Clark, 1997; Edens, Buffington, & Tomacic, 2000; Poythress, Edens, & Watkins, 2001; Rogers, 1990a, 1990b). Furthermore, research investigating the effects of situational factors on malingering continually demonstrates that the context of and incentives associated with a situation significantly influences malingering rates and presentations (Rogers, 1990a, 1990b, 1997).

However, despite the demonstrable value of the adaptational model, its assumptions have yet to undergo direct investigation. Instead, research emphasis continues to be placed on enhancing detection measures, rather than on increasing understanding of individuals' motivations to mangle. As such, the purpose of the current study was to examine the effects of psychopathic personality traits, context, and incentives on participants' beliefs they would mangle in various hypothetical situations, and to investigate which factor(s) were most influential in this process. This study also

contributes to current knowledge regarding the influence of context and incentives on malingering by attempting to clearly define and experimentally manipulate these variables.

Chapter 2

LITERATURE REVIEW

The intentional fabrication or exaggeration of one's cognitive, physical, or psychological functioning in order to obtain some external goal, which is commonly referred to as malingering (APA, 2000), has received a great deal of research attention in recent years (Bordini et al., 2002). Most of this research has focused on enhancing detection of the condition, rather than on increasing our understanding of who malingers and why (Rogers, 1990a, 1990b, 1997; Rogers, Sewell, et al., 1994). Unfortunately, because little research attention has been devoted to examining motivations to malingering, the development of explanatory models for why malingering occurs has been stalled (Rogers, 1990a, 1990b). However, because this overemphasis on detection research cannot completely account for the lack of progress on models of malingering, researchers have increasingly begun to investigate the matter further.

One of the more compelling discussions regarding the lack of developmental progress of explanatory models of malingering is provided by Rogers (1990a, 1990b). According to Rogers, the problem lies not in the definition of malingering but in the current conceptualization of why it occurs. The definition espoused by the DSM, including the most recent edition (DSM-IV-TR; APA, 2000), is that malingering is the

“intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs” (p. 739). Given that reviews of the malingering literature (Rogers, 1997) accept this definition as reflective of the essential features of the behavior, it has been subjected only to minor modifications since its appearance in the DSM-III-R (APA, 1987). What has changed is the conceptualization of malingering as reflected in the criteria for the condition. Beginning with the DSM-III (APA, 1980), steps were taken by the APA to present the resulting taxonomy as atheoretical. More specifically, the DSM-III (APA, 1980) included an explicit statement that the classifications it contained were not based on any underlying theory. This stance was reportedly taken in response to the controversy over how best to define what constitutes a mental disorder. The trouble with such a stance is that theory and classification go hand in hand, as any successful classification system must certainly be based on some level of theory (Follette & Houts, 1996). Rogers (1990a, 1990b) noted that this departure from theory paralleled a paradigmatic shift in the conceptualization of malingering from one insufficient model to another; that is, from a pathogenic model to a criminological model. As part of this and other discussions (Rogers, 1990a, 1990b, 1997; Rogers & Dickey, 1991), Rogers outlined these two explanatory models of malingering.

Pathogenic Model

According to the pathogenic model, which had been espoused by previous editions of the DSM (DSM-I and DSM-II; APA, 1952, 1968), the primary motivation for malingering is underlying psychopathology. In this model, malingering is conceptualized

as an intentional, yet ineffective, approach to gaining control over emerging psychotic and neurotic processes. In order to manage initially genuine symptomatology, individuals portray themselves as manifesting symptoms that are in reality nonexistent. However, subsequent decline in psychological functioning leads the individual to lose control over their feigned symptoms.

The pathogenic model further posits that this loss of control will lead to worsening psychopathology and the appearance of genuinely severe symptomatology (Rogers, 1990a, 1990b; Rogers & Dickey, 1991).

Despite early acceptance of the pathogenic model, the elucidation of various shortcomings has led to increased dissatisfaction with this conceptualization over the years. For instance, research testing the predictions of the model has failed to demonstrate a process of continued deterioration in such individuals. In fact, it has more often been the case that individuals considered to be malingering have improved following favorable situational changes (e.g., financial compensation). Furthermore, many of the early views of malingering that led to the development of the pathogenic model have since evolved (Rogers, 1990a, 1990b, 1997; Rogers & Dickey, 1991). For example, Rogers (1997) notes that increased concerns regarding the honesty of criminal defendants led to the consideration of malingering as a method by which to avoid punishment. In fact, it is this particular shift in the conceptualization of malingering that led to the development of the criminological model.

Criminological Model

The criminological model of malingering replaced the pathogenic model with the release of the 3rd edition of the DSM (APA, 1980). Its subsequent retention in the DSM-

III-R (APA, 1987) was met with questioning by Rogers (1990a, 1990b) regarding its utility as an explanatory paradigm. Like the DSM-III (APA, 1980) before it, the DSM-III-R (APA, 1987) offered no formal diagnostic criteria, instead warning clinicians that:

The condition should be strongly suspected if any combination of the following is noted:

1. Medicolegal context of presentation (e.g., the person is referred by an attorney to the clinician for examination).
2. Marked discrepancy between the claimed stress or disability and the objective findings.
3. Lack of cooperation during the diagnostic evaluation and in complying with the prescribed treatment regimen.
4. The presence of Antisocial Personality Disorder. (p. 360)

In his critique of the DSM-III-R (APA, 1987), Rogers (1990b) characterized the criminological classification as “unduly moralistic and lacking in scientific evidence” (p. 182). With regards to the DSM-III-Rs (APA, 1987) moralistic approach to conceptualizing malingering, Rogers (1990b) noted that 3 of the 4 indices appeared to incorporate themes of “badness: namely, a bad person (sociopath) in a bad situation (forensic assessment), who is a bad participant (lack of cooperation)” (p. 183). Rogers’ (1990a, 1990b) review of the literature convincingly challenged both the explanatory and descriptive utility of the DSM-III-Rs (APA, 1987) four indicators for malingering. Rogers (1990b) concluded his examination by noting that the model was “scientifically indefensible” (p. 184) and, therefore, in need of revision, ultimately suggesting that the consideration and evaluation of a new classificatory model of malingering should occur.

The Adaptational Model of Malingering

As a potential alternative to the pathogenic and criminological models, Rogers (1990a, 1990b) proposed what he called the adaptational model, which he noted was an extension of decision theory. Decision theory is a body of knowledge that incorporates a range of analytical techniques in order to assist decision makers in selecting among various alternatives in light of the potential consequences of each. This model has been successfully applied to decision making in conditions of certainty, risk, and uncertainty (Tversky & Fox, 1995). Applied to malingering, Rogers (1990a, 1990b) hypothesized that would-be malingerers may perceive certain situations involving evaluation or treatment as being in conflict with their needs, and, potentially hostile. Rogers used terms such as involuntary and adversarial to describe such situations. As such, these individuals may feel the situation is potentially risky and decide to feign on the basis of likelihood and expected utility. In Rogers' model, likelihood refers to the options the individual feels are available in attempting to achieve his or her goals. Expected utility, on the other hand, refers to how effective the individual considers each option to be. Rogers, therefore, held that potential malingerers engage in what he considers an adaptive cost-benefit analysis in involuntary, antagonistic, or otherwise risky situations in order to select what they believe at the time to be the most effective method of achieving their goals.

There are three primary assumptions of the adaptational model according to Rogers (1990a, 1990b). First, an individual perceives the evaluation/treatment situation as either involuntary or antagonistic. Second, the individual perceives that they have a personal stake in the situation, such that they have something to lose from responding

honestly and something to gain from malingering. Third, the individual does not consider other alternatives to be viable options. Thus, in this sense, malingering is simply viewed as one of many potential alternatives to be utilized in involuntary/antagonistic situations. Rogers argued that the adaptational model allows for a departure from past conceptualizations of malingering that labeled individuals as either psychologically (pathogenic) or morally (criminological) disordered. Emphasis is, instead, placed on the adaptive qualities of the condition, thus providing researchers with a testable alternative for conceptualizing malingering. Furthermore, Rogers noted encouraging preliminary support for his adaptational model from various empirical studies. These studies will be discussed in detail in the section on the effects of situational factors on malingering.

Evidence for Models of Malingering

Prototypical Analyses

Prototypical analysis refers to the process by which experts are asked to rate the characteristics associated with a clinical construct (e.g., malingering) in order to identify those characteristics that appear to be the most central or representative. Experts may either be asked to rate a list of attributes provided for them or to describe what they consider the core characteristics of a given construct (Rogers et al., 1998; Rogers, Duncan, Lynett, & Sewell, 1994; Rogers, Sewell, et al., 1994). Prototypical analyses of those attributes associated with each of the three models of malingering have provided empirical support for these conceptualizations. For example, Rogers, Duncan, et al. (1994) asked 331 forensic psychiatrists to rate each of several criteria for Antisocial Personality Disorder (APD) on a 7-point scale ranging from “unimportant” to “very important” to their perceptions of APD. The criteria were drawn from various editions of

the DSM (APA, 1968, 1980, 1987), the Psychopathy Checklist—Revised (PCL-R; Hare, 1991), the proposed criteria for the International Classification of Diseases and Related Health Problems—10th Revision (ICD-10; World Health Organization, 1990) dyssocial personality disorder, and the proposed criteria for APD for the 4th edition of the DSM (DSM-IV; APA, 1994). Component analysis of psychiatrists' ratings revealed four distinct factors, which were labeled unstable self-image, unstable relationships, and irresponsibility; manipulation and lack of guilt; aggressive behavior; and nonviolent delinquency. The researchers noted that facets of some important dimensions (e.g., lack of enduring relationships, promiscuity, conning & manipulation) were either poorly or only indirectly represented in the proposed DSM-IV (APA, 1994) criteria for APD. Rogers, Duncan, et al. (1994), therefore, suggested that the results of their study be taken into consideration with future revisions of the DSM. Furthermore, these findings seem to support Rogers' (1990a, 1990b) contention that the criminological model promulgated by the DSM-III (APA, 1980) and DSM-III-R (APA, 1987), which suggests that malingering should be “strongly suspected” in the presence of APD, does in fact contain an underlying theme of badness.

In a similar study conducted by Rogers, Sewell, et al. (1994), 320 “highly experienced forensic experts” (p. 543) rated each of 32 attributes associated with the pathogenic, criminological, and adaptational models as proposed by Rogers (1990a, 1990b). Following randomization of attributes, clinicians were asked to rate each item on a 7-point scale ranging from “1, unimportant to malingering” to “7, very important to malingering.” The eight pathogenic items reflected Rogers' delineation of the pathogenic model in which underlying psychopathology, clinical deterioration, and the transition of

symptomatology from feigned to genuine are characteristic. The 16 criminological items came from the DSM-III-R (APA, 1987) indices for malingering and the characteristic traits of psychopathy as identified by the Psychopathy Checklist—Screening Version (PCL-SV; Hare, Cox, & Hart, 1989). The eight adaptational items emphasized perceptions regarding the involuntary/antagonistic nature of the context, engagement in a cost-benefit analysis, and the selection of malingering as a method of reaching one's objectives. Additionally, those clinicians who had evaluated 10 or more malingerers in the course of their professional work completed questionnaires addressing issues such as comorbidity and treatability.

Component analysis of the ratings revealed three distinct factors, which were labeled criminological, pathogenic, and adaptational. All but 2 of the original 16 criminological attributes loaded into the criminological factor, while all eight of the original pathogenic attributes loaded into the pathogenic factor. The adaptational factor encompassed seven attributes, five of which came from the original list of eight attributes. A majority of the malingering attributes loaded on their respective model without cross-loading. In addition, all but one adaptational attribute were rated as at least moderately important to the experts' perceptions of malingering. The adaptational model of malingering was found to be higher in prototypicality than both the criminological (which fell in the middle) and pathogenic models. In order to examine differences in experts' conceptualizations of malingering, supplementary analyses were conducted. To accomplish this task, the ratings provided by each expert for attributes within each model were averaged. Clinicians were then assigned to the explanatory model for which they had the highest overall rating. Those clinicians who embraced the criminological model

and also had relatively high pathogenic ratings were significantly more likely to view malingerers as manifesting major psychopathology and as less motivated for treatment. This difference was not observed in those individuals embracing the adaptational model. In addition to providing support for Rogers' (1990a, 1990b) delineation of explanatory models as an approach to understanding motivations to malingering, the findings of this study serve to question the DSM-III (APA, 1980) and DSM-III-R's (APA, 1987) adherence to the criminological model. Another important consideration highlighted by this study is the potential for clinicians' diagnoses to be biased by their adherence to a particular model of malingering (Rogers, Sewell, et al., 1994).

In an attempt to replicate and extend the findings of Rogers, Sewell, et al. (1994), Rogers et al. (1998) addressed four research issues, including the applicability of explanatory models to both forensic and non-forensic settings, the prototypical ratings associated with each of the three explanatory models, the effects of type of malingering (i.e., cognitive, physical, or psychological) on the three explanatory models, and the effects of gender in prototypical cases on types of malingering. Using the same list of attributes for the three explanatory models produced by Rogers, Sewell, et al. (1994), Rogers et al. (1998) asked 221 forensic experts to recall two prototypical cases of malingering (one forensic and one non-forensic) from their own practices and rate each item on a 7-point scale ranging from "1, unimportant to malingering" to "7, very important to malingering" with regards to each case example. Raters were also asked to provide information about the age, race, and gender of their respective cases. Raters additionally provided information regarding type of malingering, including intellectual or

neuropsychological impairment (i.e., cognitive impairment), medical syndrome or disorder, and psychopathology or mental disorder.

Component analysis was used to evaluate the applicability of explanatory models across settings. Four distinct factors were produced and labeled criminological (characterized by antisocial behavior and background, deception, and impaired interpersonal relationships), pathogenic (characterized by underlying psychopathology and ineffective attempts to gain control over such symptomatology via malingering), cost-benefit analysis (characterized by a weighing of alternatives based on likelihood of success), and adversarial context (characterized by the use of malingering in situations that run counter to one's needs or objectives). These findings are consistent with Rogers, Sewell, et al. (1994) in that the adaptational model was generally considered more prototypic than the criminological (again falling in the midrange of prototypicality) and pathogenic (which was rated as relatively unimportant) models. However, component analysis in this study resulted in the division of the adaptational model into two dimensions, cost-benefit analysis and adversarial context. For forensic cases, cost-benefit analysis was found to be the most representative dimension (i.e., it received higher average ratings), followed by the criminological factor and adversarial circumstances. For non-forensic cases, adversarial circumstance was the most representative, followed by cost-benefit analysis and the criminological factor. Significant differences were also observed in prototypical cases of malingering by type of feigning. For forensic cases, feigned medical syndromes were more prototypical than feigned cognitive impairment. For non-forensic cases, adversarial context was more relevant to feigned psychopathology than other types of malingering. Furthermore, clinicians' ratings did not

reflect the perception that adversarial context influenced individuals' decisions to feign cognitive impairment, regardless of setting. This study also examined the impact of gender on types of malingering and the applicability of explanatory models. For non-forensic cases, female malingerers accounted for a greater percentage of feigned medical syndromes (50% vs. 25%) and a smaller percentage of feigned cognitive impairments (6.4% vs. 22.7%) than did male malingerers. No significant gender differences in types of malingering were found in forensic cases. With regard to gender differences in explanatory models, the criminological model was rated as significantly more prototypic of male malingerers in both forensic and non-forensic settings. Furthermore, among non-forensic cases, the pathogenic model was significantly more prototypic of women than men, while cost-benefit analysis was found to be significantly more prototypic of men than women (Rogers et al., 1998).

