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CHARACTER AND CRIME: AN EMPIRICAL TEST OF RIESMAN'S INNER AND
OTHER DIRECTEDNESS

A Thesis in
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by
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ABSTRACT

David Riesman's ideal types of character, inner directed and other directed, describe an individual's orientation to others. An inner directed person's conforming behavior and values come from parents while an other directed person's come from peers. The two types are said to conform in different ways; they seem to deviate in different ways as well. Although Riesman focused a great deal on the collective and cultural implications of inner and other directedness, this paper focuses on inner and other directedness as an individual level orientation relating to peer influence, family social bonding, and drug/alcohol use. Using an undergraduate sample of 1106 students from eight general elective introductory courses I examine the relationship between inner and other directedness and illegal substance use. Other directed individuals are more likely to use illegal substances, and to use them more often. Models including a control for age indicate that inner and other directedness may be tied to individual development. Because of relationships among directedness, peer delinquency, and family bonds, inner and other directedness may be useful to incorporate into theories of differential association/social learning and social bonds. Even in the presence of such strong predictors of delinquency, inner and other directedness is still significant and substantive.
# TABLE OF CONTENTS

List of Figures ............................................................................................................. vii
List of Tables ................................................................................................................ viii

Chapter 1  Introduction .............................................................................................. 1

Chapter 2  What is Inner and Other Directedness? .................................................. 4

  IO Captures Orientation to Others ........................................................................ 4
  Distinct from Introversion and Extraversion ......................................................... 5
  Distinct from Social Bonds ..................................................................................... 5

Chapter 3  Literature Review .................................................................................... 9

  IO ............................................................................................................................... 9
  Substance Use .......................................................................................................... 12
    Differential Association/Social Learning ............................................................. 12
    Self Control ............................................................................................................ 14

Hypotheses .................................................................................................................. 16

Chapter 4  Methods .................................................................................................. 20

  Sample ..................................................................................................................... 20
  Measures .................................................................................................................. 21
    IO Scale ................................................................................................................. 21
    Self Control ........................................................................................................... 25
    Family Bond ......................................................................................................... 26
    Peer Delinquency ................................................................................................. 26
    Drug Use ............................................................................................................... 27
    Opportunity .......................................................................................................... 28

Chapter 5  Results ..................................................................................................... 29

  Descriptive Statistics .............................................................................................. 30
  Analyses ................................................................................................................... 31

Chapter 6  Discussion ............................................................................................... 41

  Conclusion .............................................................................................................. 52
    Limitations ........................................................................................................... 55
    Directions for Future Research ........................................................................... 56
    IO Revisited ......................................................................................................... 60

References .................................................................................................................. 61

Appendix A  Survey Instrument ............................................................................... 65
LIST OF FIGURES

Figure 1: The Conceptual Model. .................................................................................. 17

Figure 2: Graph of the Interaction Between IO Scale and Friend Delinquency
          Controlling for the Other Variables at their Mean.................................................. 34

Figure 3: Graph of the Interaction Between IO Scale and Age Controlling for the Other
          Variables at their Mean...................................................................................... 40

Figure 4: Predicted Values of Illegal Frequency of Use for Varying IO and Peer
          Delinquency ........................................................................................................ 42

Figure 5: Predicted Values of Illegal Frequency of Use for Varying IO and Family
          Bonds ................................................................................................................... 43

Figure 6: Predicted Probability of Illegal Drug Use by IO .......................................... 48

Figure 7: Predicted Probability of Tobacco Use by IO............................................... 50
LIST OF TABLES

Table 1: Riesman's Descriptions of Inner and Other Directed Traits. ............................................21

Table 2: Descriptive Statistics. ........................................................................................................29

Table 3: Standardized Tobit Regression Coefficients of IO Scale on Illegal Frequency of Use. ...........................................32

Table 4: Odds Ratios for Logistic Regressions of the Inner and Other Directedness Scale (IO Scale) on Substance (use = 1, nonuse = 0). ...........................................35

Table 5: Odds Ratios for the Logistic Regression of the Inner and Other Directedness Scale (IO Scale) on Alcohol with IO Scale*Age Interaction...........................................39
Chapter 1

Introduction

Family bonds and peer delinquency predict respondent delinquency (Akers 1997; Hirschi 2004; Piquero and Bouffard 2007). However, perhaps not all individuals respond to bonds and peers in the same way. "Character," as Riesman describes, might explain this difference in response to others. David Riesman's conceptions of character, inner directed and other directed, (hereafter called IO or the IO Scale) describe an individual's orientation to others. Inner and other directed individuals respond to others differently partly because of where their conforming behavior and values come from. An inner directed person's conforming behavior and values come from parents while an other directed person's come from peers.

An inner directed person bases conforming behavior on values learned from parents while an other directed person bases such behavior on values from peers. The two types conform in different ways; perhaps they deviate in different ways as well. Internalized, fixed goals learned from elder family members early in life direct inner directed individuals. They wish to be liked by some people some of the time; they are relatively insensitive to the expectations and opinions of others, and have the potential to feel "at home" anywhere. Internalized goals psychically anchor inner directed people within themselves. For other directed people, the need to be liked by others directs their lives. Their need for approval is the primary goal in life; so they follow visible cues from those around them, namely peers, for the appropriate norms to follow. They are capable of brief intimacy with everyone so they are at home "everywhere and nowhere" (Riesman, Glazer and Denney 2001).

Although Riesman focused a great deal on the collective and cultural implications of IO, my project will focus on IO as an individual level orientation relating to peer influence, family
social bonding, and drug/alcohol/tobacco use. I propose that IO is useful to incorporate into
differential association/social learning and social bonding theories in criminology.

“Definitions favorable or unfavorable to violation of the law” is the key causal factor
explaining crime and deviance for differential association/social learning theory. Riesman's
concept of IO applies to the sources from which definitions of conduct come to the individual.
Perhaps definitions from parents and other elder family members are more likely to affect inner
directed individuals than definitions from peers are to affect them. Definitions from peers rather
than family may be more likely to affect other directed individuals. In social bond, the aspects of
attachment, commitment, involvement and belief could incorporate inner and other direction. For
example, inner directed individuals would be more attached to activities involving or benefiting
family members than peers. Perhaps smoking marijuana together or drinking alcohol together is
part of a family bonding experience. Other directed individuals would be more attached to
activities with peers.

I predict that IO's effect on drug use will be mediated by and interact with both peer
delinquency and family bonds. The literature has shown that bonds and peer delinquency are
related to respondent delinquency. If inner directed people are more affected by family and
parents while other directed people are more affected by peers, then there may be at least two
interaction effects. IO might interact with family bonds and peer delinquency. I predict that
family bonds and peer delinquency would be mediators in the relationship between inner and
other directedness and delinquency because directedness is temporally prior to the two variables
and unchanging throughout life.

Perhaps an adolescent who uses marijuana and is other directed will be more likely to
have peers who also use. Association with delinquent peers will be correlated with substance use.
A similar youth who is inner directed may have peers who use or may have no peers who use, but
may smoke marijuana because an elder family member uses or is delinquent in some way.
I test these ideas with survey data from undergraduate students. I use Kassarjian's (1962) unidimensional scale of inner and other directed characteristics (IO Scale) to measure the level of inner or other direction of individuals in this undergraduate sample. I will also measure peer influence, family bonds, self control and opportunity.
Chapter 2

What is Inner and Other Directedness?

IO Captures Orientation to Others

According to Riesman, inner directed individuals live by internalized goals learned early in life. The goals guide them throughout the life course, and funnel options for them. When they stray from their internalized values they feel guilt, but will go back to following the original beliefs and values. They are relatively insensitive to the beliefs and opinions of others around them, although they wish to be liked by some people some of the time. They mostly value goals such as special skills and the accumulation of skills/wealth/“treasure in heaven”/etc.

Rather than relying on values and goals instilled at a young age, other directed individuals can "change their minds" throughout their lives. They follow the goals and values of important others around them at the time rather than allowing goals learned at a young age to make decisions for them. Often choices for the other directed person depend on his or her ability to pay attention to subtle social signals of others. Copying behavior is a way for the other directed person to bond with someone else, and is itself a signal of approval to the other person. Because approval is the primary goal in life, an other directed person feels anxious when he or she fails to follow the norms of others who are important to them ("what will they think of me?").