Future research on the adaptational model of malingering would be well informed by the findings of Rogers et al. (1998). For example, significant gender differences in the clinical presentation of malingering were observed in non-forensic cases. In addition, the fact that feigned medical syndromes were found to be prominent in both prototypical non-forensic (36.1%) and forensic (22.7%) cases suggested to the authors that this relatively neglected area of malingering research deserves more attention. Rogers et al. (1998) also suggested that given the importance of cost-benefit analysis in their study, especially with regard to forensic cases, placing emphasis both on individuals' motivations to malingering and their clinical presentation would certainly serve to enhance assessment. In order to accomplish this task, these authors suggested questioning individuals regarding their perceptions on the involuntary/antagonistic nature of the

situation, their objectives, and the alternatives they could potentially utilize to obtain their goals. In the context of Rogers' (1990a, 1990b) call for continued research on explanatory models of malingering, the findings of Rogers et al. (1998) suggest that further research investigating motivations and subsequent decisions to malingering is still sorely needed.

Simulation Research

The overwhelming majority of malingering detection research to date has utilized analogue designs, which are more commonly referred to as simulation designs or simulation studies. In research using simulation designs, individuals are randomly assigned to either feigning or control conditions and asked to complete psychological tests according to instructions to either malingering or respond honestly. Their test results are then compared to those of clinical samples. However, the over-reliance on simulation designs has been increasingly questioned on the grounds that such methods limit the generalizability of findings to real-world applications (Rogers, 1997; Rogers & Cruise, 1998). The limitations of such an approach to studying malingering were first highlighted by Rogers and Cavanaugh (as cited in Rogers & Cruise, 1998). They noted that simulation designs suffer from what they referred to as the "simulation-malingering" paradox, in which participants are asked to comply with instructions to fake in order to study individuals who fake when asked to comply with some form of evaluation (e.g., cognitive, physical, psychological). Subsequent evaluations have supported this notion, as measures producing highly accurate classification rates among simulators have fared significantly worse among actual malingerers (Rogers & Cruise, 1998).

In their attempt to assess the potential threats to external validity afforded by variations in simulation designs, Rogers and Cruise (1998) investigated the effects of three variables on the clinical presentation of malingering; context, incentive type, and relevance of the scenario to the participant. The variable of context was manipulated such that participants were presented with either a familiar (i.e., possible academic failure) or unfamiliar (i.e., evaluation prior to criminal sentencing) scenario. Incentives, which refer to the potential outcomes of a situation that motivate individuals to behave in a given manner, were either positive (i.e., extra credit, social recognition, and the potential for a \$50 reward) or negative (i.e., no extra credit, social humiliation, and loss of eligibility for a \$50 reward). With regard to the variable of relevance, participants were presented with either no information about the relevance of the study to themselves, real-world implications of the study (i.e., the need to help researchers refine assessment measures), or a challenge (i.e., try to beat the test). A sample of 231 undergraduate students was asked either to feign major depression, in which case they were provided with a brief description of its major features, or to respond honestly to assessment items. Upon receiving their instructions, each participant was presented with a vignette depicting a situation in which the three aforementioned variables had been manipulated. After reading the vignette, participants completed two brief measures, the Hopkins Symptom Checklist (HCSL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) and the Structured Interview of Malingered Symptomatology (SIMS; Smith, 1992). Rogers and Cruise (1998) found that the type of incentive significantly affected malingerers' presentations. More specifically, malingerers endorsed more phony depressive symptoms but fewer symptoms unrelated to depression in the presence of only the very mild

negative incentive. Furthermore, interactions were observed between context and relevance and context and incentive. For instance, when participants were provided with the familiar scenario and were challenged to beat the test, their scores on measures of intelligence, amnesia, and affective disorders were much lower than those participants who received no information regarding relevance. In addition, participants presented with either positive or negative incentives along with a familiar scenario endorsed fewer symptoms unrelated to depression compared to other participants. Overall, the results of this study suggest that multiple factors influence the process of malingering. As such, researchers should exercise caution in designing simulation research, given that even slight manipulations to variables, such as the setting, incentives, or relevance can result in significant differences in malingering.

The study conducted by Rogers and Cruise (1998) holds much importance with regard to future research involving the adaptational model of malingering. For instance, the authors suggested that one significant limitation of simulation research on malingering is the difficulty in approximating negative consequences inherent in real-world settings. As an example, Rogers and Cruise noted that involuntary/antagonistic settings are generally characterized by a combination of both positive and negative consequences that differ in magnitude. In fact, they suggested that the next step in research would be to investigate the effects of combined incentives on the clinical presentation of malingering. Generally speaking, the study by Rogers and Cruise suggests that any attempt to test Rogers' (1990a, 1990b) adaptational model of malingering using a simulation design should consider the effects that only minimal design variations can

have on participants' presentations, in addition to how best to approximate real-world settings (for instance, how to incorporate a combination of incentives into scenarios).

Lack of Progress in the Development of Models of Malingering

A great deal of research on malingering has been conducted since Rogers (1990a, 1990b) proposed the adaptational model as an alternative to the pathogenic and criminological models. Of those studies that have investigated the utility of the adaptational model as an approach to conceptualizing malingering, a large majority have produced very encouraging results. However, despite empirical evidence supporting this model, no known studies have directly examined its assumptions. In the following sections, the current status regarding the conceptualization of malingering will be discussed. In order to provide evidence of a continuing lack of development regarding the understanding of malingering, specific attention will be paid to the continued neglect of explanations of malingering and the continued adherence of the DSM to the criminological model.

Continued Emphasis on the Detection of Malingering

Despite the call for increased research attention to be paid to explanatory models of malingering, a large majority of malingering research continues to address improving detection of the condition (Bordini et al., 2002; Rogers, 1997). Studies have examined the utility of such assessment tools as the M Test (Beaber, Marston, Michelli, & Mills, 1985; Gillis, Rogers, & Bagby, 1991), the Structured Interview of Reported Symptoms (SIRS; Rogers, 1986; Rogers, Kropp, Bagby, & Dickens, 1992), the Minnesota Multiphasic Personality Inventory—2nd (MMPI-2; Rogers, Bagby, & Chakraborty, 1993), the Rorschach Inkblot Test (Freuh & Kinder, 1994), the Test of Memory Malingering

(TOMM; Rees, Tombaugh, Gansler, & Moczynski, 1998), and the Wechsler Adult Intelligence Scale—Revised (WAIS-R; Demakis et al., 2001). In addition, research has also investigated the ability of neuropsychological tests to detect exaggeration and malingering (Iverson & Binder, 2000; King, Sweet, Sherer, Curtiss, & Vanderploeg, 2002). Although research endeavors such as these are vital and have contributed greatly to our understanding of how better to identify those who are feigning, they have contributed little to our understanding of individuals' motivations and subsequent decisions to malingering.

Continued Use of the Criminological Model by the DSM

The arrival of the more recent editions of the DSM (DSM-IV and DSM-IV-TR; APA, 1994, 2000) brought no change to the conceptualization of malingering (see Appendix A for the full DSM-IV-TR [APA, 2000] criteria for malingering). Although the DSM-IV (APA, 1994) and DSM-IV-TR (APA, 2000) differ from the DSM-III (APA, 1980) in that they do not contain an explicit statement regarding their atheoretical nature, they avoid any direct reference to an underlying theory (Follette & Houts, 1996). As was previously mentioned, Rogers (1990a, 1990b) noted that the DSM-III's (APA, 1980) movement away from theory and its adherence to a faulty conceptualization of malingering (i.e., the criminological model) occurred simultaneously. However, it seems that despite Rogers' and others' attempts to stimulate change over the past several years, much work has yet to be done.

Importance of Models of Malingering

Regardless of the psychological construct of interest, explanatory models hold much importance with regard to classification, evaluation, treatment, and research. Given

the continuing controversy regarding how best to conceptualize malingering, the value of an enhanced understanding of explanatory models cannot be overstated. Several sources (Bordini et al., 2002; Rogers, 1990a, 1990b, 1997, 2004; Rogers, Sewell, et al., 1994; Rogers et al., 1998) have highlighted the profound and varied effects that explanatory models of malingering could potentially have. For example, theory building and the subsequent establishment of classificatory criteria for malingering rests heavily on our explanatory theories (Rogers, 1990a, 1997; Rogers et al., 1998). Detection of malingering is also well-informed by accepted explanatory models. Knowledge of why individuals decide to feign in particular situations would allow psychologists to devise assessment measures that would take factors such as individual characteristics and situational variables into account (Rogers, Sewell, et al., 1994; Rogers et al., 1998).

However, as Rogers (1997) cautions, explanatory models should not be considered analogous to detection models or assessment methods; just because a given individual has the potential to malingering does not mean that they will do so. Unfortunately, it appears that such biased thinking is influential in evaluations conducted by clinicians and other professionals. For example, Rogers, Sewell, et al. (1994) found support for their contention that clinicians' views regarding the motivations underlying malingering could bias evaluation and subsequent recommendations. More specifically, Rogers et al. (1998) noted that assessment for underlying APD is considered essential by those clinicians who adhere to the criminological model of malingering currently accepted by the DSM. Taken to its logical end, such clinicians are more likely to be suspicious of potential malingering in psychopathic persons but less so in non-psychopathic individuals (Rogers et al., 1998). Unfortunately, this is, in fact, what generally happens. As many

researchers (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b) have pointed out, two of the more firmly held, though scientifically unfounded, beliefs regarding psychopathy and malingering is that psychopaths are both more likely to malingering and are more skilled at feigning than are non-psychopaths.

In light of the potential complications (e.g., biased evaluations) that can result from adherence to deficient explanatory models of malingering, continued research investigating potential alternatives to current models of malingering seems ever more crucial. Furthermore, given the failure of models that embrace the pejorative labeling of malingerers (i.e., as psychologically or morally disordered) to effectively organize current knowledge regarding the behavior, it has been argued that Rogers' (1990a, 1990b) adaptational model, which places emphasis on situational factors, is a more viable option. As was previously mentioned, Rogers has noted encouraging support for his model, which rests on the assumption that situational factors, not underlying character pathology (i.e., madness or badness), are the more reliable predictors of malingering. In order to provide additional empirical support for Rogers' assumption, the remaining sections of this discussion will evaluate research investigating the effects of psychopathic personality features and situational variables on malingering.

Relationship Between Psychopathic Personality Features and Malingering

One of the more controversial issues in the malingering literature involves the role that psychopathy may play in the behavior. According to Cleckley's (1976) 16 diagnostic criteria for psychopathy, this personality pattern is characterized by deficient emotional reactivity (i.e., absence of "nervousness" or psychoneurotic manifestations, lack of remorse or shame, pathologic egocentricity and incapacity for love, and general poverty

of affect) and superficial, manipulative interpersonal relationships (i.e., superficial charm, untruthfulness and insincerity, unresponsiveness in general interpersonal relations, and impersonal sexual relationships). In addition, although Cleckley's criteria also incorporated tendencies to act out (i.e., inadequately motivated antisocial behavior, unreliability, poor judgment and failure to learn from experience, and poorly monitored behavior when intoxicated), Cleckley clearly distinguished psychopathy from common criminal behavior. Cleckley's conceptualization has proven invaluable in designing instruments to assess for psychopathy and associated features. For instance, the aforementioned PCL-R (Hare, 1991), currently one of the most well-validated measures for assessing psychopathy, was developed using Cleckley's delineation of the personality pattern. In fact, research using the PCL-R (Hare, 1991) has shown the relative prevalence of psychopathy to vary significantly by population. Specifically, while it is estimated that less than 1% of the general population would receive high enough PCL-R (Hare, 1991) scores to be identified as psychopaths, around 15% of male prisoners are thought to meet this classification (Hare, 2003; Cunningham & Reidy, 1998). In light of empirical evidence demonstrating psychopathy to be a strong predictor of various negative outcomes among criminal populations, including violence, institutional misbehavior, and criminal recidivism (Hare, 1991, 1996; Salekin, Rogers, & Sewell, 1996), the assessment of this construct continues to be of great importance to mental health professionals (Edens, Buffington, Tomicic, & Riley, 2001).

Given that psychopathy is characterized by pathological lying and deceitful, manipulative behavior (Hare, 1993), the application of this personality structure to malingering seems a logical extension. In fact, various authors have suggested that

psychopaths are not only more likely to engage in malingering, but that they tend to be more effective feigners than non-psychopaths (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). This hypothesized relationship has also been reflected in more recent editions of the DSM, beginning with the DSM-III (APA, 1980) and continuing with the most recent edition (DSM-IV-TR; APA, 2000). As was previously discussed with regard to the criminological model, the current DSM conceptualization of malingering posits that the behavior should be “strongly suspected” in the presence of APD (APA, 2000, p. 739). In the formal nomenclature of the DSM, psychopathic individuals are identified by the manifestation of APD (Clark, 1997). As such, for purposes of the DSM, psychopathic or otherwise antisocial individuals are, in fact, more likely to malingering than are individuals who do not manifest such character pathology. However, as was previously noted, Rogers (1990a, 1990b) has convincingly challenged what he characterizes as the DSM’s “criminological model” on both theoretical and empirical grounds. Additionally, Clark (1997) noted that although various assumptions have been made about the relationship between psychopathy and malingering, this association is, in actuality, poorly understood.

One persisting assumption regarding the relationship between psychopathy and malingering is that psychopathic individuals are significantly more likely to malingering than are non-psychopaths (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). In a study conducted by Sierles (1984), a modest correlation ($r = .45$) was found between psychopathic behavior and self-reported conning and deceptive behavior. However, although these results are suggestive of an inherent relationship between psychopathy and malingering, Rogers (1990b) noted that this was the only study to

provide direct evidence of this association. Generally speaking, subsequent research investigating this association has been limited and inconclusive (Rogers, 1997).

Furthermore, the majority of studies in this area have utilized incarceration as a substitute for psychopathy or a diagnosis of APD. As such, although many believe there to be an inherent relationship between criminality and psychopathy, these constructs cannot be used interchangeably. Caution, therefore, must be exercised in generalizing from these findings (Edens et al., 2000).

Despite these limitations, the limited amount of research investigating the incidence of malingering among psychopaths generally does not support the contention that psychopathic individuals engage in more frequent malingering (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). For instance, in a study conducted by Cornell and Hawk (1989), the exam records of 314 consecutive pretrial forensic evaluations for competency and/or criminal responsibility were reviewed. Defendants were rated as either psychotic, malingered psychosis, or non-psychotic. Though no classification based on psychopathy was utilized, Cornell and Hawk noted that most individuals had been charged with felonies against person. Furthermore, most individuals had extensive records of crimes against persons. The authors identified only 8% of examinees as very likely to be malingering or definitely malingering and also concluded that feigning was motivated by the seriousness of charges. Though Cornell and Hawk did not discuss the role psychopathy may have played in their study, the finding of such a low rate of malingering among individuals likely to be manifesting some degree of psychopathy serves to question the aforementioned assumption (Clark, 1997). Rogers, Gillis, Dickens, and Bagby (1991) found comparable results in their evaluation of the

validity of the SIRS (Rogers, 1992). Rogers et al. found that less than 4% (i.e., 25 out of approximately 700) of their sample of forensic evaluation patients were identified as probable or definite malingerers. Again, although psychopathy was not directly assessed or discussed in this study, it is assumed that this sample of participants likely consisted of a higher proportion of psychopathic individuals. Generally speaking, although such studies do not provide a direct examination of the frequency of malingering among individuals with psychopathic or antisocial tendencies, findings such as these have led many authors to conclude that this relationship may be minimal or nonexistent.

A second assumption regarding psychopathy and malingering is that psychopaths are more adept at malingering than are non-psychopaths. However, the limited amount of research available has failed to provide empirical support for this relationship (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). For instance, in a study conducted by Kropp (1994), the ability of psychopaths to malingering mental illness was directly investigated. One hundred inmates at a correctional facility were randomly assigned to either an experimental condition or a control condition. Participants in the experimental condition were asked to fake mental illness, while those in the control condition were asked to respond honestly. Inmates were assessed for psychopathy using the Psychopathy Checklist—Clinical Version (PCL-CV; Hare et al., 1989), which allowed researchers to classify participants as either high or low in psychopathy, and were additionally assessed by the SIRS (Rogers, 1992). Results revealed that psychopaths, as a group, were not significantly better at feigning mental illness than were non-psychopathic individuals. Furthermore, some research suggests that psychopaths may, in fact, be less skilled at malingering than are non-psychopaths. For example,

Cogburn (1993) assessed both undergraduate and criminal participants for psychopathy using DSM-III-R APD criteria (APA, 1987), the PCL-R (Hare, 1991), and the Socialization (So) Scale for the California Psychological Inventory (CPI; Gough, 1987). Following assessment, participants participated in videotaped structured interviews in which they attempted to persuade interviewers that they had taken part in two socially desirable and two socially undesirable activities. In actuality, participants had only engaged in one act within each condition (i.e., one socially desirable and one socially undesirable). Judges blind to the study then observed the videotapes and rated the believability of participants. Results revealed that higher ratings of psychopathy were associated with lower believability, regardless of whether or not participants were telling the truth.

In light of the lack of empirical evidence supporting these assumptions, researchers have increasingly begun to question the persistent belief that psychopathy and malingering are inherently linked. One potential explanation lies in the current conceptualization of psychopathy as reflected in the DSM (Clark, 1997). Since its inception, the term psychopathy has often been used interchangeably with the term sociopath in order to reflect the same character structure. The choice of term was generally considered reflective of the user's views regarding the origins or determinants of the underlying pathology. For instance, those who used the term psychopath generally held that the syndrome resulted from psychological, biological, and genetic factors. Those who used the term sociopath, on the other hand, believed that the syndrome resulted from social forces and early experiences (Reid & Gacono, 2000). According to Poythress et al. (2001), however, although they share similar features (e.g., habitual

lying, deceitfulness and manipulation) the term sociopath is not synonymous with current conceptualizations of what constitutes psychopathy. As such, the inconsistent use of these terms by researchers impedes the understanding and limits the generalizability of their findings. Furthermore, the concept of APD was intended to have much the same meaning as the terms psychopath and sociopath. However, when the criteria for APD first appeared it was felt that the average clinician could not reliably assess traits such as empathy, egocentricity, and guilt. The diagnosis of APD, therefore, evolved into what clinicians presumably could assess without difficulty, namely that of objective, socially deviant behaviors. As a result of this modification, APD no longer resembled the character pathology it was intended to capture (Reid & Gacono, 2000). The overall result of these contradictions is much confusion in mistakenly assuming that psychopathy, sociopathy, and APD are synonymous concepts. In contrast to the behavior-based approach to conceptualizing APD, psychopathy and sociopathy are defined by a cluster of both personality traits and socially deviant behaviors (Lilienfeld & Andrews, 1996; Reid & Gacono, 2000). However, as was previously noted, the DSM appears to ignore this important distinction, instead designating psychopaths as those individuals manifesting APD. In summary, despite the lack of a demonstrated relationship between psychopathy and malingering, the most widely accepted classification of malingering, which is provided by the DSM, utilizes criteria assuming the existence of this relationship. Unfortunately, in doing so, the DSM incorrectly uses two terms, psychopathy and APD, synonymously. Additional problems result when research endeavors utilize APD as a proxy indicator of psychopathy (Edens et al., 2000; Poythress et al., 2001).

Another explanation for the conviction that psychopathy and malingering are related is provided by Rogers (1990b), who noted that this belief could potentially be a result of skewed sampling. According to Rogers, the vast majority of research on malingering has been conducted in criminal forensic settings. Given that these settings are disproportionately populated by psychopathic or otherwise antisocial individuals, it seems likely that researchers and other professionals have focused specific attention on these character traits as potential predictors of malingering. Similarly, Lilienfeld and Andrews (1996) noted that because many instruments designed to assess psychopathy have been developed on criminal and delinquent populations, the generalizability of these measures to non-criminal populations is severely limited. Rogers (1990b) concluded that this tendency to conduct malingering research in such restricted settings has contributed to the belief that psychopaths are primarily responsible for the vast majority of cases of malingering. Instead, Rogers (1990a, 1990b) contends that the cases of malingering observed in these settings are likely the result of situational factors, namely the involuntary/antagonistic nature of the situation. Consistent with his adaptational model of malingering, Rogers posits that any individual involved in involuntary, antagonistic, or otherwise risky situations would be more likely to malingering. Taken to its logical end, the adaptational model of malingering proposed by Rogers holds that feigning may be expected to occur in a number of different situations and is not necessarily determined by underlying character pathology (Clark, 1997; Rogers, 1990a, 1990b). In light of Rogers' (1990a, 1990b) assertion, the next section of this report will address research on the effects of situational variables on malingering.

Although the research presented in this discussion suggests that most psychopathic individuals do not engage in malingering, the mention of an important cautionary note is warranted. Given that psychopathy is characterized by a variety of conning and deceptive behaviors (Hare, 1993), it would be naïve to assume that this character pathology does not exert at least some influence on malingering. For instance, Edens et al. (2000) found a modest, yet significant ($r = .35$), correlation between scores on a measure of psychopathy and participants' self-reported willingness to mangle in various hypothetical situations. In addition to conducting a general examination of the relationship between psychopathic traits and malingering, Edens et al. investigated the specific effects of malingering on the Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996). One-hundred and forty-three participants drawn from a psychology department participant pool were each administered the PPI under two different conditions, following instructions either to respond honestly or to feign psychosis. In the malingering condition, participants were asked to respond as if they were undergoing a psychological evaluation following an arrest. Participants were additionally instructed that by successfully feigning psychosis they could avoid criminal prosecution. In order to enhance participants' feigning ability, a general description of psychotic symptomatology based on the DSM-IV (APA, 1994) was provided. Furthermore, participants were warned that the instruments used in the study were designed to detect faking. Upon completion of the PPI, participants were administered a brief questionnaire, designed specifically for the study, that asked them to rate the likelihood that they would attempt to mangle in various hypothetical situations (e.g., to avoid a prison sentence by feigning insanity). Ratings were provided using a 7-point scale ranging from "1, not at all likely" to "7,

extremely likely.” Results revealed that although participants were both provided with a description of psychosis and warned that measures were designed to detect feigning, the Deviant Responding (DR) validity scale of the PPI was extremely successful in detecting malingered psychosis, exhibiting an overall correct classification rate of 97.0% (sensitivity = 96.3%, specificity = 97.6%). Furthermore, PPI scores were significantly correlated with an increased willingness to engage in malingering, suggesting that psychopathic personality features may, in fact, be associated with an increased willingness to engage in deception.

The study conducted by Edens et al. (2000) holds much importance with regard to this study. For instance, it is the only known investigation to use participants’ beliefs they would mangle as a dependent variable. The current study attempted to replicate and extend the findings of Edens et al. by examining the effects of situational variables and psychopathic personality features on participants’ willingness to mangle in various hypothetical situations. In attempting to examine the effects of these factors on decisions to mangle, participants were presented with situations involving varying forms and degrees of incentives or punishment. This raised an important issue regarding the nature of psychopathy, namely that of psychopathic individuals tending to exhibit poor self-regulation and a lack of responsiveness to punishment cues. As such, a study requiring participants to engage in a decision-making process while weighing information about context, incentives, and punishments, appeared on the surface to be asking potentially psychopathic individuals to complete a task of which they are relatively incapable.

However, a review of the literature suggests that such a problem could potentially be avoided. The psychopathy literature provides a number of explanations for

psychopaths' personality characteristics and behavior, including fearlessness and inadequate motivation (Lykken, 1957, 1982, 1995), a general insensitivity to punishment cues (Fowles, 1980), impaired affective processing (Hare, Williamson, & Harpur, 1988; Patrick 1994), impaired information processing (Newman, 1998), and even integrative models incorporating all of these approaches (Damasio, 1994). Another potential explanation is that of deficient response modulation, which holds that psychopathic behavior is the result of impaired processing of contextual information that is either unexpected or peripheral to their dominant response set. In this sense, dominant response set refers to the focus of an individual's effortful, enduring attention (Patterson & Newman, 1993; Newman et al., 1997). In other words, psychopathic individuals appear to have significant difficulty suspending an ongoing behavior in order to process and utilize contextual information, particularly when that information is motivationally neutral to the task at hand. Encouraging empirical support exists for the contentions of the response modulation hypothesis (Howland, Kosson, Patterson, & Newman, 1993; Arnett, Smith, & Newman, 1997; Newman et al., 1997). However, unlike this study, previous studies utilized methods that required participants to engage in relatively rapid, repetitive responding, such as with cued reaction time tasks (Howland et al., 1993), continuous motor tasks (Arnett et al., 1997), and computerized picture-word tasks (Newman et al., 1997), over the course of several trials. Taken together, the findings on psychopathy suggest that studies such as this investigation, which did not involve affect-laden material, did not allow for the development of a dominant response set, did not involve a test of divided attention, and did not require participants to provide continuous, rapid responses, was able to provide a reliable measure of the particular variables of

interest. However, although psychopathic personality features appear to exert only some influence on malingering, other potentially influential factors must be considered. As such, this discussion will now turn its attention to the effects of situational variables on malingering.

Relationship Between Situational Factors and Malingering

Research investigating the effects of situational factors on malingering has repeatedly demonstrated that the context of a situation and the incentives associated with a situation can influence both the frequency and presentation of malingering (Rogers, 1990a, 1990b, 1997). However, attempts to tease apart the effects of these two variables have suffered from various shortcomings. For instance, some studies have failed to clearly define and distinguish between context and incentives or to examine them as separate and distinct variables. For example, prevalence data revealing higher rates of malingering in particular settings suggests that context clearly does influence the behavior. Survey research involving forensic experts has estimated the frequency of malingering to be around 15.7-17.4% in forensic and 7.4-7.8% in non-forensic settings (Rogers et al., 1998; Rogers, Sewell, et al., 1994). In addition, rates of malingering have been found to increase in military settings (Rogers, 1990b). As such, prevalence studies are frequently cited in the literature as evidence for the effects of context on malingering. However, these rates could reflect the rates of detection in various settings. Furthermore, because these studies are not characterized by experimental manipulation and control, it is unclear whether the rates they report reflect the influence of context, incentives, or a combination of both.

Studies have also failed to manipulate context and incentives in a manner that would allow for comparisons to be made regarding the individual effects of these variables. For instance, the aforementioned study conducted by Rogers and Cruise (1998) examined the effects of three variables, including context and incentives, on malingered presentations. In their study, Rogers and Cruise presented participants with either a familiar or unfamiliar scenario, ultimately concluding that the variable of context did influence self-presentation (see previous discussion in the section on simulation designs for a detailed discussion of results). However, in manipulating the familiarity of the situation, Rogers and Cruise also manipulated the setting. More specifically, the familiar scenario was set in an academic setting while the unfamiliar scenario was set in a forensic setting. As such, although the researchers confirmed their initial hypothesis regarding the influence of familiarity on malingering, this does not appear to be a sufficient examination of the effects of context given that the manipulation of this variable was not adequately controlled. In addition to these complications, reviews of the malingering literature contain inconsistencies that further blur the line between the effects of context and incentives on malingering. For instance, some discussions of malingering reflect confusion regarding what constitutes an examination of the effects of context versus that of incentives. As an example, reviews such as that by Rogers (1990b) have classified studies that appear to be more a test of the effects of incentives on malingering as evidence for the effects of context.

As a result of these problems, the malingering literature reflects much confusion regarding the influence of contextual factors as compared to that of incentives. Interestingly, Rogers (1990b) suggested that context, in and of itself, may not be the key

variable. In accordance with his adaptational model of malingering, Rogers noted that although context likely does influence self-presentation and malingering to a degree, it appears that the adversarial (i.e., involuntary or antagonistic) nature of a situation is the more influential factor. Furthermore, Rogers concluded from his review of the malingering literature that the “magnitude of the expected goal and adversarialness” interact with one another (p. 185). However, given the previous discussion of Rogers’ use of the term “adversarial,” this contention is complicated by the fact that the adversarialness of a situation appears to be determined both by the immediate context and the associated incentives. Regardless, preliminary attempts to evaluate the adaptational model of malingering have provided support for what appears to be an inherent relationship between context and incentives, suggesting that attempts to experimentally isolate their effects on malingering may prove quite difficult. As such, although these findings help to explain past difficulties in understanding, communicating, and examining the relationship between context and incentives with regard to malingering, continued research in this area is warranted.

Although the previous discussion points to a limited understanding of the individual effects of context on malingering, research investigating the influence of incentives on malingering appears to be much more informative. This is primarily due to the fact that numerous studies have examined the effects of variations in incentive levels within the same context, therefore controlling for this interaction. For example, Rogers et al. (1991) investigated response styles within court-ordered evaluations using the SIRS (Rogers, 1986). Results of this study found that the frequency of malingering varied with the seriousness of the pending charges; those identified as malingering were facing

serious charges, whereas non-malingers were charged with relatively trivial offenses. Comparable results were produced by Rogers and Shuman (2000), who reported that defendants faced with serious criminal charges were more likely to feign psychopathology and, to a lesser extent, cognitive impairment, than were individuals facing less severe charges. Malingering in military settings offers another illustration. For instance, onset of war elevates the rewards for avoiding service (e.g., avoidance of combat and possible death; Rogers, 1990b). Ossipov (as cited in Rogers, 1990b) found that concern by military officials for potential malingering of psychological disturbance increases substantially during wartime. As an example from American history, Exner and Lelever (as cited in Eissler, 1979/1986, p. 100, footnote) reported on cases of malingering in the Austrian army during World War I. The researchers found that as the war progressed and the death toll began to rise, the number of malingers jumped from only a few cases during the early stages of the conflict to around 100,000.