Others who are not present may also be important to other directed individuals; phantom others are not present, but impact life as much as those who are present (Athens 1994). Athens says that "the phantom other is a hidden source of our emotions that can heighten, for better or worse, our sensitivity to certain life experiences" (Athens 1994). This might include illegal acts and experiences such as drug use. For example, perhaps someone smokes marijuana but does not
have a physically present peer group who does. They could have phantom others that they feel connected with through the internet or magazines like *High Times*, a magazine devoted to marijuana.

**Distinct from Introversion and Extraversion**

IO is distinct from extraversion and introversion. According to Jung, introverts pay attention and are interested in "the inner world of subjectivity" while extraverts are interested in and pay attention to “the outer world of objectivity” (Jung 1971). An introvert is more interested in personal reflection while an extravert prefers talking to others. Jung's two concepts describe *what* people are interested in while Riesman's directedness describes *who* people are interested in. An inner directed person does not necessarily prefer reflection to involvement with the environment, but goals and values come from within and choices are funneled through a rigid set of values. The rigid values could express themselves through either action or reflection. An other directed person could prefer thought to action in a similar way. He or she may express values learned from peers through internal belief or the way he or she speaks, or to whom he or she speaks.

**Distinct from Social Bonds**

Hirschi (1969) focuses on bonds to conventional society in his control theory. Such theories explain that weak bonds to conventional society result in deviant behavior. They assume that if people lack bonds to conventional society, they end up engaging in criminal acts at some point. In a control theory framework, conformity needs to be explained, rather than deviance; the assumption is that people commit deviant acts to satisfy their own wants and needs unless they
have social bonds to restrain them. Social bonds provide constraints on behavior because individuals are attached to one another, are committed to one another and to conventional activity, are involved in each others' lives and in conventional activity, and share beliefs.

The four elements of the social bond: attachment, commitment, involvement and belief explain the investment social bonds provide for an individual. People are attached to one another and care about each others' opinions. Because individuals care about the values and behaviors of others, they will tend to follow such values and behaviors. Commitment is where an individual calculates cost and benefit. An investment in a line of action like building an impressive resume, or earning a diploma would be threatened by delinquent behavior. The fear of losing what one is invested in outweighs the cost of losing it. Involvement relates to time. If one is involved in nondelinquent activities, then he or she will have less time and opportunity to engage in criminal acts. Belief involves the idea of a common set of conventional values. Most can assume that a day of errands, where they will be around other people, will be relatively safe. Most would agree that harming another person deliberately is unacceptable; this would be an example of a common value. The strength of belief in the common value system varies and depends on both other beliefs and the other three elements of the social bond.

Gottfredson and Hirschi's (1990) book outlines self control as a general theory of crime. Like social bond theory, the two authors set out to answer the question, "what prevents people from committing crime?" rather than "why do people commit crime?" The idea of self control suggests that there are individual differences in the extent to which people are restrained from criminal behavior. This contrasts "criminality," which Gottfredson and Hirschi describe as the extent to which people are compelled to deviance. They reject this idea of criminality in favor of self control. They draw the characteristics of low self control from the nature of most criminal acts. They provide immediate gratification, easy gratification of desires, exciting or thrilling experiences, few long-term benefits, little planning, and they often result from self-centered
action. An individual with low self control seeks these and will tend to themselves be impulsive, insensitive, short-sighted, and nonverbal. For a review of the self control literature see Pratt and Cullen (2000) or Piquero and Bouffard (2007).

The theory has suffered some criticism since its debut in 1990. The definition of low self control has been attacked as tautological. Defining self control as what keeps people from committing crime is one and the same to some. Impulsiveness, insensitivity, short-sightedness and self-centeredness together as the concept of self control are too correlated with crime to be distinct from crime.

Often measures of self control contain “analogous behaviors” which are deviant but not criminal acts. Someone with low self control will commit analogous acts such as drinking too much alcohol, engaging in casual sex, or smoking according to Gottfredson and Hirschi (1990). Such measurements are tautological. The best predictor of future criminal behavior is previous behaviour, and that includes analogous acts. Using such measures and calling them indicators of self control poses the problem of tautology, which is not unique to self control, but is still a methodological issue.

Self control always has a positive and significant relationship in previous treatments regardless of its measurement (Piquero and Bouffard 2007). However, Hirschi and Gottfredson (1993) favor behavioral measures over attitudinal because they report that those with low self control will answer survey questions differently than those with higher self control; they make the recommendation that multiple measures are the ideal. Piquero and Bouffard’s (2007) measure overcomes this problem somewhat with the measure of inhibitions, which will be discussed further in another section.

To solve some of the measurement problems with self control and to merge social bond and self control, Hirschi decided to recently redefine the theory. Hirschi redefines self control from the amount of restraint an individual has to "the tendency to consider the full range of
potential costs of a particular act” (2004). Self-control is the inhibitions available to someone at any time. Social bonds are part of the inhibitions, such as caring whether one's parent finds out about illegal substance use. That family bond increases one's self control. Self-control and social bond are synonymous for Hirschi's redefinition, which will now be referred to as just self control.

IO is not self control. While the former consists of inhibitions, the latter can perhaps describe the source of those inhibitions. IO does not describe a tendency to consider the costs of an act; it describes whom an individual is oriented toward. IO might be related to the costs of an act such as whether one is more worried about a parent finding out about delinquency or whether one is worried about peers finding out about it. New self control describes the effect others have on the individual. Others provide inhibitions, but self control does not clearly distinguish among what others are the source of those inhibitions to delinquent behavior. Parents are important, because they are the first “other” with whom one comes into contact. They are the first ones to begin building one's self control, but as one comes into contact with other institutions such as school, friends and teachers become important as well.

Although parents are decisive in the formation of self control according to Gottfredson and Hirschi (1990), the way parents raise children will have to do with IO. Because parents might be the vital component in the development of self control does not mean it is inner directed (oriented toward family or parents). Inner directedness is not only being oriented toward family or parents, because an other directed person can be oriented toward family also. According to Riesman, inner directed parenting involves more discipline and is more likely to involve physical punishment or taking away toys (Riesman, Glazer and Denney 2001). Other directed parenting is more likely to involve people, such as a time out (away from others) or grounding (not allowed to see friends).
Chapter 3

Literature Review

IO

Immediately after its publication, the *Lonely Crowd* was a fairly popular book. It is considered a good read to this day. Todd Gitlin’s foreword in the 2001 edition cites a 1997 study by Herbert J. Gans that says this book is the best-selling book by a sociologist in history with 1.4 million copies sold, mostly paperback editions. Since the 1960s, however, few scholars have considered Riesman’s conceptualizations of individual and social IO to use it as a framework let alone to subject it to empirical testing in recent years. This exploratory project is an attempt at both. Most of the works on IO are from the 1960s, and a few are from after that. The concept of IO as Riesman described is still relevant and useful.

They demonstrate the validity of the IO Scale. These previous studies on IO focus on different issues than this thesis, but they demonstrate the face and content validity of the IO scale. The articles from the 1960’s and 1970’s provide support for the IO scale, and show that it represents a concept. They show that the IO scale has some predictive validity for academic field preference like business or natural science, and for occupational interest.

The IO Scale I use to capture the IO directedness of individuals in the sample is basically the only scale used to do so in the literature on IO, and the literature lacks any studies involving crime or deviant behavior. Scholars tested the IO Scale's validity by its ability to predict the same things about a person that Riesman did. For example, Riesman hypothesized that certain fields have more of an inner or other directed appeal (Riesman, Glazer and Denney 2001). Inner directed people value a product in business while other directed people value a personality. An
example Riesman gives, and that Kassarjian includes in the IO Scale\(^1\) is of an engineer offered a promotion to manager. The promotion will alienate the inner directed worker from the skill which he or she enjoys. Inner directed individuals value skills that would be more described as a craft like engineering, research, writing or acting over a skill that involves other people, like manipulation.

To be a skilled craftsman, the engineer does not need to have the right personality or be a "good fit" for the work environment; however, to be a manager such qualities are essential. The skilled engineer works with things while the manager must be good at manipulating/managing people. It is likely that this is as true now as it was in 1950. The engineer question also demonstrates both face and construct validity. It looks like it measures IO and it demonstrates construct validity. The questions can be generalized to the concept of IO.

Kassarjian (1962) found in a sample of undergraduates that students in natural sciences and the humanities are more inner directed; those in education, business and medicine are more other directed. Work in the natural sciences and humanities involves working with things, ideas, or words rather than with people. Work as an educator, businessman or doctor involves working with/molding/managing/manipulating people. Majors like medicine, business and education are more likely to lead the typical undergraduate to careers working with people, and majors like humanities and life sciences are likely to lead to working with things. But this does not have to be the case, and not all people do what they are interested in, not in college or as a career. It is likely that this is as true now as it was in 1950.