Several studies have attempted to experimentally manipulate incentive levels in order to conduct group comparisons. For example, Wilcox and Krasnoff (1967) examined the effects of test situation and participant motivation on test-taking attitude. Fifty institutionalized veteran psychiatric inpatients were grouped according to level of motivation for discharge and were then randomly assigned to one of two groups, “defensive” and “routine.” In the “defensive” condition, participants were led to believe that their evaluation results would determine their readiness for discharge. In the “routine” condition, participants were assured that the results of their evaluation would not affect their discharge date. Participants were then administered the Marlowe-Crowne Social Desirability scale (So-r; Edwards, 1957) and the MMPI. Test results revealed that

individuals confronted by the threat of discharge produced more MMPI fake-bad profiles than individuals in the neutral condition. Braginsky, Braginsky, and Ring (1969) found comparable results in their study of highly institutionalized schizophrenic patients. Thirty male patients living on open wards were interviewed individually by staff psychiatrists after being randomly assigned to one of three conditions, “discharge,” “open ward,” and “mental status.” Patients in the “discharge” condition were instructed that the purpose of the interview was to determine readiness for discharge. Patients in the “open ward” condition were told that the purpose of the interview was to determine whether they should be in an open or a closed ward. Those in the “mental status” condition were told that the purpose of the interview was to evaluate psychological adjustment to life in the hospital. Upon completion of the interviews, psychiatrists rated each patient according to their degree of psychopathology, the amount of hospital control needed (e.g., complete freedom vs. continuous supervision), and their quality of speech (i.e., pressure, affect, volume, rate, etc.). Results revealed that patients in the “discharge” and “mental status” conditions were significantly more likely to report more psychopathology and to manifest much greater speech impairment than patients in the relatively neutral “open ward” condition.

In examining the ability of the MMPI validity scales to detect malingering among forensic patients, Wasyliv, Grossman, Haywood, and Cavanaugh (1988) found that individuals standing to benefit from malingering were significantly more likely to do so. Seventy-four male forensic patients evaluated at a specialized outpatient treatment and assessment center for psychologically disordered offenders were divided into two groups, “evaluation” and “treatment control.” According to the authors, individuals were assigned

to groups based on the potential external gains available to those found to be mentally disordered. The “evaluation” group consisted of 19 patients referred for sanity evaluation and 16 referred for evaluation of both fitness to stand trial and sanity at the time the alleged crime was committed. It was hypothesized that this group would be populated predominantly by individuals desiring to feign or exaggerate psychopathology, although those planning not to malingering and those suffering from genuine pathology would also be included. The “treatment control” group consisted of 39 individuals previously found not guilty by reason of insanity (NGRI). Of these individuals, 15 were undergoing outpatient treatment at the center and volunteered to take the MMPI in order to assist with research efforts. It was hypothesized that these patients would not be motivated to malingering. The other 24 individuals consisted of hospitalized patients taking the MMPI as part of a readiness for discharge evaluation. Although these individuals stood to benefit from the evaluation, it was expected that they would be less motivated to exaggerate pathology and potentially more motivated to minimize or deny symptomatology. Results revealed that individuals in the “evaluation” group were significantly more likely to malingering on all MMPI validity scales aimed at detecting the behavior (i.e., F, D, F-K index, and O-S subscales). Wasyliv et al. (1988) also found that within the “evaluation” group, 26-57% of profiles demonstrated evidence of malingering, while only 13-33% of profiles in the “treatment control” group were suggestive of feigning. With regard to the “evaluation” group, the authors additionally examined the relationship between MMPI validity scale scores and severity of criminal charges faced. This was accomplished by correlating validity scale scores with potential length of sentence faced. Results revealed a significant positive correlation between exaggerated scores and potential length of

sentence, suggesting to the researchers that an association does, in fact, exist between malingering and crime severity.

Walters (1988) investigated a naturally occurring experiment in which male maximum security inmates completed the MMPI under three different circumstances. Given the variation in conditions, inmates were hypothesized as manifesting varying degrees of motivation to either express or deny psychiatric symptomatology. In one condition, inmates underwent evaluation for possible single-cell placement. Individuals in this condition were considered the most motivated to exaggerate psychopathology. In a second condition, testing was an element of a parole board evaluation. Inmates in this condition were thought to be most likely to benefit from the denial and minimization of psychopathology. In the final condition, inmates completed testing routinely prior to entering group therapy. Given the nature of this “neutral” situation, the researchers hypothesized that inmates would not manifest any intrinsic motivation to either exaggerate or suppress psychiatric symptomatology. Those inmates evaluated for potential single-cell placement scored significantly higher on MMPI fake-bad measures and significantly lower on MMPI fake-good measures than individuals in the other two groups. Furthermore, inmates in the parole board condition scored significantly higher on MMPI fake-good measures and significantly lower on MMPI fake-bad measures compared to individuals evaluated for possible single-cell placement.

In summary, research investigating the effects of situational factors on malingering continually demonstrates that the context of, and incentives associated with, a situation significantly influences malingering rates and presentations (Rogers, 1990a, 1990b, 1997). As has been discussed, attempts to tease apart the effects of these two

variables have met with difficulty. Generally speaking, those studies characterized by experimental manipulation have variously failed to effectively define and distinguish between context and incentives, examine context and incentives as separate and distinct variables, and manipulate context and incentives in such a manner that comparisons can be made regarding their individual effects. As a result, understanding of the influence of contextual factors on malingering, relative to the influence of incentives, is rather limited. However, current knowledge regarding the individual effects of context, in addition to an abundance of research examining the effects of variations in incentive levels within the same context, have shed some much needed light on the influence of these variables.

Purpose of the Study

Previous research has suggested that the current conceptualization for why malingering occurs, which has been referred to as the criminological model, is significantly limited in its utility as an explanatory model. As such, it has been argued that this model is in need of revision or complete replacement (Rogers, 1990a, 1990b). One alternative conceptualization that has exhibited promise as an explanatory model of malingering is Rogers' adaptational model. Generally speaking, the model's assumption that situational variables, not underlying character pathology, more reliably explain instances of malingering, is strongly supported by the empirical literature. For instance, the assumptions that psychopathic individuals are more likely to malingering and are more effective malingerers than non-psychopaths have garnered little empirical support (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). Furthermore, research investigating the effects of situational factors on malingering continually demonstrates that the context of and incentives associated with a situation significantly

influences malingering rates and presentations (Rogers, 1990a, 1990b, 1997). However, despite its demonstrated merit, the assumptions of this model have yet to be subjected to direct investigation. Instead, emphasis continues to be placed on enhancing detection measures, rather than on increasing understanding of why individuals malingering (Bordini et al., 2002; Rogers, 1997). Unfortunately, this disproportionate research focus is counterintuitive, given that explanatory models ultimately guide efforts at detection (Rogers, Sewell, et al., 1994; Rogers et al., 1998).

This study therefore attempted to provide additional empirical support for the adaptational model of malingering. In order to accomplish this task, this study examined the effects of psychopathic personality traits, context, and incentives on participants' beliefs that they would malingering and experimentally examined which factor(s) were most critical in this decision-making process. Furthermore, this study attempted to contribute to the current understanding of the influence of context and incentives on malingering by clearly defining and experimentally manipulating each variable. The term context was used to refer to the particular setting in which individuals found themselves (i.e., forensic, medical or military). The term incentive, on the other hand, was used to refer to the potential outcome of a situation that motivated individuals to behave in a given manner.

Participants read case vignettes reflecting high or low levels of incentives in each of three contexts (i.e., forensic, military, and medical) and responded to follow-up questions as if they, themselves, were the individual depicted in the scenario. This was the first known study to examine the effects of context on malingering in this way. Participants were also asked to complete a measure of psychopathic personality (i.e., the PPI). In adding a measure of psychopathic personality features, this study hoped to

demonstrate that this variable, although influential, was not the crucial factor in predicting the likelihood of malingering. Furthermore, this was only the second known study to use participants' beliefs that they would malingering as a dependent variable.

This investigation was guided by the following hypotheses:

1. Higher levels of incentives will be significantly associated with participants' decisions to engage in malingering more often than lower levels of incentives.
2. It is hypothesized that context will not significantly affect participants' decisions to malingering.
3. PPI scores will be significantly associated with participants' decisions to engage in malingering.
4. Incentives will account for more of the variance in participants' decisions to malingering than will PPI scores.

Chapter 3

METHODOLOGY

Design of the Study

In order to test the primary hypothesis that the perceived involuntary/antagonistic nature and associated incentives of a situation influence an individual's beliefs that they would malingering, a mixed-subjects experimental design was used. Participants were randomly assigned to respond to case vignettes reflecting high or low levels of incentives in each of three settings (i.e., forensic, military, and medical). They also completed a measure of psychopathic personality, the Psychopathic Personality Inventory (PPI). Thus, independent variables included PPI scores, context, and incentives. The primary dependent variable was participants' ratings on a Likert-type scale regarding their beliefs that they would malingering in each situation.

Power Analyses

A power analysis was conducted in order to determine appropriate sample size. With the exception of the current study, the investigation conducted by Edens et al. (2000) is the only known study to use participants' beliefs that they would malingering as a dependent variable. Edens et al. found a modest, yet significant ($r = .35$), correlation between PPI scores and participant's self-reported willingness to malingering in various

hypothetical situations. As such, the sample size for this study was based on a medium effect size estimate. Consistent with convention that allows for minimization of both Type I and Type II errors, alpha was set at .05 and power was set at $\beta = .80$. Based on these criteria, a sample size of 210 was needed to detect a medium effect size on a test of the effects of context, incentives, and psychopathic personality features on participants' beliefs that they would malingering (Cohen, 1992).

Participants

A sample of 214 university students participated in the study. Participants were recruited using two approaches: advertisement of the study using a departmental Internet site and solicitation of participants by visiting psychology classes. As compensation for their participation, students were provided with extra credit in their respective psychology courses. Given that previous research has not investigated the effects of demographic variables on participants' decisions to malingering or beliefs that they would malingering, no exclusion criteria based on demographic variables were invoked.

Materials

Case Vignettes

Each participant was presented with one of two versions (i.e., high or low incentives) of a case vignette set in three different contexts (i.e., forensic, military, and medical; See Appendix B for copies of the six vignettes). In order to elicit varying degrees to which participants perceived the situation as being involuntary/antagonistic (i.e., high and low) within each context, the potential positive and negative incentives presented in the vignettes were varied to create differential levels of personal loss and gain. The three contexts used in the vignettes were selected based on their frequent

appearance in the malingering literature. More specifically, a considerable amount of malingering research conducted in these three settings has found that variations in the involuntary/antagonistic nature of situations result in differential rates and presentations of malingering.

Measures

Vignette Questionnaire

A questionnaire was developed specifically for this study in order to assess individuals' beliefs about how they would respond in various hypothetical situations. Responses to particular questionnaire items were made using a Likert-type rating scale ranging from 1 (*not at all likely*) to 7 (*extremely likely*). For instance, participants were asked to indicate for each vignette the likelihood that they would engage in malingering in response to the situation presented. Participants' responses to this question served as the primary dependent variable for this study. Participants were also asked to provide ratings regarding how much effort they felt they would employ in malingering and the extent to which they felt they could benefit from malingering successfully. In addition, participants were asked to rate their ability to imagine themselves in the hypothetical situations. Participants responded to additional items by noting either "Yes" or "No." For instance, participants were asked to indicate if they had previously been in situations similar to those depicted in the vignettes and whether or not they malingered. Participants were also asked if they had been in a similarly involuntary/antagonistic situation as any of those depicted and whether or not they malingered. Finally, each participant was asked to provide information about his or her gender, age, and ethnicity. The specific items for the vignette questionnaire are listed in Appendix C.

Psychopathic Personality Inventory (PPI)

The PPI (Lilienfeld & Andrews, 1996; see Appendix D) was used to measure psychopathic personality in this study. This measure consists of 187 items divided among eight subscales, each designed to reflect the major personality traits of psychopathy. The subscales include: (1) Machiavellian Egocentricity (narcissistic attitudes towards interpersonal relationships), (2) Social Potency (perceived ability to manipulate others), (3) Coldheartedness (callousness and guiltlessness), (4) Carefree Nonplanfulness (lack of forethought), (5) Fearlessness (absence of self-preservation resulting in risk-taking behavior), (6) Blame Externalization (unwillingness to accept personal responsibility for behavior), (7) Impulsive Nonconformity (disregard for social norms), and (8) Stress Immunity (absence of stress reactions in anxiety-provoking situations). The PPI is a self-report measure developed in order to assess core psychopathic personality traits in non-criminal populations. One of the more defining characteristics of the PPI is its focus on personality traits, rather than antisocial acts, in assessing the presence of psychopathic personality traits (Lilienfeld & Andrews, 1996; Sandoval et al., 2000).

Items on the PPI are answered using a 4-point Likert-type scale (1 = *false*, 2 = *mostly false*, 3 = *mostly true*, 4 = *true*). In addition to providing scores on the eight subscales previously mentioned, the PPI produces a composite psychopathy index of which higher scores are reflective of more psychopathic traits. The current study relied on the total psychopathy index score and did not evaluate individual factor scores. The PPI has demonstrated adequate psychometric properties across both criminal and non-criminal populations (Lilienfeld & Andrews, 1996; Sandoval et al., 2000). According to

Lilienfeld & Andrews (1996), internal consistency coefficients have ranged from .90 to .93 for the total score and from .70 to .90 for each of the eight subscales in non-criminal samples. In prison samples, internal consistency ranged from .90 to .91 for the total score and from .63 to .91 for the eight subscales (Poythress, Edens & Lilienfeld, 1998; Sandoval et al., 2000). An evaluation of test-retest reliability produced correlations of .95 for the total score and between .82 and .94 for the eight subscales using an average interval of 26 days (Lilienfeld & Andrews, 1996). Evaluations of the construct and criterion-related validity of the PPI have also produced favorable results. For instance, Lilienfeld & Andrews (1996) found the PPI to be correlated with peer ratings of psychopathic traits and self-reports of antisocial behavior. The PPI was also found to be related to the Psychopathic Deviate Scale of the Minnesota Multiphasic Personality Inventory (MMPI). Furthermore, in studies using prison samples, the PPI was found to be correlated with scores on the Psychopathy Checklist – Revised (PCL-R; Poythress et al., 1998), positively associated with a measure of aggression, and negatively associated with a measure of empathy (Sandoval et al., 2000).

Procedure

Students participated in the study in both smaller and larger groups. Participants were seated in such a way that testing materials were outside of the line of sight of other participants. Participants were told that the study was concerned with examining the decision-making process. Following explanation of the study, written informed consent was obtained in a manner consistent with Institutional Review Board (IRB) policies (see Appendix E for informed consent materials). Specifically, participants were provided with two copies of the informed consent document. The document was read aloud by the

examiner while participants followed along, and participants were encouraged to ask questions for clarification about the study. The voluntary nature of the study was emphasized at this time, and participants were, therefore, informed that they could discontinue participation at any time. Participants were then asked to sign both copies of the informed consent. They were given one copy for their own records, while the second copy was retained by the principal investigator.

Each participant then received a packet containing instructions, three case vignettes, and three copies of the vignette questionnaire (one for each case vignette). Packets were randomly distributed and each condition was represented equally. Upon completion of the vignette questionnaire, packets were recollected and participants were then asked to complete the PPI. Though it was likely that participants were able to determine the nature of the study while reading case vignettes and completing questionnaires, it was believed that the confidential nature of data collection dissuaded participants from completing measures dishonestly. Following completion of all study measures, participants were thanked for their participation and informed who to contact if they had any questions regarding either the nature or the results of the study.

Pilot Study

In order to determine the effectiveness of the six vignettes in eliciting varying degrees to which participants would perceive the situation as being involuntary/antagonistic (i.e., high vs. low) within each context (i.e., forensic, military, and medical), the vignettes were presented to a group of psychology students (i.e., graduate students and research assistants) at ISU. These mock participants were asked to read the vignettes, respond to the vignette questionnaire and provide critical assessments

of these materials. This information was used to clarify the wording of the vignettes and the questionnaires and to modify incentive levels to obtain the desired effects.

Upon completion of the manipulation checks, five additional psychology students (i.e., graduate students and research assistants) at ISU were recruited to complete the entire packet of measures to be used in the actual study. The information provided by this round of pre-study testing was used to identify any confusion with the task and provide an estimate of the amount of time necessary to read the vignettes and complete the follow-up measures (i.e., the vignette questionnaire and the PPI).

Data Analysis

Data Entry

Participants' responses to the vignette questionnaire and the PPI were entered into a database for statistical analysis. In order to determine the appropriateness of including data in further analyses, a preliminary examination was conducted. Based on this review, data for two individuals was removed completely, as they had participated twice. Furthermore, PPI data for 17 participants was removed, as these individuals failed to complete at least 30% of PPI items. Remaining PPI data was considered appropriate for statistical analysis, as no other participant omitted greater than 5% of PPI items. No exclusion criteria based on demographic variables were invoked. Accuracy of data entry was also checked by random verification of 10% of scores entered.

Responses to the vignette questionnaire were treated either as continuous (e.g., "How likely would you be to respond honestly to all of the measures discussed in this situation?") or categorical (e.g., "Have you ever been in a situation(s) that was as involuntary or antagonistic as this one?") variables. The total psychopathy index score

provided by the PPI was used for analysis of the presence of psychopathic personality traits. PPI subscale scores were included only in preliminary analyses.

Chapter 4

RESULTS OF THE RESEARCH

Data Collection

Data was collected from 216 participants. However, two individuals participated in the study twice, so their duplicate data was removed. As such, data from a total of 214 participants was entered and included in further analyses. Of these, 17 participants failed to complete the PPI, so analyses involving the PPI are based on only 197 participants.

Demographic Characteristics of Participants

The majority of participants in this study were female, accounting for 71.96% of the overall sample. Participants were predominantly Caucasian (70.56%), followed by African American (24.30%), Hispanic (2.80%), Asian (1.87%) and Other (0.47%). Over half of participants were Freshmen (56.07%), followed by Juniors (14.02%), Seniors (13.08%) and Sophomores (11.21%). Given the unexpected difficulty in recruitment, a small number of Graduate students were allowed to participate, accounting for 5.61% of the sample. The ages of participants ranged from 18 to 49 years of age. The mean age of participants was 21.03 years ($SD = 5.35$).

Preliminary Analyses

The data obtained in this study was first summarized, and descriptive statistics were examined. As previously noted, participants completed a questionnaire designed specifically for this study in response to each of the three scenarios with which they were presented. A gender breakdown of participants in each condition is presented in Table 4.1.

Table 4.1

Gender Breakdown of Participants in Each Condition

Incentive Level and Context	Men	Women
<u>High incentive level</u>		
Criminal Justice	29	78
Military	28	78
Medical	34	73
<u>Low incentive level</u>		
Criminal Justice	31	76
Military	32	76
Medical	26	81

Responses to three vignette items were of particular interest in this study and were, therefore, included in preliminary and primary analyses. Responses to these items were provided using a Likert-type rating scale ranging from 1 (*not at all likely*) to 7 (*extremely likely*). For instance, participants rated the likelihood that they would engage

in malingering in response to the situation presented (questionnaire item 1). Responses to this question served as the primary dependent variable for this study. Participants also rated how much effort they would employ in malingering (questionnaire item 2) and to what extent they felt they could benefit from malingering successfully (questionnaire item 4). The means and standard deviations for responses to these vignette items, across contexts and incentive levels, are presented in Tables 4.2, 4.3 and 4.4.

Table 4.2

Mean and Variance for Responses to Principal Vignette Items: Criminal Justice Context

Incentive Level and Vignette Item Concept	Mean	SD
<u>High incentive level</u>		
Likelihood of malingering	4.94	1.88
Effort employed in malingering	5.19	1.88
Perceived benefit of malingering	4.94	1.91
<u>Low incentive level</u>		
Likelihood of malingering	4.38	2.08
Effort employed in malingering	4.73	2.06
Perceived benefit of malingering	4.85	2.01

Generally speaking, participants' average ratings in response to these questions were consistently higher, in both the high and low incentive level conditions, in the criminal justice setting, relative to the medical and military settings, respectively. Trends were also observed when ratings within the same context were examined. For instance, in

all contexts, participants' average ratings were all greater in the high incentive level conditions. In addition, the differences between participants' average ratings in the high and low incentive level conditions were greater in the criminal justice and military

Table 4.3

Mean and Variance for Responses to Principal Vignette Items: Military Context

Incentive Level and Vignette Item Concept	Mean	SD
High incentive level		
Likelihood of malingering	4.10	2.29
Effort employed in malingering	4.16	2.37
Perceived benefit of malingering	4.32	2.34
Low incentive level		
Likelihood of malingering	3.57	2.19
Effort employed in malingering	3.86	2.22
Perceived benefit of malingering	3.71	2.17

contexts than in the medical context. Remaining questionnaire items were included in secondary analyses that will be discussed in a subsequent section. Results of multivariate analyses that examined the effects of context and incentive level on questionnaire ratings will also be presented later.

Participants in this study also completed the PPI, a 187-item self-report measure designed to assess core psychopathic personality traits in non-criminal populations. Items on the PPI are answered using a 4-point Likert-type scale (1 = *false*, 2 = *mostly false*, 3 =

mostly true, 4 = *true*). In addition to providing a composite psychopathy index score, the PPI provides eight subscale scores designed to reflect the major personality traits of psychopathy. Composite scores in this study ranged from 227 to 504. The mean composite score was 363.91 ($SD = 42.07$). The means, standard deviations and ranges for all PPI scales are presented in Table 4.5. Generally speaking, these findings are consistent with previous studies using college student samples (Edens et al., 2000; Edens et al., 2001; Lilienfeld & Andrews, 1996) and, as would be expected, are somewhat lower than results obtained in correctional samples (Poythress et al., 1998).

Table 4.4

Mean and Variance for Responses to Principal Vignette Items: Medical Context

Incentive Level and Vignette Item Concept	Mean	SD
High incentive level		
Likelihood of malingering	4.17	2.20
Effort employed in malingering	4.21	2.30
Perceived benefit of malingering	5.00	2.12
Low incentive level		
Likelihood of malingering	4.07	2.02
Effort employed in malingering	4.19	2.02
Perceived benefit of malingering	4.64	2.10

In order to examine the relationship between psychopathic personality traits and participants' decisions to malingering, PPI composite scores and participants' responses to

key vignette items were submitted to correlational analyses. A significant association was found between PPI composite scores and how likely participants' felt they would be to malingering, $r = .24, p < .01$. This finding is consistent with previous research showing that PPI composite scores in college student samples are somewhat predictive of willingness

Table 4.5

Mean, Variance, and Range for PPI Scales

PPI Scale	Mean	SD	Range
Total Score	363.91	42.07	227-504
Machiavellian Egocentricity	64.92	13.40	36-106
Social Potency	63.81	11.03	34-89
Coldheartedness	42.33	7.50	26-64
Carefree Nonplanfulness	37.27	7.10	21-64
Fearlessness	46.65	10.88	21-73
Blame Externalization	38.93	9.02	20-68
Stress Immunity	28.13	5.66	15-42

to malingering in various settings (Edens et al., 2000). PPI composite scores were also significantly associated with the level of effort participants' felt they would put into malingering ($r = .25, p < .01$), as well as the extent to which participants' felt they could benefit from malingering in the situations presented ($r = .17, p < .01$). The results of correlational analyses involving all PPI scales and responses to principal vignette items are presented in Table 4.6.

Table 4.6

Pearson Correlations Between PPI Scales and Principal Vignette Items

PPI Scale	Likelihood of Malingering	Effort Employed in Malingering	Perceived Benefit of Malingering
Total Score	0.24**	0.25**	0.17**
Machiavellian Egocentricity	0.33**	0.33**	0.24**
Social Potency	0.09	0.09	0.03
Coldheartedness	0.06	0.03	0.02
Carefree Nonplanfulness	0.21**	0.19**	0.16**
Fearlessness	0.05	0.04	0.02
Blame Externalization	0.19**	0.25**	0.13*
Impulsive Nonconformity	0.08	0.10	0.14**
Stress Immunity	-0.05	-0.07	-0.01

The relationship between key demographic variables and variables of particular interest to this study were analyzed using correlational analyses and t-tests. For instance, participant age and PPI composite scores were not found to be significantly related ($r = -.17, ns$). The results of correlational analyses involving participant age and all PPI scales are presented in Table 4.7. *T*-tests were used to examine the relationship between participant gender and PPI composite scores and revealed a significant effect for gender, $t(195) = 4.41, p < .01$, with men receiving higher scores than women. Men also received higher scores than women on all but two PPI subscales, though these differences did not

Table 4.7

Pearson Correlations Between Participant Age and PPI Scales

	1	2	3	4	5	6	7	8	9	10
Age	--	--	--	--	--	--	--	--	--	--
Total Score	-.17	--	--	--	--	--	--	--	--	--
Machiavellian Egocentricity	-.16	.79**	--	--	--	--	--	--	--	--
Social Potency	-.10	.56**	.27*	--	--	--	--	--	--	--
Coldheartedness	.05	.29**	.18	.02	--	--	--	--	--	--
Carefree Nonplanfulness	-.01	.50**	.43**	.07	.18	--	--	--	--	--
Fearlessness	-.24*	.64**	.28**	.30**	.01	.15	--	--	--	--
Blame Externalization	-.21	.48**	.51**	.03	-.19	.24*	.15	--	--	--
Impulsive Nonconformity	-.02	.70**	.50**	.26*	-.01	.30**	.46**	.41**	--	--
Stress Immunity	.10	.25*	-.08	.33**	.37**	-.12	.31**	-.39**	.01	--

* $p < .05$; ** $p < .01$

achieve statistical significance. Generally speaking, these findings are consistent with previous studies using college student samples (Lilienfeld & Andrews, 1996), and with previous research demonstrating that psychopathic traits are more common among men than women (Lykken, 1984). The results of *t*-tests involving participant gender and all PPI scales are presented in Table 4.8.

Primary Analyses

Given that this study's design was not completely randomized, various statistical approaches were utilized to obtain main effects and interaction effects for the key variables. The results of these primary analyses will therefore be presented in three parts. First, results of a test for the main effect of context that disregarded incentive level will be presented. Results of a test for the main effect of incentives, disregarding context, will then be presented. Finally, results of a test of the interaction between context and incentive level will be discussed.

Table 4.8

T-tests Between Participant Gender and PPI Scales

PPI Scale	Men		Women		<i>t</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Total Score	384.23	37.68	356.04	41.15	4.41**
Machiavellian Egocentricity	69.91	13.75	62.99	12.79	3.33*
Social Potency	65.93	10.64	62.98	11.10	1.69
Coldheartedness	44.85	7.75	41.35	7.19	3.00
Carefree Nonplanfulness	37.04	7.35	37.36	7.02	-.29
Fearlessness	51.69	9.60	44.70	10.75	4.22**
Blame Externalization	38.71	9.35	39.01	8.92	-.21
Impulse Nonconformity	37.84	7.47	34.74	7.86	2.52
Stress Immunity	31.44	5.05	26.85	5.38	5.45**

* $p < .05$; ** $p < .01$

In order to examine whether the context of a situation influenced decisions to malingering, a test for the main effect of context while disregarding incentive level was required. To accomplish this task, a repeated-measures analysis was conducted using context as the within-subjects variable. Three context levels (criminal justice, military and medical) were identified. Context was found to significantly impact likelihood of malingering, $F(2, 211) = 12.16, p < .01$. An additional analysis was conducted using a Scheffe procedure in order to minimize the possibility of spurious results. Participants reported being more likely to malingering in the criminal justice as compared to the military context, $F(1, 212) = 27.48, p < .01$ and also more likely to malingering in the criminal justice as compared to the medical context, $F(1, 212) = 11.36, p < .01$.

Additional repeated-measures and Scheffe analyses were conducted to examine the effects of context on other variables of interest. These analyses revealed that context significantly impacted the level of effort participants felt they would put into malingering, $F(2, 211) = 16.10, p < .01$. Furthermore, participants felt they would put more effort into malingering in the criminal justice as compared to the military context, $F(1, 212) = 31.93, p < .01$, and also in the criminal justice as compared to the medical context, $F(1, 212) = 22.00, p < .01$. Context was also found to significantly impact the extent to which participants felt they could benefit in the given situation, $F(2, 211) = 15.37, p < .01$. Participants reported feeling they could benefit more from malingering in the criminal justice as compared to the military context, $F(1, 212) = 26.93, p < .01$, and could benefit more in the military as compared to the medical context, $F(1, 212) = 17.45, p < .01$. The estimated marginal means and standard errors for responses to principal

vignette items within each context, disregarding incentive level, are presented in Table 4.9.

As noted above, not all participants were presented with both high and low incentive level conditions within each context. In order to examine whether the incentives associated with a situation influence decisions to malingering, while disregarding context, additional summary variables were first created. A summary variable representing the number of high incentive level conditions with which each participant was presented (i.e., 0, 1, 2 or 3), ignoring context, was constructed and used as an independent variable. One-way ANOVA's were then conducted and failed to produce a significant result, suggesting that incentive level did not significantly impact likelihood of malingering, $F(3, 210) = 1.93, ns$. To give a more powerful test of the precise hypothesis that incentive level would increase participants' willingness to malingering, a test for a linear effect of increasing incentive levels was conducted. Consistent with the aforementioned results, incentive level was not found to significantly impact how likely participants felt they would be to malingering, $t(210) = 1.25, ns$.

Additional one-way ANOVA's were then conducted to examine the effects of incentive level on other variables of interest. These analyses revealed that incentive level did not significantly impact the level of effort participants felt they would put into malingering, $F(3, 210) = .97, ns$, or the extent to which participants felt they could benefit in the given situation, $F(3, 210) = 2.02, ns$. Tests for a linear effect of increasing incentive levels also failed to produce significant results in terms of participants' perceived level of effort, $t(210) = .46, ns$, and perceived level of benefit, $t(210) = 1.11, ns$.