\(^{1}\) If I were trained as an electrical engineer and liked my work very much, but was offered a promotion into an administrative position, I would

A. accept it because it means an advancement in pay which I need quite badly;

B. turn it down because it would no longer give me an opportunity to do the work I like and am trained for, even though I desperately need more money.
In another survey, Kassarjian (1965) found occupational interest, rather than the actual category of one's current occupation to be the most correlated with the IO Scale. This finding was not surprising since Riesman suggested there might be much variation in the proportion of inner directed and other directed people in any occupational categories (Riesman, Glazer and Denney 2001). This could be because not everyone will have a job they enjoy or that caters to their best talents or perhaps an inner directed person would have a different reason for being in the humanities than an other directed person.

People may major in college what suits them, but might not have the type of career that suits them. College major is probably very correlated with occupational interest. But neither one necessarily has to precede a suitable occupational category. Another possibility is that an inner directed person may have different reasons for choosing a certain occupation than an other directed person. For example, a career in academia at a university could appeal to both inner or other directed people. Working with ideas, words, data and the solitary nature of the profession may appeal to the inner directed person. Collaborating, conferences, teaching and service may appeal to the other directed person. Academia might draw both types of people. Perhaps most other occupations could draw either type of person, but for different reasons.

These two studies by Kassarjian and Kassarjian, and then Kassarjian alone (1965; 1962) show that the IO Scale has face validity, and construct validity. Further discussion in the measurement section will demonstrate the content validity of the scale. The questions that capture aspects of IO in the IO Scale, such as the dilemma for the inner directed engineer offered a promotion, allow the scale to be generalized to the construct IO. The IO Scale captures the construct IO. Knowing to whom one is oriented, family/things or friends/others, a researcher can make an educated guess about occupational interest with odds better than chance.
Substance Use

Self control and peer delinquency covary with both general delinquency, and substance use. One source of self control is family bond, because it is an inhibition according to Hirschi (2004). Inner directed individuals should be more affected by family delinquency and family bonds, while other directed individuals should be more affected by peer delinquency. Someone who is inner directed draws from elder family members at an early age the goals and values that they follow throughout life. If family members are delinquent, then the inner directed person may also become delinquent, because they drew their values from those family members. Other directed individuals may personally disagree with using illegal substances, but if friends do it, they may be more likely to do it themselves. Approval is important for the other directed person, particularly approval from friends.

Differential Association/Social Learning

In Akers (1998) review of differential association/social learning theory, he lists many empirical studies that support it. Most of the studies cited include a measure of peer associations, which are strongly related to delinquency. Drug use is strongly related to peer drug use as well. Since other directed individuals are attuned to peer values, peer drug use would influence an other directed person much more than it would influence an inner directed person. An inner directed person would be influenced by family drug use or family bonds because inner directed people learn goals and values from elder family members early in life, and are more oriented toward family bonds.

One of the debates around differential association/social learning involves the "birds of a feather flock together" argument. The issue is important because it is a relevant methodological
issue relevant to this paper because I include peer delinquency in the models. Some argue that people are delinquent prior to having delinquent friends, and so then join other delinquent friends because they are similar to one another. The “birds of a feather” argument hypothesizes that there is a selection effect between the peer delinquency-respondent delinquency relationship. This is an important methodological issue with peer delinquency that Akers addresses.

Differential association/social learning argues that the selection effect is partly the case, but one becomes delinquent also from having delinquent friends. People affect one another's behavior and attitudes. Another part of the problem is that one's perceptions of peer delinquency and values matters as well, "actual behavior and values of peers is important, but in the impact on the youth's deviant or conforming tendencies it may be no more important than his or her perception of peer behavior and values" (Akers 1998). People do not accurately estimate their friends' delinquency, but perceptions of peer delinquency are just as important as actual peer delinquency.

Social learning theory proposes and supports a recursive and nonrecursive model of peer effects. An individual can associate with peers who are deviant in either acts or values, which reinforce previously held delinquent acts or values. Peer delinquency can initiate or augment involvement in deviant behavior or values (see Akers 1998:121-122 for citations and a more thorough review).

According to Akers' review, peer effects are not merely a methodological artifact; they measure more than one's own delinquency. If it were a selection effect, measures of peer delinquency would merely capture one's own delinquency because individuals select into delinquent peer groups because they themselves are delinquent. This is not the case.

Differential association/social learning does take into account the level of family bonds in its idea of the intensity of a relationship (Akers 1998). In the theory, relationships may differ in frequency, duration, priority, and intensity. In other words, how often and how long someone
differentially associates with definitions (which can come from other people) matters. Priority has to do with timing in life. Earlier definitions (attitudes and behaviors) learned matter more than ones learned in more recent time. Intensity relates to emotions that the source of definitions brings about. For example, definitions from an other directed person's most important peer group will have greater intensity than definitions from parents. Definitions from an inner directed person's parents or important elder family members, from whom they learned their goals and values early in life, will have greater intensity than definitions from peers. Definitions will vary in intensity depending on the level of IO.

Self Control

The social bond aspect of Hirschi's new self control partly focuses on this idea of intensity (Hirschi 1969; Hirschi 2004). Social bonds increase the value of one's self control. Self-control focuses on family, which is the connection to intensity. Parents have the strongest influence because they are the primary source of self control, and they can invoke great emotion. For self control to develop, parents must monitor their child's behavior, recognize deviant behavior when it occurs, and deter the behavior, usually by punishment (Gottfredson and Hirschi 1990). Institutions such as school impact behavior and friends do as well; but family is the most important since it provides the basis for self control to develop, and parents are the first people one has contact with in the world.

In the literature on drug use, peer delinquency matters, and social bonds, particularly family bonds matter (Akers 1998; Gottfredson and Hirschi 1990; Hirschi 2004). When both are examined at the same time, scholars find that they both matter. One example of an article that found both effects significant and substantive is Ford's (2005) article using the National Youth Survey. The data has information from 1725 adolescents in wave 1 (1976, ages 11-17). Ford uses
waves 3, 4 and 5 in the analyses. Controlling for peer marijuana use, he found that family bonds were still significant in predicting use.

Differential association and self control theories may find IO useful. The two theories themselves can be synthesized into one theory and can include IO. I reject Hirschi’s assumption that people will engage in criminal acts unless they are restrained by social bond inhibitions and instead adopt the idea that people learn deviance. People learn criminal behavior and attitudes through others to whom they are sufficiently bonded. What I mean by sufficiently bonded is that the degree of priority, frequency, duration, and intensity with such a person is enough to influence behavior.

From self control comes the idea that these social bonds (which vary in priority, frequency, duration, and intensity) inhibit one from committing deviant acts. It is not necessary (assumed here) that the lack of social bonds result in criminal acts as Gottfredson and Hirschi (1990) assume. Although this is not a necessary relationship. Differential association with deviant peers or family is an important part of self control. Having a strong social bond with a deviant parent does not mean that one will be less likely to engage in deviant behavior. It means one will probably be more likely to engage in deviant behavior, and the kind of deviant behavior in which the parent engages. So in my framework, self control inhibits one from committing crime, but it also depends on those with whom one differentially associates.

There is one more element to include in this synthesized theory, and that is IO. Inner and other directedness separates those who are attentive to peer delinquency from those who are influenced more by parent/family delinquency. If an inner directed individual differentially associates with delinquent peers, they are much less likely to be deviant themselves (be influenced by such peers to the point of becoming delinquent) than a similarly situated other directed individual (who would most likely become deviant in the presence of deviant peers). Instead, the inner directed individual would be much more influenced by a deviant parent than
deviant peers. An other directed individual with deviant parents may learn deviant behavior and attitudes from parents, and so would be aware of them, but might not put these learned traits to use unless persuaded by delinquent peers to do so.