Table 4.9

Estimated Marginal Means and Standard Errors for Responses to Principal Vignette Items Within Context, Disregarding Incentive Level

Vignette Item Concept and Context	<i>N</i>	Mean	<i>SE</i>
Likelihood of malingering			
Criminal justice context	214	4.66 ^{ab}	.14
Military context	214	3.84 ^a	.15
Medical context	214	4.12 ^b	.14
Effort employed in malingering			
Criminal justice context	214	4.96 ^{ab}	.14
Military context	214	4.01 ^a	.14
Medical context	214	4.20 ^b	.15
Perceived benefit of malingering			
Criminal justice context	214	4.90 ^a	.13
Military context	214	4.01 ^{ab}	.16
Medical context	214	4.82 ^b	.14

^a and ^b denote significant differences between groups at the $p < .01$ level.

In order to examine the effects of incentive level, varied by context, on decisions to malingering, a more complex analytic approach was required. Specifically, an approach was needed to determine if incentive effects differed under the different contexts, or alternatively, if context effects differed under different incentive conditions. In this study, vignettes were presented in the same context order (i.e., criminal justice, military and

medical) to each participant. It was, therefore, determined that variables representing the differences between participants' responses to the same question in each context would reflect incentive level effects varied by context. Specifically, a variable was created to represent the difference between participants' responses to a question in the criminal justice and military contexts, while a separate variable represented the difference between responses to the same question in the military and medical contexts. A multivariate analysis was then conducted using the aforementioned summary variable. As previously noted, this summary variable represented the number of high incentive level conditions with which each participant was presented, ignoring context. It was determined that significant results should indicate context differences depend on the incentive levels participants were administered. This analysis failed to produce a significant result in terms of how likely participants felt they would be to malingering, $F(3, 210) = .52, ns$. Additional multivariate analyses also failed to produce significant results in terms of how much effort participants felt they would put into malingering, $F(3, 210) = .31, ns$, and the extent to which participants felt they could benefit from malingering in the given situation, $F(1, 212) = .15, ns$. Given that a more powerful test of the interaction between context and incentive level might be obtained from a test of the linear trend of incentive level across context, these analyses were subsequently conducted. These analyses also showed no evidence in support of an interaction effect between context and incentive level in terms of participants' perceived likelihood of malingering, the effort they felt they would employ, or the perceived benefit of malingering. The estimated marginal means and standard errors for responses to principal vignette items across contexts and incentive levels are presented in Tables 4.10, 4.11 and 4.12.

Table 4.10

*Estimated Marginal Means and Standard Errors for Responses to Vignette Item
Regarding Likelihood of Malingering Across Context and Incentive Levels*

Context	Number of High Incentive Level Conditions Present	<i>N</i>	Mean	<i>SE</i>
Criminal justice				
	0	27	4.15	.38
	1	80	4.95	.22
	2	81	4.42	.22
	3	26	5.08	.39
Military				
	0	27	3.26	.43
	1	80	4.14	.25
	2	81	3.74	.25
	3	26	3.81	.44
Medical				
	0	27	4.04	.41
	1	80	4.24	.24
	2	81	3.88	.23
	3	26	4.62	.41

Table 4.11

*Estimated Marginal Means and Standard Errors for Responses to Vignette Item
Regarding Effort Employed in Malingering Across Context and Incentive Levels*

Context	Number of High Incentive Level Conditions Present	<i>N</i>	Mean	<i>SE</i>
Criminal justice				
	0	27	4.74	.38
	1	80	5.10	.22
	2	81	4.85	.22
	3	26	5.08	.39
Military				
	0	27	3.56	.44
	1	80	4.31	.26
	2	81	3.95	.26
	3	26	3.73	.45
Medical				
	0	27	4.04	.42
	1	80	4.39	.24
	2	81	3.99	.24
	3	26	4.46	.43

Table 4.12

*Estimated Marginal Means and Standard Errors for Responses to Vignette Item
Regarding Perceived Benefit of Malingering Across Context and Incentive Levels*

Context	Number of High Incentive Level Conditions Present	<i>N</i>	Mean	<i>SE</i>
Criminal justice				
	0	27	4.41	.37
	1	80	5.24	.22
	2	81	4.67	.22
	3	26	5.08	.38
Military				
	0	27	3.78	.44
	1	80	4.21	.26
	2	81	3.86	.25
	3	26	4.12	.45
Medical				
	0	27	4.33	.41
	1	80	5.05	.24
	2	81	4.65	.23
	3	26	5.15	.41

In order to examine the final hypothesis involving the relative contribution of incentive level versus psychopathic personality traits to the prediction of likelihood of malingering, hierarchical multiple regression analyses were performed. Participants' ratings of the likelihood that they would engage in malingering in response to the situation presented, summed across contexts, served as the dependent variable. The PPI composite score and the aforementioned summary variable representing number of high incentive level conditions seen, ignoring context, served as the independent variables. In the first analysis, the PPI composite score was entered alone and accounted for about 11% of the variance, ($R^2 = .11$). In the second analysis, the summary variable was added into the equation after the PPI composite score. Incentive level did not account for additional significant variance, ($\Delta R^2 = .01, ns$), in decisions to malingering (Table 4.13).

Table 4.13

Hierarchical Multiple Regression Analyses Relating PPI Composite Scores and Number of High Incentive Level Conditions Presented to Likelihood of Malingering

Step and Predictor Variable	β	R^2	ΔR^2
1. PPI Total Score	.33	.11	
2. Number of High Incentive Level Conditions	.08	.11	.01

Secondary Analyses

Additional *t*-tests were conducted in order to examine how participants with high versus low PPI total scores responded to principal vignette items. Participants were placed into one of two groups based on whether they fell above or below the median PPI

composite score. Generally speaking, those participants whose PPI composite scores fell above the median felt they were significantly more likely to malingering in the criminal justice setting, $t(193) = -3.17, p < .01$. These participants were also more likely to feel they would employ more effort in malingering in the criminal justice setting, $t(193) = -3.91, p < .01$, and that they could benefit from malingering, $t(193) = -2.22, p < .01$, in the criminal justice setting. The results of these analyses are presented in Table 4.14.

Table 4.14

T-tests Between High and Low PPI Composite Scores and Primary Vignette Items

Vignette Item Concept and Context	High PPI Group		Low PPI Group		<i>t</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Likelihood of malingering					
Criminal justice context	4.23	2.01	5.11	1.88	-3.17**
Military context	3.62	2.09	4.00	2.37	-1.71
Medical context	3.97	2.09	4.27	2.11	-1.01
Effort employed in malingering					
Criminal justice context	4.43	2.01	5.49	1.80	-3.91**
Military context	3.82	2.17	4.15	2.41	-1.00
Medical context	4.04	2.14	4.34	2.17	-0.98
Perceived benefit of malingering					
Criminal justice context	4.57	2.00	5.19	1.90	-2.22
Military context	3.68	2.10	4.22	2.38	-1.69
Medical context	4.49	2.12	5.11	2.08	-2.06*

* $p < .05$; ** $p < .01$

Remaining questionnaire items were included in secondary analyses. One of these items involved participants' ratings regarding their ability to imagine themselves in the hypothetical situations. The means and standard deviations for responses to this item are presented in Table 4.15. Participants' average ratings in response to this question suggested they were at least moderately successful in imagining themselves in all situations presented. More specifically, these analyses revealed that participants were somewhat more successful in imagining themselves in the medical context in both the high and low incentive level conditions, followed by the military and criminal justice contexts, respectively. Furthermore, although participants' average ratings were all greater in the high incentive level conditions, the differences between average ratings in the high and low incentive level conditions were not large enough in any context to suggest significant problems with the vignettes.

Another item asked participants to indicate if they had previously been in a situation similar to that depicted in the vignette and whether or not they had responded honestly. Twenty participants indicated they had been in a situation similar to that depicted in the criminal justice vignette, while 9 (45%) of these indicated they had responded dishonestly. Seven of 16 (44%) participants indicated they had responded dishonestly in a situation similar to that depicted in the military vignette, while only 2 of 29 (7%) participants had done so in a comparable medical situation. Participants were also asked if they had simply been in an involuntary or antagonistic situation and whether or not they had responded honestly. Of the 24 participants indicating they had been in such a situation, 8 (33%) indicated they had responded dishonestly. Some degree of overlap was noted in responses to these questionnaire items. For instance, two

participants indicated they had responded dishonestly in both a criminal justice and some other involuntary or antagonistic situation. One participant responded dishonestly in a military and another involuntary setting. One participant responded dishonestly in a criminal justice, a military and another involuntary setting, while another participant indicated they had responded dishonestly in all settings.

Table 4.15

Mean and Variance for Responses to Item: Ability to Imagine Self in Situation

Incentive Level and Context	Mean	SD
High incentive level		
Criminal justice	4.06	1.87
Military	4.67	2.06
Medical	5.05	1.89
Low incentive level		
Criminal justice	3.94	1.90
Military	4.41	1.78
Medical	4.94	1.78

Note: Response values ranged from 1 (not at all likely) to 7 (extremely likely).

Additional Analyses

For the reader concerned with potential artifacts introduced by the analyses described above, Appendix F presents analyses for a subsample of participants who received similar incentive levels across contexts. Specifically, these analyses examine the

effects of incentives within each context, thus providing a more direct test of this study's primary hypothesis.

Chapter 5

DISCUSSION OF FINDINGS

Previous research on malingering has focused primarily on improving detection of the behavior, rather than on increasing our understanding of why people malingering and what factors most strongly influence their decisions to do so. Research that has examined the impact of situational variables on malingering has revealed that the context of, and incentives associated with, a situation can influence both the frequency and presentation of malingering (Rogers, 1990a, 1990b, 1997). Furthermore, while psychopathic personality traits likely influence malingering to some degree, researchers have increasingly begun questioning the persistent belief that psychopathy and malingering are inherently linked. The present study was, therefore, designed to examine the effects of psychopathic personality traits, context and incentives on individuals' beliefs they would malingering in various hypothetical situations and to determine which factor(s) appear most influential in this process. It was believed this information would provide additional empirical support for the adaptational model of malingering. In addition, this study's design served as the first known to attempt to parcel out and examine the separate effects of context and incentive level. Moreover, the present study served as only the second known to use individuals' beliefs that they would malingering as a dependent variable.

The results of this study did not support the primary hypothesis that higher incentive levels would be significantly associated with participants' decisions to engage in malingering more often than lower incentive levels. That is, the incentive variations used in this study did not lead participants to believe they would be significantly more likely to mangle in the high incentive level conditions than in the low incentive level conditions. As would be expected given this finding, differences in incentive level also did not lead participants to feel they would try very hard to mislead evaluators in the hypothetical situations. One possible explanation for this result is that incentive level simply does not impact malingering to any significant degree, while other variables (i.e., context, psychopathic personality traits) play a key role. However, this explanation seems unlikely for a few reasons. For instance, although the effects of the incentive levels did not achieve statistical significance, a clear trend was observed in that participants' average ratings were all greater in the high incentive level conditions. In addition, previous studies have consistently shown the frequency and presentation of malingering to vary along with changes in incentive level in a variety of settings. It is noteworthy that past research has often examined incentive level variations within the same context, thus controlling for this interaction. In light of such information, it seems likely that the lack of complete randomization in the current study did not allow for the effects of incentive level variations to be clearly elucidated. Furthermore, some results suggest that this study would have benefitted from the use of more salient vignettes. For instance, the high incentive level conditions did not lead participants to believe they had more to gain from malingering significantly more often than the low incentive level conditions. The ramifications of these and other limitations will be addressed later in more detail.

It was also hypothesized that context would not significantly impact participants' decisions to malingering, as incentive level was considered to be the primary influence. On the contrary, the results of this study found that the context of the various hypothetical situations significantly impacted how likely participants felt they would be to malingering. More specifically, participants believed they were significantly more likely to malingering in the criminal justice setting relative to the medical and military settings, respectively. Similarly, participants also felt they would put more effort into misleading evaluators in the criminal justice setting, as compared with the medical and military settings, respectively.

The impact of context found in this study suggests that context may play a more significant role in cases of malingering than previously thought. Although previous research has failed to tease apart and effectively examine the separate effects of context and incentives, studies have generally concluded that context does influence self-presentation and malingering to a degree. Furthermore, although Rogers (1990b) suggested that the nature of the situation, rather than the setting, is the more salient factor, his discussion of the concept of "adversarial" suggested that the involuntary/antagonistic nature of a situation is determined both by the immediate context and the associated incentives. It therefore seems possible that the present study's design, which is the first known attempt to clearly define and experimentally manipulate both context and incentive level, allowed for the impact of context to be more clearly elucidated. Support for this contention is provided by the fact that context variations in the present study led participants to believe they had more to gain from malingering in the criminal justice and medical settings compared with the military setting. That is, participants were

significantly more motivated to avoid incarceration or to obtain financial compensation than they were to avoid military combat. Although participants felt they were better able to imagine themselves in the medical scenarios, compared with the military and criminal justice scenarios, respectively, it seems that participants may have more easily identified with situations involving substance use, the legal system, physical injury and financial compensation. As noted above, 20 participants indicated they had been in a situation similar to the criminal justice context, while 29 had been in a situation similar to the medical context. Comparably, only 16 participants had been in a comparable military situation. It was also interesting that a few students were compelled to write comments both in support and in opposition to the current U.S. military involvement in the Middle East. This suggests that the patriotism of a number of students may have been reflected in their responses, whereas for others, differing political viewpoints may have made it more difficult to identify with the situation. However, given the lack of an empirical foundation for these thoughts, they are, at best, purely conjecture.

Although no specific hypothesis regarding the relationship between context and incentives was formulated, no interaction effect for context and incentives was found in terms of participants' self-reported likelihood of malingering, the effort they felt they would put into malingering, or the perceived benefit of malingering in the situation presented. Given the aforementioned findings regarding the individual effects of these variables, this result is not surprising. However, consistent with findings previously discussed in this section, average ratings for each of the primary vignette items were highest in the criminal justice setting, followed by the medical and military settings, regardless of number of high incentive level conditions presented (i.e., 0, 1, 2 or 3).

The results of this study supported the hypothesis that PPI scores would be significantly associated with participants' decisions to engage in malingering. That is, the more psychopathic personality traits a participant endorsed, the more likely they would be to malingering in the situation presented. This hypothesis was driven primarily by the acknowledgement that, given its nature, this personality structure likely exerts at least some influence on malingering, a notion that has been supported by previous research. Consistent with this, Edens et al. (2000) demonstrated that PPI scores were predictive of an increased willingness to malingering across a variety of forensic settings. In the present study, psychopathic traits were also predictive of how hard participants felt they would try to fake out evaluators and how beneficial participants felt malingering would be in the situation presented. As psychopathy is characterized by manipulation, deception, and related behaviors, these findings were also expected.

The primary contention of the present study was that despite the relationship between psychopathic personality traits and willingness to malingering, variations in incentive level would better explain findings. Unfortunately, the results of this study did not support the final hypothesis that incentives would account for more of the variance in participants' decisions to malingering than would PPI scores. In fact, incentive level, as measured in this study, explained only a negligible amount beyond that explained by psychopathic personality traits, as measured by the PPI. Given that no main effect for incentive level was produced, it was not expected that incentive level variations would explain results beyond that which was accounted for by psychopathic personality features.