Hypotheses

Measures of family bond and peer delinquency give important information about an individual's situation, and they are highly correlated with delinquency, in this case, drug use. However, if IO works through family bonds and peer delinquency to affect respondent delinquency, then it may be an important consideration for theories of delinquent behavior. Since IO develops at a young age according to Riesman, subsequent family bonds and peer delinquency will affect an inner or other directed person's drug use. Since inner directed individuals are more affected by the values of their parents, family bonds may be important for their later substance use. Other directed individuals focus on people in general, mostly their peers. They will be more affected by peer delinquency.
Figure 1: The Conceptual Model

Figure 1 displays the conceptual model for testing the hypotheses. The image does not imply a longitudinal model, or a path model used later, but is intended as a heuristic device to show the conceptual relationships among the main variables. The data will not be treated as longitudinal; IO is assumed to be set at a young age and affect subsequent peer relationships, and family bonds. Other directed individuals will react to the peers they meet with this other directed orientation. They also react to their parents through their other directed orientation. Inner directed individuals will tend to end up being more attached to their families than similar other directed individuals because parents orient them to be psychically anchored within themselves based on the parents' values. Inner directed individuals react to peers with their inner directed orientation, and because they are relatively insensitive to others, peers will have less of an influence on them.²

² The main relationship is between IO and drug use. Controlling for new self control, opportunity, peer delinquency, and family bonds, I predict that other directed individuals will be more likely to use
For example, a student with an extreme inner direction score, average self control, plenty of opportunity, half delinquent peers, parents who do not use, and average family bonds, will be unlikely to use illegal drugs. A student with an extreme other direction score, average self control, plenty of opportunity, half delinquent peers, parents who do not use, and average family bonds, will be likely to use drugs. The two students are the same, except in their IO directedness.

**H1:** Controlling for the other variables in the model, other directed individuals will be more likely to do illegal drugs.

According to Riesman, IO directedness is set basically at birth; parents have their own IO directedness and pass it to their children. Therefore, IO is causally prior to both family bonds and peer delinquency, and IO should work through both to affect drug use. Peer delinquency should absorb most of the other directed person's attention, and family bonds should absorb most of the inner directed person's attention. To be clear, other directed individuals tend to be affected by family bonds to a degree, and inner directed individuals tend to be affected by peers to some extent. But each may be strongly affected enough by peers and family, respectively, that peers and family mediate IO's relationship with drug use. IO will be positively related to family bonds and negatively related to peer delinquency.

**H2:** Family bonds and peer delinquency will mediate the relationship between the IO Scale and delinquency. Most of the link between inner directed individuals and drug use will be illegal drugs. Similar to the examples about work (business, medicine, education, natural sciences, and humanities) dealing and using illegal drugs will have more to do with people than with things. Dealing drugs may be most similar to sales. Sales requires skills in manipulating and managing customers to hopefully purchase what one is selling. Other direction has to do with people, and other directed individuals tend to enjoy hobbies and jobs that deal with people rather than things. Relative to the other directed person, the inner directed person would be at a disadvantage in sales. They are relatively insensitive to the signals of others. For example, an upset customer may encounter an inner directed salesperson who does not take into account the feelings of the customer, and the inner directed salesperson may not frame their speech in a way to mollify the customer's feelings. They may seem too harsh to the customer and it may result in a fight between the two. I like this logic—can you just elaborate more? Inner directed people would be disadvantaged in dealing drugs just as they would be in conventional sales jobs. Inner directed people prefer dealing with things. They may be at a similar disadvantage in dealing and using illegal drugs.
explained by family bonds, while most of the link between other directed individuals and drug use will be explained by peer delinquency.

I predict that intensity will translate into an interaction effect. Who someone differentially associates with matters a great deal when IO is added to the equation. The emotional effects from the source of the relationship, the intensity, matters when IO is taken into account. Family has a greater intensity for the inner directed individual, while peers have a greater intensity for other directed individuals. Depending on the level of the IO Scale, peer delinquency will have a stronger or weaker relationship with illegal drug use. A lower IO Scale score will correspond to a stronger peer delinquency – drug use relationship. Also, family bonds will have a stronger or weaker relationship with illegal drug use depending on the level of the IO Scale. A higher IO Scale score will correspond with a stronger family bond – drug use relationship. For example, an individual with an extreme other direction score will be much more likely to be affected by delinquent peers, and will then use illegal drugs themselves. An individual with an extreme inner direction score will be much more likely to be affected by a high family bond score, then he or she will not use illegal drugs, but if the family used illegal drugs, then a high family bond score would mean illegal drug use for the inner directed individual

**H3:** The IO Scale will interact with family bonds and peer delinquency (two two-way interactions) to affect delinquency. Family bonds will vary with drug use according to the IO Scale. Inner directed individuals will have stronger family bonds than other directed individuals. Peer delinquency will vary with drug use by the IO Scale, and other directed individuals will be more affected by peer delinquency than inner directed individual
Chapter 4

Methods

Sample

The sample comes from 1106 students in 8 general education undergraduate courses. The response rate was about 90%. Although using college students limits this study, recent data using the IO Scale does not exist, and there is no data with the IO Scale and any type of criminal behavior. A more nationally or even state-wide representative sample would be desirable, but the exploratory nature of this study did not necessarily need a large-scale data collection effort to begin to answer the research question posed here. If this relationship holds in the general population, then it may also hold for this sample of undergraduates.

I administered the paper and pencil surveys during regular class times to students who were present on that day. Participants filled out the surveys and returned them the same class period. Each survey had a cover sheet with consent information. I read the consent information out loud as well. Participants could stop at any time and skip any questions that they did not want to answer. Participants implied consent by taking the survey. Surveys did not have name or identifying information on them.
Measures

IO Scale

I am treating IO as a unidimensional scale separated at two extremes of the respondents’ relevant others. For the inner directed person, parents (or elder family members) are the source of goals and values in life. The other directed person has a larger number of others who are the source of their goals and values, which can include parents and family. One article contests the unidimensional issue (Peterson 1964) but subsequent articles have not tested it, and most use the IO Scale.

The IO Scale captures a respondent's expression of inner or other directedness. Kassarjian (1962) used Riesman's description of character from The Lonely Crowd to construct the IO Scale. It attempts to use some of the main differences between the two types of character listed in Table 1 to measure the subject's variation on the IO Scale. These traits described with how they are covered in the IO Scale show the scale’s content validity. The questions cover major aspects of the construct.

<table>
<thead>
<tr>
<th>Table 1 : Riesman’s Descriptions of Inner and Other Directed Traits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inner-Directed</strong></td>
</tr>
<tr>
<td>- Directed by internalized, fixed goals learned from elders early in life</td>
</tr>
<tr>
<td>- Choices are guided by rigid, individualized character</td>
</tr>
<tr>
<td>- Wish to be liked by some people sometimes</td>
</tr>
<tr>
<td>- Emotional sanction is guilt</td>
</tr>
<tr>
<td>- Relatively insensitive to others, so at home anywhere</td>
</tr>
<tr>
<td>- Work and play are distinctly defined and do not mesh</td>
</tr>
<tr>
<td>- Money and skills are most important</td>
</tr>
</tbody>
</table>
One example of a question to capture the first row of Table 1 is number 13, "On the subject of social behavior ... A. a person should set his/her own standards and then live up to them; B. one should be careful to live up to the prevailing standards of the culture one is in." Choice A captures the idea that inner directed individuals follow internalized, fixed goals, and value such commitment to ideals learned at a young age. Choice B is an example of how, in certain situations, an other directed person would be uncomfortable with making a stand on an issue in a group of friends who have not made their opinions known.

Inner directed individuals funnel choices through rigid values and other directed individuals' take cues from important others around them in making choices, Kassarjian asked a few questions to cover this issue. Number 15 is an example, "I respect the person most who ... A. is considerate of others and concerned that they think well of him/her; B. lives up to his/her ideals and principles." Answer A. is the other directed answer and B. is the inner directed answer.

While everyone wants to be liked by at least some people sometimes, other directed individuals make approval a major concern in life. Question 19 asks, "When doing something, I am most concerned with ... A. 'what's in it for me' and how long the benefit will last; B. what impression others get of me for doing it." A. is the inner directed answer, showing how an inner directed person does not always feel the need to be liked, and values personal benefit over approval of others. B. is the other directed answer.

The "emotional sanction" for an inner directed person is guilt. That means they may stray from the goals and values that are set out for them at a young age by elder family members, but guilt brings them back to the initial values. The emotional sanction for the other directed person is anxiety. The other directed person has to take in much information from his or her surroundings to make sure to please the most people by words and actions. The anxiety of making someone
uncomfortable, or disagreeing with someone brings the other directed person back to "play nice" with peers.

Here are two questions from the survey that perhaps try to capture the emotional sanction. Number 22 says, "The main thing a child should be taught is ... A. cooperation (sharing, working in a group, etc.); B. self-discipline (self-control, learning to deal with failure, etc.)." The other directed person must "play well with others" in life, and share toys, space, time with others. Self-discipline is more important to the inner directed individual who would feel guilt from losing any part of it.

A somewhat similar question, number 14, says, "I would consider it more embarrassing ... A. to be caught wasting time on a job for which I get paid; B. losing my temper when a number of people are around whose opinions I care about." Although a hypothetical situation where a person loses self-control, answer B., may seem like the inner directed answer at first, the other directed person would care about what others think of him/her. A. is the inner directed answer, where the person would feel guilty for lacking in self-discipline.

Inner directed individuals are relatively insensitive to the opinions of others, while other directed individuals are very sensitive to others' opinions. None of the questions directly try to capture this idea. The idea is that there is a sizeable difference between treating others the way they wish to be treated because one wants to and doing so because one does not want to receive a negative assessment from them.

Work and play are distinct from one another for the inner directed person, but not for the other directed person. Now that most people have some leisure time, it is becoming more of a problem (Denney 1959). Since the nature of work has changed over time, and the work week has allowed for increasing leisure time, “play” is more difficult to recognize. People have difficulty dealing with unstructured time, “leisure begins to turn up in unexpected times and places where it
is hard to recognize as leisure and, therefore, is hard for individuals and society to deal with in any but improvised, arbitrary and stereotyped ways. Leisure has become a problem to almost all citizens in all social classes. Boredom, which used to bother only aristocrats, has become a common curse" (Denney 1959). There is one question that seems to try to capture this directly, "I feel that ... A. it is difficult to allow myself to rest when there is work that could be done; B. I am never bored when I have time to rest."

The inner directed person is more interested in money and skills while the other directed person is more interested in people. There are a few questions that use this distinction in the IO Scale, "With regard to a job, I would enjoy more ... A. one in which I can show my skill or knowledge; B. one in which I get in contact with many different people." A. is the inner directed answer, and B is the other directed answer. Another question that is similar, but shows that the inner directed person will pick skill over money, while the other directed person will choose money over skill, "If I were trained as an electrical engineer and liked my work very much, but has offered a promotion into an administrative position, I would ... A. accept it because it means an advancement in pay which I need quite badly; B. turn it down because it would no longer give me an opportunity to do the work I like and am trained for, even though I desperately need more money."

I changed some wording of questions in the survey to update them, to make them make more sense to contemporary undergraduates. For example, one question suggested bridge as a social card game, so I exchanged it with spades, which is also social. The IO Scale scores range from -2 to 2. The extreme other direction score is -2, "Strongly Prefer A" for example. "Somewhat Prefer A" would be an example of -1 for an other directed score. The respondents' scores are added up and added to 72 so all scores will be in the positive range of 0 to 144 (there are 36 questions). If someone is closer to 144, meaning they are more inner directed, then they
will be more affected by family bonds. If someone is closer to 0, meaning they are more other directed, then they will be more affected by peer delinquency. The median possible score is 72. In the data, the median score is close to that, about 71.

Cronbach's Alpha for the set of 36 items is 0.64. When the items were factor analyzed, the Kaiser-Meyer-Olkin test was 0.72, indicating that the items will factor well together. Bartlett's test of sphericity was significant, meaning that the items did not form an identity matrix, so the items factor. Principal Components analysis extracted 13 factors, and they were rotated using varimax; however, five factors had only one loading over 0.5. Since the scale has been seen as theoretically and empirically sound, I used it instead of the factors.

**Self Control**

Following Piquero and Bouffard (2007) I measured Hirschi's (2004) new self control. He redefined it to mean, "the tendency to consider the full range of potential costs of a particular act" (Hirschi 2004). It is the inhibitions a person has available to them at any time. Social bond factors are part of the inhibitions, "one question that the potential offender asks is: 'Do I care what X thinks of me?' If the answer is 'yes,' chalk one up for self-control" (Hirschi 2004). Measuring self-control measures social bond in Hirschi's new conception. Piquero and Bouffard measured self control with two scales. They had a sexual coercion vignette only for males (omitted from this study) and a drunk driving vignette. Then the respondent writes a percent likelihood of driving home after they read the scenario. The scale in this survey is out of five possible choices "Surely Wouldn't" "Probably Wouldn't" "Might/Might Not" "Probably Would" "Surely Would" for better reliability, although it does compromise variability. A score of 1 indicates self control.

3 The drunk driving vignette is shown in the survey in Appendix A.
and a score of 5 indicates low self control. If a respondent reports that they "Surely Wouldn't" drive home intoxicated, then they are judged to have self control.

**Family Bond**

Piquero and Bouffard (2007) counted the instrument where respondents write down the consequences of driving home in the drunk driving scenario as part of the self-control measure. They used the salience of these listed items and the number of listed items separately in their measure. I measure family bond by combining this information.

In these data, the family bond scale is weighted by the salience of the item. For example, say a respondent explicitly lists a cost of driving home having to do with family. They list the salience next to it as instructed. With this information, I use an equation to weight the family inhibition by its salience. I assume the difference between saliences listed is the same. The distance between salience 1 and salience 2 is the same as between salience 2 and salience 3 for example.

A family-related inhibition or consequence listed as the number one concern is weighted by 7/7 (which equals 1), number two by 6/7 (which equals about 0.857), three by 5/7, four by 4/7, five by 3/7, six by 2/7, and seven by 1/7.

**Peer Delinquency**

Four questions on the survey capture peer delinquency. They ask "about how many, if any, of your _____ use some type of illegal drug or abuse prescriptions?". The questions address

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4 Another possibility was to have fixed answers for the respondents to circle in the costs question. But not everyone will think of the same costs when in a situation, and seeing costs listed may induce the respondent to think that they may think of the cost listed when they really wouldn't in the situation.
friends, acquaintances, coworkers, and those the respondent volunteers with. The answers include "none" "some" "half" "most" or "all" for each question. If the respondent does not have a job or does not volunteer, they have a place to circle to indicate that they do not. Peer delinquency, or differential peer association for differential association/social learning, is often measured by the proportion of friends involved in delinquent behavior (Akers 1998).

According to Riesman, other directed people follow the expectations and opinions of their peers who are important people surrounding the individual. I include acquaintances and volunteers because these may be people the respondent spends much time with. An other directed respondent would be sensitive to the expectations of these people.

Drug Use

Respondents have a place to circle the illegal substances they have used in the past 30 days. They are asked how many times in the past 30 days they have used those substances. They have the option of circling "never" "none in the past month" and then increments of five times, from 1-5 up to 30+. From here on, this variable will be referred to as Illegal. The illegal drugs available to circle are prescription drugs if used against doctor's orders or using someone else's prescription (after here mentioned as prescription misuse) or if the respondent has used someone else's prescription⁵, marijuana, inhalants, hallucinogens, cocaine, methamphetamines, heroin, and alcohol if under 21 years old.

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⁵ One suggestion for future surveys is to replace the word "abuse" with "misuse" in talking about illegal prescription use.
Opportunity

Five opportunity questions cover the respondent's access to marijuana, hallucinogens, cocaine, methamphetamines, and heroin. Each question asks about places to hide the drug, if the respondent knows someone to obtain the drug from and if they trust the subject enough to trade, sell or share the drug, if the respondent has enough money for it, etc. These are added to form a scale with a possible range of 0 - 33.