Implications of the Study

The results of this study suggest that the context of a situation may impact cases of malingering more significantly than previously thought. Along with numerous other studies, the current investigation points to context as exerting a noteworthy influence on malingering. Furthermore, this was the first known study to examine the effects of context on malingering in this way. As such, the finding of a significant effect for context suggests the existence of a relationship that should be taken into account for a couple of reasons. For instance, explanatory models of malingering are well-informed by research demonstrating that factors other than personality traits impact rates and presentations of malingering. Although the present study provided support for the impact of psychopathic personality traits, this variable accounted for only 10% of the variance in rated likelihood of malingering. Furthermore, this study also provided support for the influence of situational variables. Since explanatory models guide classification, evaluation, treatment, and research, all of which ultimately impact the development of detection measures and strategies, the current results ultimately inform these aspects of the malingering literature to some degree.

In addition to providing further empirical validation of the PPI in a non-correctional sample, the results of this study also replicate the findings of the previous research using the PPI. Consistent with Edens et al. (2000), this study demonstrated that psychopathic personality features are associated with an increased willingness to malingering in various situations. Previous studies have also found PPI scores to be associated with more positive attitudes toward malingering in involuntary/antagonistic situations (Poythress et al., 2001). As suggested by previous authors (Edens et al., 2000;

Poythress et al., 2001), these findings support the contention that psychopathic personality traits are not necessarily predictive of an increased likelihood of malingering. Rather, such traits may be specifically associated with attitudes conducive to malingering. This explanation seems likely for two primary reasons. For instance, the literature on malingering does not support the position that psychopathic individuals malingering more frequently, or are more successful malingerers, than non-psychopaths (Clark, 1997; Edens et al., 2000; Poythress et al., 2001; Rogers, 1990a, 1990b). Furthermore, research continues to suggest that situational variables, such as context and incentives, influence malingering to a significant degree. Generally speaking, the results of the current study, along with previous research, do not support the position of the current, criminological model of malingering, which considers psychopathic or otherwise antisocial manifestations (i.e., APD) to be a primary risk factor for malingering.

Limitations of the Study

One limitation of the current study is that of the effects of both context and incentive level varying within participant. As such, alternative approaches to statistical analysis were utilized, and the power of these analyses was likely compromised. Similarly, the vignettes used in this study may not have been salient enough to impact participants' responses to any significant degree. The possibility that differences in high and low level incentive conditions simply were not enough to create adversarial situations in this population seems likely, as participants generally did not feel they could benefit from malingering in the scenarios presented. However, another possible limitation involving the operational definitions of key variables could have contributed to this finding. As previously mentioned, the present study used the term context to refer to the

setting of the vignettes (i.e., forensic, medical or military), while the term incentive was used to refer to the potential outcomes that would motivate a given behavior. While seemingly valid, defining these variables in this way represented a new direction in the malingering research that required some level of subjectivity. It is, therefore, possible that these definitions were inadequate, which would hinder efforts to create effective, salient vignettes.

The use of a college student sample was not, in and of itself, considered a limitation of the present study. As previously mentioned, a significant limitation of the existing research on psychopathy is that numerous studies have been conducted in criminal forensic settings. Such skewed sampling is considered to have led to an increased emphasis on psychopathic personality traits as predictors of malingering. Furthermore, some authors have suggested relying too heavily on these populations prevents the examination of more “successful” psychopaths who avoid significant legal difficulties (Edens et al., 2000, 2001). However, the use of a college student sample may be considered a weakness in that it limits generalizability of findings to samples where malingering might be more prevalent. For instance, college student samples likely differ from general community samples in fundamental ways that would impact both their ability to imagine themselves in the hypothetical situations depicted (e.g., lack of exposure to legal difficulties) and willingness to engage in malingering (e.g., intellectual abilities).

A final limitation of the present study is that, although steps were taken to improve the validity of this design (i.e., piloting, inclusion of a manipulation check), weaknesses of simulation designs have been noted. Most notably, such designs have been

criticized for their inability to approximate real-world circumstances (Rogers, 1997). This weakness is of significant importance in the present study, as the hypothetical situations presented to participants likely did not elicit the level of motivation that would be observed in reality, thus limiting the ability of this endeavor to produce significant results.

Future Directions

As was previously noted, additional research examining the effects of situational variables on decisions to malingering is needed. It is, therefore, suggested that future investigations continue to effectively separate and examine the effects of variables such as context and incentive level. The present study is informative in that it highlights key considerations to be made in such an endeavor. In order to avoid the limitations encountered by previous studies, it is important that researchers begin by conceptualizing context and incentives as separate and distinct variables that exert an influence on malingering. Doing so will facilitate the operational definition of these variables and creating paradigms in which to evaluate their individual effects. Although the definitions for context and incentives used in the present study were cited as potentially inadequate, it seems just as likely that the problem lie not with the definitions but with the incentive levels used. Participants in this study were asked how successful they felt they were in imagining themselves in the hypothetical situations. However, assessing how attractive or meaningful they felt the incentives were would have helped to further explain results. Specifically, a better understanding of what variables more strongly motivate a given population would allow future researchers to more effectively create adversarial circumstances. Similarly, research investigating the effects of multiple incentive levels

could determine the threshold at which someone would decide to engage in malingering. As previously noted, the element of perceived benefit is essential in Rogers' (1990a, 1990b) adaptational model of malingering, as it leads individuals to consider malingering to be a viable option. In order to create such an atmosphere for participants, researchers must work to ensure that the particular incentives used, in addition to the differences between higher and lower level incentive conditions, are enough to create adversarial situations.

Allowing both context and incentive level to vary within participant can be avoided using a few approaches. For instance, the present study could have avoided this limitation by simply having each participant respond to both high and low incentive level vignettes in each context, although this would require a great deal of time and a large number of participants. A scaled-down version of this study might involve the use of only two contexts, with participants responding to both high and low incentive level vignettes in each. Future research could also design studies involving context as a within-subjects variable and incentive level as a between-subjects variable, or vice versa. In order to address the issue of generalizability, researchers are simply encouraged to conduct similar studies in a variety of settings, though they are encouraged to avoid incarcerated populations for the reasons previously discussed.

As has been previously argued, the current conceptualization for malingering embraced by the more recent editions of the DSM is inadequate in that it does not consider the full impact of situational variables. Research has clearly demonstrated that factors such as context and incentive levels impact both the frequency and presentation of malingering (Rogers, 1990a, 1990b, 1997). Although the current study did not reveal an

effect for incentives, results suggest that context may play a more significant role than previously thought. In light of additional findings that psychopathic personality traits are associated with an increased willingness to malingering, it becomes increasingly important to investigate how situational variables may interact with such attitudinal variables.

Simply put, understanding personality manifestations such as psychopathy only partly informs our understanding of malingering, as the nature of the situations individuals find themselves in guides their decision-making and, therefore, their behavior.

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APPENDIXES

APPENDIX A

DSM-IV-TR Criteria for V65.2 Malingering

The essential feature of Malingering is the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs. Under some circumstances, Malingering may represent adaptive behavior—for example, feigning mental illness while a captive of the enemy during wartime.

Malingering should be strongly suspected if any combination of the following is noted:

1. Medicolegal context of presentation (e.g., the person is referred by an attorney to the clinician for examination)
2. Marked discrepancy between the person's claimed stress or disability and the objective findings
3. Lack of cooperation during the diagnostic evaluation and in complying with the prescribed treatment regimen
4. The presence of Antisocial Personality Disorder

Malingering differs from Factitious Disorder in that the motivation for the symptom production in Malingering is an external incentive, whereas in Factitious Disorder external incentives are absent. Evidence of an intrapsychic need to maintain the sick role suggests Factitious Disorder. Malingering is differentiated from Conversion Disorder and other Somatoform Disorders by the intentional production of symptoms and by the

obvious, external incentives associated with it. In Malingering (in contrast to Conversion Disorder), symptoms relief is not often obtained by suggestion or hypnosis. (APA, 2000).

APPENDIX B

Case Vignettes

Criminal Justice Setting – High Incentives

The state of Indiana has recently introduced a “three strikes” law as a way of cracking down on marijuana use. According to this law, anyone who is found guilty of a third drug crime will be punished to the fullest extent of the law. Specifically, the law states that when a person is convicted for the third time on a drug charge, he/she will receive a mandatory sentence of 25 years in a state prison facility. Imagine that you have recently been arrested for possession of marijuana and are currently awaiting trial. This is your third drug crime. As part of the trial process, you will be evaluated by a court psychologist. If you are able to convince the psychologist that you suffer from a serious psychological problem, such as significant depression or anxiety, and were using marijuana to deal with this psychological problem, you will receive a much lighter sentence. In fact, you will only be required to undergo one year of treatment at an inpatient drug treatment facility. This means that you would not have to go to prison, but you would have to live at the drug treatment facility for an entire year.

Criminal Justice Setting – Low Incentives

The state of Indiana has recently introduced a “three strikes” law as a way of cracking down on marijuana use. According to this law, anyone who is found guilty of a third drug crime will be punished to the fullest extent of the law. Specifically, the law states that when a person is convicted for the third time on a drug charge, he/she will receive a mandatory sentence of six months in the county jail. Imagine that you have recently been

arrested for possession of marijuana and are currently awaiting trial. This is your third drug crime. As part of the trial process, you will be evaluated by a court psychologist. If you are able to convince the psychologist that you suffer from a serious psychological problem, such as significant depression or anxiety, and were using marijuana to deal with this psychological problem, you will receive a much lighter sentence. In fact, you will only be required to undergo outpatient drug treatment once a week for six months. This means that you would not have to go to jail and could live at

Military Setting – High Incentives

The United States government recently restarted the draft as a way of recruiting individuals for military service. Imagine that you received a letter notifying you that your name had been selected and that you are required to report to the local recruiter's office in order to complete paperwork and undergo a physical evaluation. You have become aware that if you are found to be completely healthy, you will immediately be placed on active duty and will be sent directly to Iraq. However, if you are able to convince the professionals who are evaluating you that you suffer from a significant medical or psychological problem (such as serious depression or anxiety), you will automatically be excused from any form of military service.

Military Setting – Low Incentives

The United States government recently restarted the draft as a way of recruiting individuals for military service. Imagine that you received a letter notifying you that your name had been selected and that you are required to report to the local recruiter's office in order to complete paperwork and undergo a physical evaluation. Because so many soldiers are currently in combat in Iraq, there is no need for additional soldiers overseas.

However, there is a shortage of military reserves in the U.S. As a result of this shortage, you have been informed that you will be given a low-stress military desk job in the U.S. if you are found to be completely healthy. However, if you are able to convince the professionals who are evaluating you that you suffer from a significant medical or psychological problem (such as serious depression or anxiety), you will automatically be excused from any form of military service.

Medical Setting – High Incentives

Imagine that while out running errands one day, you are involved in a motor vehicle accident in which a semi truck rear ends your vehicle. As a result of the accident, you have spent the last six months struggling with severe neck and back pain and have been undergoing various treatments. Throughout this time you have been unable to work. Over the course of the past few weeks, you have noticed some improvement in your condition and are better able to get around. In fact, you are beginning to think that you might soon be able to return to work and school. However, you have recently been contacted by a lawyer who has informed you that you might be able to sue the trucking company and win some money. Specifically, if your doctor found that your injuries were still severe, making you unable to work or attend school, the trucking company would have to pay for your medical and legal fees and would have to pay you an additional sum of \$500,000 for pain and suffering.

Medical Setting – Low Incentives

Imagine that while out running errands one day, you are involved in a motor vehicle accident in which a semi truck rear ends your vehicle. As a result of the accident, you have spent the last six months struggling with severe neck and back pain and have been

undergoing various treatments. Throughout this time you have been unable to work. Over the course of the past few weeks, you have noticed some improvement in your condition and are better able to get around. In fact, you are beginning to think that you might soon be able to return to work and school. However, you have recently been contacted by a lawyer who has informed you that you might be able to sue the trucking company and win some money. Specifically, if your doctor found that your injuries were still severe, making you unable to work or attend school, the trucking company would have to pay for your medical and legal fees and would have to pay you an additional sum of \$2,000 for pain and suffering.

APPENDIX C

Vignette Questionnaire

Instructions: For questions that ask you to rate your answer on a scale from 1-7, please circle the one number that best fits. For all other questions, please either circle or fill in your response.

1. How likely would you be to fake some sort of difficulty, such as a cognitive impairment (for example, poor memory or low intelligence), physical impairment (for example, severe low back pain), or psychological impairment (for example, severe depression or anxiety), in this situation?

1.....2.....3.....4.....5.....6.....7
 Not at all likely Moderately likely Extremely likely

2. How hard would you want to try and fake out those people who would be evaluating you?

1.....2.....3.....4.....5.....6.....7
 Not hard at all Moderately hard Extremely hard

3. How successful do you feel you were in imagining yourself in this situation?

1.....2.....3.....4.....5.....6.....7
 Not at all successful Moderately successful Very successful

4. To what extent did you feel you could benefit from faking out the people who were evaluating you?

1.....2.....3.....4.....5.....6.....7
 No benefit Moderate benefit Significant benefit

5. Have you ever been in a situation(s) that was similar to this one? YES NO

a. If you answered yes, did you respond honestly in that situation? YES NO

6. Have you ever been in a situation(s) in which you could have benefited significantly from pretending to be less intelligent or from faking or exaggerating some mental or physical illness? YES NO

a. If you answered yes, did you respond honestly in that situation? YES NO

7. Please circle or provide your:

a. Gender: Male Female

b. Age: _____

c. Ethnicity: Caucasian African American Hispanic Asian Other

d. Year in college: Freshman Sophomore Junior Senior

APPENDIX D

Psychopathic Personality Inventory (PPI)

Personality Styles Inventory

This test measures differences in personality characteristics among people --- that is, how people differ from each other in their personality styles. Beginning on this page, read each item carefully, and decide to what extent it is false or true as applied to you. Then mark your answer in the space provided to the left of each item using the scale provided below.

1) False 2) Mostly False 3) Mostly True 4) True

Even if you feel that an item is neither false nor true as applied to you, or if you are unsure about what response to make, try to make some response in every case. If you cannot make up your mind about the item, select the choice that is closest to your opinion about whether it is false or true as applied to you. Here's a sample item:

_____ I enjoy going to movies.

If it is true that you enjoy going to movies, place a 4 on the line to the left of the item, as shown below.

 4 I enjoy going to movies.

If it is mostly false that you enjoy going to movies, place a 2 on the line to the left of the item, and so on. Try to be as honest as you can, and be sure to give your own opinion about whether each item is false or true as applied to you.