The opportunity questions capture the respondent's ability to obtain drugs (they must know someone to buy/trade/share with, and that person must trust them enough to do so). The respondent's knowledge about how much drugs cost, and if he or she has enough money. If someone does not have enough money to buy illegal drugs, then they will have less opportunity to use, because they will not have the drug. Once someone has a drug they need a place to use it and somewhere to hide it when he or she is not using.
Chapter 5

Results

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>19.45</td>
</tr>
<tr>
<td>Percent Male</td>
<td>45.6%</td>
</tr>
<tr>
<td>Percent White</td>
<td>83.7%</td>
</tr>
<tr>
<td>Percent in Academic College</td>
<td></td>
</tr>
<tr>
<td>Agricultural Sciences</td>
<td>2.7%</td>
</tr>
<tr>
<td>Arts and Architecture</td>
<td>2.3%</td>
</tr>
<tr>
<td>Business</td>
<td>16.3%</td>
</tr>
<tr>
<td>Communications</td>
<td>12.4%</td>
</tr>
<tr>
<td>Earth and Mineral Sciences</td>
<td>1.1%</td>
</tr>
<tr>
<td>Education</td>
<td>5.9%</td>
</tr>
<tr>
<td>Engineering</td>
<td>7.4%</td>
</tr>
<tr>
<td>Health and Human Development</td>
<td>14.3%</td>
</tr>
<tr>
<td>Information Sciences and Technology</td>
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</tr>
<tr>
<td>Technology</td>
<td>1.9%</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>18%</td>
</tr>
<tr>
<td>Science</td>
<td>6.3%</td>
</tr>
<tr>
<td>Undecided</td>
<td>11.2%</td>
</tr>
<tr>
<td>Mean IO Scale score</td>
<td>71.20</td>
</tr>
<tr>
<td>Mean Self Control</td>
<td>1.59</td>
</tr>
<tr>
<td>Mean Family Bond</td>
<td>0.15</td>
</tr>
<tr>
<td>Mean Peer Delinquency</td>
<td>4.04</td>
</tr>
<tr>
<td>Percent Marijuana Users</td>
<td>26.2%</td>
</tr>
<tr>
<td>Percent Tobacco Users</td>
<td>28.3%</td>
</tr>
<tr>
<td>Percent Underage Drinkers</td>
<td>56.7%</td>
</tr>
<tr>
<td>Percent whose drug use for the past 30 days is characteristic of most months</td>
<td>75.9%</td>
</tr>
<tr>
<td>Mean Total Opportunity</td>
<td>6.42</td>
</tr>
<tr>
<td>Mean Marijuana Opportunity</td>
<td>3.36</td>
</tr>
<tr>
<td>Mean Hallucinogen Opportunity</td>
<td>1.12</td>
</tr>
<tr>
<td>Mean Cocaine Opportunity</td>
<td></td>
</tr>
<tr>
<td>Mean Methamphetamine Opportunity</td>
<td>0.97</td>
</tr>
<tr>
<td>Mean Heroine Opportunity</td>
<td>0.76</td>
</tr>
</tbody>
</table>
Descriptive Statistics

Table 2 shows the descriptive statistics and number of students included in each in parentheses. There is little variation in the age of the sample; the mean age is 19.45 with a standard deviation of 1.72. About 83% of the sample is white. Many students in this sample majored in subjects from the Business College, such as finance and marketing. The mean score for the IO Scale was 71.20, which means that the average student falls just beneath the exact center of the scale, 72. The mean self control score was 1.59, which supports Gottfredson and Hirschi's (1990) suggestion that most college students will have more self control than not. Their reasoning is that merely the process of applying to a university requires some measure of self control. The average student has a family bond score of 0.15, with a range from 0 to 2.43, meaning the sample in general has weaker family bonds on the scale. The mean peer delinquency score is 4.04 with a range from 0 to 13, which means that at least some of the people around them (coworkers, friends, acquaintances or those they volunteer with) use some sort of illegal substance.

Twenty-six percent of the sample have used marijuana in the last 30 days. Twenty-eight percent have used some form of tobacco (cigarettes, cigars, chew, etc) in the past 30 days. Fifty-seven percent reported drinking while under the age of 21 in the past 30 days. I included a question on the survey to assess whether the past 30 days' use is characteristic of most months. Many students' "past 30 days" overlapped with a break from courses. Students went home and may not have had the opportunities they do throughout the year, or perhaps at home is where they have the opportunities to obtain and to use illegal substances. Seventy-five point nine percent reported that their substance use was characteristic of most months.

The sample reported a mean score of 6.42 (of a total of 38) for their opportunity of obtaining illegal substances (marijuana, hallucinogens, cocaine, methamphetamines and heroin).
That scale is made up of five scales ranging from 0 to 7. For the marijuana opportunity scale, the mean score is 3.36, for hallucinogens is 1.12, for cocaine is 0.97, for methamphetamines 0.25 and heroin is 0.76. The methamphetamine scale is out of out of five\(^6\) possible answers.

**Analyses**

The first analyses were four models of the IO Scale with controls on *Illegal*. To account for the large number of people who have never used any illegal substances, I used tobit regression. This first set of regression models allowed me to explore the data and include the most of my sample. It shows those who have never used, have not used in the past month, and the frequency of those who have used in the past month.

Scores beyond the threshold (here the dependent variable, *Illegal*, is left-censored at 0) are treated as unknown. Some of the predicted values for valid ranges of independent variables are outside of the range of *Illegal*, as shown in Figure 2. Someone with an IO Score of 122 can have a negative predicted value on *Illegal*. Tobit allows the 272 censored observations remain in the sample but the value of *Illegal*=0 and below are treated as unknown\(^7\). Also, there is a substantive difference between never using any of the substances (misusing prescriptions, marijuana, hallucinogens, inhalants, methamphetamines, heroin, or cocaine) and ever using (coded 1-8). Table 3 shows the regression coefficients, standardized, of the IO Scale on *Illegal*. Other directed individuals used illegal substances more often, if at all, in the last 30 days

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\(^6\) due to a survey error, two items were missing ("I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eye, etc." and "I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities)."

\(^7\) The OLS analysis with *Illegal* logged (to make its distribution more normal) had some different results. In the final model both the IO Scale \(^*\) Age interaction were significant. Family bonds and peer delinquency were just shy of significance with p values less than 0.06. IO Scale and Age had larger standardized coefficients than the tobit regression. The coefficient for opportunity was smaller, but still substantive.
controlling for the respondent's level of self control, race, opportunity with illegal drugs, age, 
family bonds, peer delinquency, and the interaction between the IO Scale and friend delinquency.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO Scale</td>
<td>-0.03 ***</td>
<td>-0.13 ***</td>
<td>-0.10 **</td>
<td>-0.18 ***</td>
</tr>
<tr>
<td>Self Control</td>
<td>0.17 ***</td>
<td>0.12 **</td>
<td>0.10 **</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>0.16 ***</td>
<td>0.12 **</td>
<td>0.11 **</td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>0.53 ***</td>
<td>0.36 ***</td>
<td>0.31 ***</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.28 ***</td>
<td>-0.25 ***</td>
<td>-0.25 ***</td>
<td></td>
</tr>
<tr>
<td>Family Bonds</td>
<td></td>
<td></td>
<td>0.09 **</td>
<td>0.09 **</td>
</tr>
<tr>
<td>Peer Delinquency</td>
<td></td>
<td></td>
<td>0.36 ***</td>
<td>0.13 *</td>
</tr>
<tr>
<td>IO Scale*Friend Delinquency</td>
<td></td>
<td></td>
<td>0.33 ***</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.78</td>
<td>7.28</td>
<td>5.64</td>
<td>6.65</td>
</tr>
<tr>
<td>R²</td>
<td>0.01</td>
<td>0.26</td>
<td>0.33</td>
<td>0.35</td>
</tr>
<tr>
<td>N</td>
<td>1053</td>
<td>945</td>
<td>910</td>
<td>910</td>
</tr>
</tbody>
</table>

* p < 0.05
** p < 0.01
*** p < 0.001

Note: The values for the constant are unstandardized.

The pseudo R-square values were calculated to more closely simulate an OLS R-square by comparing the predicted and observed values. For Model 1 with only the IO Scale, the predictor explains 1% of the variance between the predicted and observed values of Illegal. Each model explains more of the variance between predicted and observed values of Illegal. Model 2’s R-square is 0.26, Model 3’s is 0.33 and Model 4’s is 0.35.

The other variables seem to act as suppressors. Adding the control variables, self control, white, opportunity and age, increase the effect of the IO Scale from -0.03 to -0.13. Adding family bonds and peer delinquency explains some of the effect, decreasing it slightly to -0.10. Adding the IO Scale*Friend Delinquency interaction increases the effect of the IO Scale to -0.18, increasing the coefficient over 50%.

All the variables remain significant across the four models. A one standard deviation increase in IO Scale results in a 0.18 decrease in Illegal. The relationship between the IO Scale
and illegal drug use does not appear to be mediated by family bonds and peer delinquency. The direct effect with controls is -0.13 and the indirect effect through family bonds and peer delinquency is -0.05. There also is no interaction effect between either family bonds and the IO Scale or peer delinquency and the IO Scale.