_____ 1. With one smile, I can often make someone I've just met interested in getting to know me better.

- _____ 2. I like my life to be unpredictable, even a little surprising.
- _____ 3. Members of the opposite sex find me “sexy” and appealing.
- _____ 4. I am very careful and cautious when doing work involving detail.
- _____ 5. Physically dangerous activities, such as sky-diving or climbing a top high places, frighten me more than they do most other people.
- _____ 6. I tend to have a short temper when I am under stress.
- _____ 7. Even when others are upset with me, I can usually win them over with my charm.
- _____ 8. My table manners are not always perfect.
- _____ 9. If I’m at a dull party or social gathering, I like to stir things up.
- _____ 10. I weigh the pros and cons of major decisions carefully before making them.
- _____ 11. Being rich is much less important to me than enjoying the work I do.
- _____ 12. I’ve always considered myself to be something of a rebel.
- _____ 13. I sometimes worry about whether I might have accidentally hurt someone’s feelings.
- _____ 14. I find it difficult to make small talk with people I do not know well.
- _____ 15. I think a fair amount about my long-term career goals.
- _____ 16. I would not mind wearing my hair in a “mohawk.”
- _____ 17. I occasionally forget my name.
- _____ 18. I rarely find myself being the center of attention in social situations.
- _____ 19. It might be fun to belong to a group of “bikers” (motorcyclists) who travel around the country and raise some hell.

- _____ 20. I tell many “white lies.”
- _____ 21. I often hold on to old objects or letters just for their sentimental value.
- _____ 22. I am a good conversationalist.
- _____ 23. A lot of people in my life have tried to stab me in the back.
- _____ 24. I am so moved by certain experiences (e.g., watching a beautiful sunset, Listening to a favorite piece of music) that I feel emotions that are beyond words.
- _____ 25. I often find myself resenting people who give me orders.
- _____ 26. I would find the job of movie stunt person exciting.
- _____ 27. I have always been extremely courageous in facing difficult situations.
- _____ 28. I hate having to tell people bad news.
- _____ 29. I think that it should be against the law to seriously injure another person intentionally.
- _____ 30. I would be more successful in life had I not received so many bad breaks.
- _____ 31. It bothers me (or it would bother me) quite a bit to speak in front of a large group of strangers.
- _____ 32. When I am faced with a decision involving moral matters, I often ask myself, “Am I doing the right thing?”
- _____ 33. From time to time I really “blow up” at other people.
- _____ 34. Many people think of me as a daredevil.
- _____ 35. It takes me a long time to get over embarrassing or humiliating experiences.
- _____ 36. I usually feel that people give me the credit I deserve.

- _____ 37. I've never really cared much about society's so-called "values of right and wrong."
- _____ 38. If someone mistreats me, I'd rather try to forgive him or her than get even.
- _____ 39. It would bother me to cheat on an examination or assignment even if no one got hurt in the process.
- _____ 40. I become deeply upset when I see photographs of starving people in Africa.
- _____ 41. I rarely monopolize conversations.
- _____ 42. Making a parachute jump would really frighten me.
- _____ 43. At times I have been envious of someone.
- _____ 44. I become very angry if I do not receive special favors or privileges I feel I deserve.
- _____ 45. I often find myself worrying when a friend is having serious personal problems.
- _____ 46. I pride myself on being offbeat and unconventional.
- _____ 47. Keeping in touch with old friends is very important to me.
- _____ 48. I usually strive to be the best at whatever I do.
- _____ 49. I almost always feel very sure of myself when I'm around other people.
- _____ 50. I look down at the ground whenever I hear an airplane flying above my head.
- _____ 51. I could make an effective "con artist" if the situation required it.
- _____ 52. I wouldn't mind spending my life in a commune and writing poetry.

- _____ 53. I have had “crushes” on people that were so intense that they were painful.
- _____ 54. I like to stand out in a crowd.
- _____ 55. I’m not intimidated by anyone.
- _____ 56. Before I say something, I first like to think about it for a while.
- _____ 57. I would enjoy hitch-hiking my way across the United States with no prearranged plans.
- _____ 58. I am a guilt-prone person.
- _____ 59. I bet that it would be fun to pilot a small airplane alone.
- _____ 60. When I want to, I can usually put fears and worries out of my mind.
- _____ 61. Never in my whole life have I wished for anything that I was not entitled to.
- _____ 62. I generally prefer to act first and think later.
- _____ 63. I am easily flustered in pressured situations.
- _____ 64. I often make the same errors in judgments over and over again.
- _____ 65. I always look out for my own interests before worrying about those of the other guy.
- _____ 66. I smile at a funny joke at least once in a while.
- _____ 67. People have often criticized me unjustly (unfairly).
- _____ 68. I almost always promptly return items that I have borrowed from others.
- _____ 69. I sometimes have difficulty standing up for my rights in social situations.
- _____ 70. If I want to, I can influence other people without their realizing they are Being manipulated.

- _____ 71. My opinions are always completely reasonable.
- _____ 72. I become embarrassed more easily than most people.
- _____ 73. When I'm in a frightening situation, I can "turn off" my fear almost at will.
- _____ 74. It bothers me greatly when I see someone crying.
- _____ 75. Frankly, I believe that I am more important than most people.
- _____ 76. I frequently have disturbing thoughts that become so intense and overpowering that I think I can hear claps of thunder or crashes of cymbals inside my head.
- _____ 77. If I do something that causes me trouble, I'm sure to avoid doing it again.
- _____ 78. I often place my friends' needs above my own.
- _____ 79. I like having my vacations carefully planned out.
- _____ 80. People whom I have trusted have often ended up "double-crossing" me.
- _____ 81. I often become deeply attached to people I like.
- _____ 82. I've been the victim of a lot of back luck in my life.
- _____ 83. I have at times eaten too much.
- _____ 84. I sometimes question authority figures "just for the hell of it."
- _____ 85. When my life becomes boring, I like to take some chances to make things interesting.
- _____ 86. I tend to be "thin-skinned" and overly sensitive to criticism.
- _____ 87. I've quickly learned from my major mistakes in life.
- _____ 88. When someone is hurt by something I say or do, I usually consider that to be their problem.

- _____ 89. I like to dress differently from other people.
- _____ 90. If I really wanted to, I could convince most people of just about anything.
- _____ 91. I get restless and dissatisfied if my life becomes too routine.
- _____ 92. I generally feel that life has treated me fairly.
- _____ 93. Ending a friendship is (or would be) very painful for me.
- _____ 94. When I am under stress, I often see large, red, rectangular shapes moving
In front of my eyes.
- _____ 95. I often do favors for people even when I know that I will probably never
see them again.
- _____ 96. I have sometimes “stood up” a date or friend because something that
sounded like more fun came up.
- _____ 97. I haven’t thought much about what I want to do with my life.
- _____ 98. Looking down from a high place gives me “the jitters.”
- _____ 99. I feel that few people in my life have taken advantage of me.
- _____ 100. I can’t imagine being sexually involved with more than one person at the
same time.
- _____ 101. I’m never concerned about whether I’m following the “rules” in social
situations; I just make my own rules.
- _____ 102. I find it easy to go up to someone I’ve never met and introduce myself.
- _____ 103. I often feel very nostalgic when I think back to peaceful moments in my
childhood.
- _____ 104. When I go to a restaurant, I carefully look over the menu before deciding
what to order.

- _____ 105. Some people seem to have gone out of their way to make life difficult for me.
- _____ 106. I have always been completely fair to others.
- _____ 107. I get a kick out of startling or scaring other people.
- _____ 108. I generally try to pay attention when someone important speaks to me directly.
- _____ 109. I feel very bad about myself after telling a lie.
- _____ 110. I enjoy watching violent scenes in movies.
- _____ 111. I would not enjoy being a race-car driver.
- _____ 112. I am very careful about my manners when other people are around.
- _____ 113. I feel that very few people have ever understood me.
- _____ 114. I'm hardly ever the "life of the party."
- _____ 115. I have occasionally felt discouraged about something.
- _____ 116. I agree with the motto, "If you are bored with life, risk it."
- _____ 117. I am a squeamish person.
- _____ 118. I enjoy (or I would enjoy) participating in sports involving a lot of Physical contact (e.g., football, wrestling).
- _____ 119. I do not enjoy loud, wild parties and get-togethers.
- _____ 120. I often push myself to my limits in my work.
- _____ 121. I am easily "rattled" at critical moments.
- _____ 122. In school or at work, I sometimes try to "stretch" the rules a little bit just to see how much I can get away with.
- _____ 123. On occasion, I've had to restrain myself from punching someone.

- _____ 124. I wouldn't mind belonging to a group of people who "drift" from city to city, with no permanent home.
- _____ 125. I have at times been angry with someone.
- _____ 126. If I were growing up during the 1960's, I probably would have been a "hippie" (or, I was a "hippie" during the 1960s).
- _____ 127. When a friend says hello to me, I generally either wave or say something back.
- 1) False 2) Mostly False 3) Mostly True 4) True
- _____ 128. While watching a sporting event on TV, I sometimes wince when I see an athlete get badly injured.
- _____ 129. I'm good at flattering important people when it's useful to do so.
- _____ 130. I sometimes become deeply angry when I hear about some of the injustices going on in the world.
- _____ 131. I'm not very good at talking people into doing favors for me.
- _____ 132. Seeing a poor or homeless person walking the streets at night would really break my heart.
- _____ 133. When someone tells me what to do, I often feel like doing exactly the opposite just to spite them.
- _____ 134. I always tell the entire truth.
- _____ 135. I prefer rude, but exciting people to nice, but boring people.
- _____ 136. I can remain calm in situations that would make many other people panic.
- _____ 137. I usually enjoy seeing someone I don't like get into trouble.

- _____ 138. When I'm in a group of people who do something wrong, somehow it seems that I'm usually the one who ends up getting blamed.
- _____ 139. People are almost always impressed with me after they first meet me.
- _____ 140. I like to (or would like to) wear expensive, "showy" clothing.
- _____ 141. In the past, people who were supposed to be my "friends" ended up getting me in trouble.
- _____ 142. I might enjoy flying across the Atlantic in a hot-air balloon.
- _____ 143. I don't take advantage of other people even when it's clearly to my benefit.
- _____ 144. I'm the kind of person who gets "stressed out" pretty easily.
- _____ 145. Sometimes I'm a bit lazy.
- _____ 146. I sometimes like to "thumb my nose" at established traditions.
- _____ 147. During the day, I generally see the world in color rather than in black-and-white.
- _____ 148. When I am doing something important (e.g., taking a test, doing my taxes) I usually check it over at least once or twice to make sure it is correct.
- _____ 149. When I'm among a group of people, I rarely end up being the leader.
- _____ 150. To be perfectly honest, I usually try not to help people unless I think there's some way that they can help me later.
- _____ 151. Many people probably think of my political beliefs as "radical."
- _____ 152. I sometimes lie just to see if I can get someone to believe me.

- _____ 153. I have to admit that I'm a bit of a materialist.
- _____ 154. I think that it might almost be exciting to be a passenger on a plane that appeared certain to crash, yet somehow managed to land safely.
- _____ 155. In social situations, I sometimes act the same way everyone else does because I don't want to appear too different.
- _____ 156. Never in my whole life have I taken advantage of anyone.
- _____ 157. I can hold up my end of a conversation even if the topic is something I know almost nothing about.
- _____ 158. I often tell people only the part of the truth they want to hear.
- _____ 159. When I'm with a group of people who are having a serious conversation, I occasionally like to say something wild or outrageous just to be noticed.
- _____ 160. I tend to get crabby and irritable when I have too many things to do.
- _____ 161. I'm sure that some people would be pleased to see me fail in life.
- _____ 162. I frequently find that the way that others react to my behavior is very different from what I had expected.
- _____ 163. Some people probably think of me as a "hopeless romantic."
- _____ 164. When a task gets too difficult, I don't mind dropping it and moving on to something else.
- _____ 165. I often get blamed for things that aren't my fault.
- _____ 166. I often lose my patience with people to whom I have to keep explaining things.
- _____ 167. Some people have made up stories about me to get me in trouble.

- _____ 168. I occasionally have periods of several days or more during which I am uncertain whether I am awake or asleep.
- _____ 169. I sometimes get myself into a state of tension and turmoil as I think of the days events.
- _____ 170. To be honest, how much I like someone depends a lot on how useful that person is to me.
- _____ 171. I have sometimes felt slightly hesitant about helping someone who asked me to.
- _____ 172. I occasionally do something dangerous because someone has dared me to do it.
- _____ 173. I sometimes try to get others to “bend the rules” for me if I can’t change them any other way.
- _____ 174. I am a “freewheeling,” spontaneous person.
- _____ 175. I sometimes become so involved in my daydreams or fantasies that I momentarily forget about everything else.
- _____ 176. Some people have told me that I make too many excuses for myself.
- _____ 177. I am an ambitious person.
- _____ 178. Fitting in and having things in common with other people my age has always been important to me.
- _____ 179. I quickly become very annoyed at people who do not give me what I want.
- _____ 180. I have never felt that I was better than someone else.

- _____ 181. If I were a fire-fighter, I think that I might actually enjoy the excitement of trying to rescue someone from the top floor of a burning building.
- _____ 182. I will sometimes break a promise if it turns out to be inconvenient to keep.
- _____ 183. People who know me well regard me as reliable, dependable, and trustworthy.
- _____ 184. I watch my finances closely.
- _____ 185. I think that I would make a very good actor.
- _____ 186. I often put off doing fun things so that I can finish my work.
- _____ 187. I think that holding the same job for most of my life would be dull.

APPENDIX E

Informed Consent

You are being invited to volunteer to participate in a study concerned with examining decision-making processes that is being conducted by Thomas E. Rea, M.S., and Jennifer Boothby, Ph.D., of the Department of Psychology at Indiana State University.

If you decide to participate in this study, your involvement will take around 45 minutes to 1 hour. Participation will require you to read three different scenarios and complete a brief follow-up questionnaire for each as if you were the individual discussed in the situations. In addition, you will be asked to complete a brief questionnaire about your personality. Risks to participants are expected to be minimal. For instance, this process of self-reflection and decision-making could potentially be uncomfortable and, therefore, somewhat distressing. If you do experience any problems, please alert the examiner so you can be provided with contact information for the Indiana State University Psychology Clinic or Student Health Center. Benefits of participation in this study include contributing to the understanding of what factors significantly affect how people make decisions in particular situations. There are no direct benefits to research participants.

Your participation in this study is entirely voluntary. You can skip items you do not feel comfortable answering and you may withdraw from the study entirely at any time. Your grades or class standing will not be affected in any way if you decide to stop. Do not place your name or any other identifying information on any test materials other than this consent form. All information will be number coded to ensure that your responses are anonymous and cannot be connected to you. Any publication of the results of this study will use group data and no individuals will be identified. All data will be stored in Dr. Boothby's lab within the ISU Department of Psychology and then destroyed after a period of three years.

You will receive extra credit in your respective psychology course for your participation in this study. Should you decide to withdraw from the study prior to completing all test materials, the credit you receive will be prorated.

Please feel free to ask questions as they arise. If you have any additional questions in the future or would like to request a summary of results, please contact the project director, Jennifer Boothby, Ph.D., Department of Psychology, 812-237-8344. This project has been reviewed and approved by the Institutional Review Board (IRB) at Indiana State University. If you have any questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the IRB at 812-237-8217 or at irb@indstate.edu.

I have read the above material and any questions that I have asked have been answered to my satisfaction. I have volunteered to participate based on this information. I am 18 years old or older and have been given a copy of this form to keep.

Participant's Printed Name

Date

Participant's Signature