When family bonds and peer delinquency were added to Model 2, (IO Scale with controls) all coefficients decreased and the significance for the IO Scale, self control and race decreased in significance as well. From Model 3 to Model 4 (with the IO Scale * Friend Delinquency interaction) family bonds did not change in its substantive or statistical significance. Opportunity decreased from 0.53 in Model 2 to 0.36 in Model 3, probably due to the fact that much of opportunity for substance use comes from peer connections. If friends have the substance an individual wants, then it is much more accessible, and a substance must be accessible in some way for a person to take the next step to use it. It decreased to 0.31 in Model 4. Peer delinquency decreased from 0.36 in Model 3 to 0.13 in Model 4. Friend delinquency probably makes up much of the variable of peer delinquency.
Figure 2

Figure 2 shows the interaction between friend delinquency and the IO Scale. The meaning of the interaction came out somewhat opposite to the hypotheses. Figure 2 shows that an inner directed individual with friends who all use illegal drugs is likely to use more often than an other directed person. It appears that peer influence for inner directed individuals is more dramatic for inner directed individuals than for other directed individuals.\(^8\)

Friend delinquency is contained within peer delinquency, but does not comprise the entire variable. Each line in the graph represents a different level of IO. At different levels of IO, friend delinquency not including use of acquaintances or coworkers) has a different slope. Scores

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\(^8\) There are possibilities for this finding that are beyond the scope of this paper and are possible future directions for research. It is possible that inner directed individuals select friends who are like themselves, and if they use will select friends who use. This may spur a feedback effect similar to that described by Akers for differential association/social learning. That would mean that delinquent inner directed individuals select friends who are delinquent. These friends reinforce prior delinquent behavior by providing more access and opportunity.
of 37 and 50 are other directed scores on the IO Scale. The higher two scores, 95 and 122, are inner directed scores. On the IO Scale, a score of 72 is the exact middle of the scale, meaning the individual is neither strongly inner or other directed. Figure 2 shows that other directed individuals are more likely to use than inner directed individuals. The two inner directed scores have predicted values of 0 and nearly 0, which means they have never used. The more other directed one is, the more likely they are to use more often. The proportion of friends who use illegal drugs, the x-axis, is not a continuous variable, but the trend line added shows the slope according to different levels of IO.

The slopes for inner directed individuals are steeper than those for other directed individuals. When looking at predicted illegal drug use for five hypothetical individuals whose friends (all) use illegal drugs, the individual with the extreme inner directed score uses most often while the individual with an extreme other direction score uses the least.

<table>
<thead>
<tr>
<th></th>
<th>Illegal Drugs</th>
<th>Other Drugs</th>
<th>Marijuana</th>
<th>Prescription Misuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO Scale</td>
<td>0.98</td>
<td>*</td>
<td>0.98</td>
<td>*</td>
</tr>
<tr>
<td>Family Bonds</td>
<td>1.31</td>
<td>1.84</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>Peer Delinquency</td>
<td>1.34</td>
<td>***</td>
<td>1.34</td>
<td>***</td>
</tr>
<tr>
<td>Self Control</td>
<td>1.36</td>
<td>***</td>
<td>1.30</td>
<td>***</td>
</tr>
<tr>
<td>Opportunity</td>
<td>1.10</td>
<td>***</td>
<td>1.15</td>
<td>***</td>
</tr>
<tr>
<td>Age</td>
<td>1.02</td>
<td>1.07</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.34</td>
<td>0.36</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>923</td>
<td>923</td>
<td>896</td>
<td>895</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Tobacco</th>
<th>Alcohol (any age)</th>
<th>Alcohol (21 or older)</th>
<th>Alcohol (under 21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO Scale</td>
<td>0.99</td>
<td>0.97</td>
<td>***</td>
<td>0.99</td>
</tr>
<tr>
<td>Family Bonds</td>
<td>2.12</td>
<td>***</td>
<td>1.58</td>
<td>*</td>
</tr>
<tr>
<td>Peer Delinquency</td>
<td>1.15</td>
<td>***</td>
<td>1.10</td>
<td>*</td>
</tr>
<tr>
<td>Self Control</td>
<td>1.32</td>
<td>***</td>
<td>1.06</td>
<td></td>
</tr>
<tr>
<td>Opportunity</td>
<td>1.09</td>
<td>***</td>
<td>1.06</td>
<td>**</td>
</tr>
</tbody>
</table>
To begin exploring the relationship between IO and use of different substances, I ran t-tests. Four of them, not shown here, showed significant differences in means of the IO Scale and use vs. nonuse. Those who drink alcohol and were 21 or older tend to be more inner directed. Those who drink alcohol underage tend to be more other directed, as were those who used any illegal drug and those who used marijuana. But since there could be an effect of age for the alcohol variables, looking at a regression with many controls, including age, is the next step.

I did logistic regressions with eight types of substance use in the last 30 days as the outcome. All the regressions have the same predictor variables, but as Table 4 shows, not all are related the same way to the different types of use. The models with the outcomes of marijuana, tobacco, alcohol use for respondents under 21 years old, and any age of alcohol use have the largest percentages of users in the last 30 days in the entire sample. The smallest percentage is for the percentage of those who use "other" drugs: methamphetamines, cocaine, heroin, inhalants or hallucinogens in the past 30 days (4.5% of the sample). Since the samples for drugs such as inhalants and hallucinogens were so small by themselves, there were some outliers that strongly affected the coefficients. When these "other drugs" are recoded to be together, there are no outliers that affect the outcome.

The pseudo-R-square reported for the logistic regressions is the Nagelkerke, because it ranges from 0 to 1, while the Cox and Snell R-square does not (which is why it is not reported). Log likelihood values for the logistic regressions are not reported because the outcomes are different and the values would be useless. One fact to keep in mind for R-square values and
pseudo R-square values is that OLS minimizes the sums of the squared differences between the
errors and predicted values while logistic regression does not. That also affects the interpretation
of the pseudo-R-square since the OLS R-square captures how well the model explains variance.
Nagelkerke's R-square is based on log-likelihood and takes the sample size into account, like the
Cox and Snell R-square. Although logistic regression calculates its values differently than OLS,
the interpretation of the pseudo R-square is still very similar. The highest R-square value is for
the use of alcohol over 21. Age explains most of that relationship; approximately 71% of the
variance in the odds of alcohol use is explained by the predictors. For illegal drugs (the four
models on the top row of Table 4) the R-square ranges from 0.34 to 0.38.

Controlling for age, opportunity, self control, family bonds and peer delinquency, the IO
Scale remains significantly related to the use of alcohol, alcohol while underage, marijuana, and
all illegal drugs (not including any type of alcohol use or prescription misuse). Marijuana and all
illegal drugs have the same significant predictors: IO Scale, peer delinquency, self control, and
opportunity. This is probably so because marijuana use makes up most of that variable. It makes
sense that age takes up much of the significance for the alcohol use regressions separated by age.
The separation itself depends on age. One is either over or under 21. An increase in age
dramatically increases the odds of using alcohol at age 21 and older (odds ratio = 12.48). But the
IO Scale is not substantive in any of these regressions. There is a less than 3% decrease in the
odds of use of any of the substances in Table 4 as we move from other directed to inner directed
scores.

In Table 4, the control variable opportunity is significant for all the models except when
Alcohol use for those 21 and older is the outcome. Opportunity is significant while the IO Scale is
not for the outcomes other drugs, prescription misuse, and tobacco use. Both opportunity and the
IO Scale are significant for any illegal drug use, marijuana and alcohol use for any age. Age is not
significant except for the regressions involving alcohol use. Both age and the IO Scale are
significant for alcohol use at any age. Self control is significant for any illegal drug use, marijuana, prescription misuse and tobacco use. Both self control and the IO Scale are significant for any illegal drug use and marijuana use. The IO Scale is not significant while self control is only in the case of tobacco use.

Opportunity was not substantively significant in most cases. The highest percent increase in the odds of using any substance is with prescription misuse. An increase in opportunity relates to a 16% increase in the odds of prescription misuse. Age is most substantive with alcohol use while over 21 years old. With an increase in age, there is a 17% increase in the odds of drinking alcohol at any age. Self control is similarly substantive in most regressions. For the outcomes of other drug use, tobacco use, marijuana use, and illegal drug use, there is a range of 30%-36% increase in the odds of using with a decrease in self control (high values are associated with low self control).

Family bonds are only significant for tobacco use and alcohol use at any age. The variation for that variable is small. Only 16.7% of the sample reported any family bonds (N=185). The scale has limited variability with its range from 0 to 2.43, and the average student in the sample had a low family bond score (0.15). Family bonds were significant while the IO Scale was not for tobacco use, and both the IO Scale and family bonds were significant for alcohol use at any age. In every regression family bonds were substantively significant, even if they were not statistically significant. In the regression with the outcome other drugs, higher family bonds are related to an 84% increase in the odds of using other drugs. For alcohol use at any age there is a 58% increase in the odds of drinking alcohol with an increase in family bonds. The odds are the highest for tobacco use, over 100% increase, and for any illegal drug use the increase is 34%.

Peer delinquency is substantive with the outcomes of illegal drug use, other drug use, marijuana use and prescription misuse, but not really for the outcomes of tobacco use (15% increase in the odds), alcohol use at any age, or separated by ages.
Table 5: Odds Ratios for the Logistic Regression of the Inner and Other Directedness Scale (IO Scale) on Alcohol with IO Scale*Age Interaction

<table>
<thead>
<tr>
<th></th>
<th>Alcohol (under 21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO Scale</td>
<td>0.77</td>
</tr>
<tr>
<td>Peer Delinquency</td>
<td>1.16 ***</td>
</tr>
<tr>
<td>Opportunity</td>
<td>1.06 ***</td>
</tr>
<tr>
<td>Age</td>
<td>0.16 ***</td>
</tr>
<tr>
<td>IO Scale * Age</td>
<td>1.01 *</td>
</tr>
<tr>
<td>R²</td>
<td>0.40</td>
</tr>
<tr>
<td>N</td>
<td>907</td>
</tr>
</tbody>
</table>

* p < 0.05  
** p < 0.01  
*** p < 0.001

For illegal alcohol use, Table 5 shows that the IO Scale stays significant when adding an interaction between the scale and age. The pseudo R-squared is 0.40, meaning that the predictors explain 40% of the variation in the odds of underage alcohol use in the last 30 days. The odds ratio for the IO Scale is substantive here, 0.77. An increase in the IO Scale results in a 23% decrease in the odds of using alcohol underage, controlling for the other variables in the model.
Figure 3

Figure 3 represents the IO Scale * Age interaction. Only 7% of the sample is age 22 and above, so the estimated slope for age 33 is unstable. For ages 18 through 22, with an increase in the score on the IO Scale (high values mean more inner directed) comes a decrease in the log odds of tobacco use. That means inner directed individuals at those ages are less likely to use tobacco (smoke and smokeless).
Chapter 6

Discussion

The results support H1. Other directed individuals are more likely to use illegal drugs and use them more often. The difference is significant, and nearly moderate. A 13.03 point (one standard deviation) increase in the IO Scale decreases Illegal by 0.18. To increase Illegal by 1 takes a 72.39 point increase in the IO Scale. For example, to go from using 6-10 times in the last 30 days to using 11-15 times takes an increase on the IO Scale of 72.39 points, which would move one from any other direction score to any inner direction score because 72 is the median possible score of the scale, and the marker for one being just between inner and other directedness. If the lowest score in the sample, 37, our extreme other direction score increased by 72.39 points that would make the score inner directed (109.39).

The example mentioned before is supported. A student with an extreme inner direction score, average self control, plenty of opportunity, half delinquent peers, and average family bonds is less likely to use than a similar other directed individual. Family delinquency and parent delinquency were not significant variables in these models, and were not included. The inner directed student in this sample with the above characteristics has a predicted score of 2.77 on Illegal. That means that the student is predicted to use illegal substances about 6-10 times in a 30 day period. The comparable other directed student is predicted to use about 16-20 times in a 30 day period (predicted score of 5.23). This means that controlling for the other predictors in the model, other directed individuals are more likely to use illegal substances.

Perhaps it is because trading, buying, or selling illegal substances is more work with people than with things. It might also be possible that the inner directed individuals who are using, use more for the experience, such as a goal of "exploration of consciousness" or to cope alone with stressors. If inner directed individuals' motivations for using illegal substances differ,
perhaps the inner directed individual uses illegal substances to "explore the consciousness." That would be an inner directed activity, because it is primarily a solo experience. It is looking within oneself and does not involve other people. Coping could be another reason an inner directed individual uses. Instead of talking to friends about stressors, the inner directed individual may decide to smoke marijuana to "take the edge off."

![Predicted Values for Varying IO and Peer Delinquency](chart)

**Figure 4: Predicted Values of Illegal Frequency of Use for Varying IO and Peer Delinquency**

Figure 4 shows the predicted values of *Illegal* for four hypothetical individuals, controlling for the other predictors in Table 3 at their mean (self control, race, opportunity, age and family bonds). The interaction has the corresponding IO Scale value and the corresponding maximum (4) or minimum (0) value for friend delinquency, depending on whether the maximum (13) or minimum (0) value for peer delinquency is used. The extreme other direction score (37) comes from the minimum value of the IO Scale in the sample. The first bar with slanted lines indicates the predicted score for an individual with an extreme other directed score and the
maximum value for peer delinquency (13), and the second bar indicates a similar individual with the minimum value for peer delinquency (0). The first bar shows a score of 4.03 for such an individual, which is close enough to 4. A value of 4 on _Illegal_ indicates someone who used illegal drugs 11-15 times in the past 30 days. The second bar, for the other directed individual with no friends who uses, has a score of 1.35, which rounds down to 1. A score of 1 on _Illegal_ indicates that the individual has used no illegal substances in the past month.

The solid filled bar is for an individual with an extreme inner direction score (122, the maximum for the IO Scale in the sample) and the maximum value for peer delinquency, then someone with the minimum value for peer delinquency. The predicted value for an inner directed individual (with a score of 122) with no peers who use illegal substances or misuse prescriptions is 0 (never used), so no bar appears on the chart. The predicted value for an inner directed individual with all peers who use illegal substances is close to 0.
Figure 5: Predicted Values of Illegal Frequency of Use for Varying IO and Peer Delinquency

Figure 4 shows the pattern indicated earlier, that other directed individuals are more likely to use. Figure 5 shows a similar finding, and similar numbers to Figure 4. Other directed individuals are more likely to use illegal drugs. The setup for Figure 5 is similar to figure 4. The two hypothetical other directed individuals are represented by the two bars with the slanted lines. The two hypothetical inner directed individuals are represented by the two solid colored bars. Other variables are controlled on their means, except the IO Scale and family bonds. A hypothetical individual with an extreme other direction score (37) who has the maximum value in the sample for family bonds (2.43) has a predicted value on Illegal of 3.84. A value of 4 on Illegal means someone used 11-15 times in the past 30 days. The second striped bar, an other directed individual with no family bonds has a predicted score of 2.61, which is close to 3 meaning that the individual is predicted to have used 6-10 times in the past 30 days.

The two hypothetical inner directed individuals (IO Scale = 122) have scores of 1.38 for maximum family bonds and 0.15 for minimum family bonds. The two figures show the results further, that peers matter greatly for everyone, and that the IO Scale itself makes a moderate difference. The family bond variable itself has little variability. If there were more cases explicitly reporting family-related inhibitions in the data, the effect might change. Only 16.7% of the sample reported any family bonds (N=185). The scale has limited variability with its range from 0 to 2.43, and the average student in the sample had a low family bond score (0.15).

The scores for peer delinquency and family bonds do not differ much by the IO Scale. The four scores for hypothetical individuals in Figure 4 closely match the four scores for Figure 5, even though the IO Scale * Friend Delinquency interaction is included. They are 4.03, 1.35, 0.25, 0 for the peer delinquency manipulation, and 3.84, 2.61, 1.38, 0.15 for the family bond manipulation. The largest point difference is between 1.35 and 2.61 (1.26 difference) and that is between not using in the past 30 days (1) and using 1-5 times in the past 30 days (2). Five times is
fairly frequent, however. The difference between 1 and 2 is fairly substantive. Comparing someone who has not used in a 30 day period to someone who has used once a week for three weeks and twice for one week in a 30 day period; however, the difference may not be that extreme. A student may have a very busy month (perhaps close to the end of a semester) and then have more free time in the summer.

The second hypothesis, that family bonds and peer delinquency would mediate the relationship between the IO Scale and Illegal, was not supported by these data. H2 is not supported. The direct effect with controls is -0.13, and the indirect effect is -0.03. The indirect effect is smaller in absolute value than the direct effect, and so there is no mediation according to these data; however, longitudinal data might show mediation when these cross-sectional data did not. The relationship between the IO Scale and peer delinquency is negative, meaning that other directed individuals report greater peer delinquency. The IO Scale is positively related to family bonds, but not significantly so, meaning that family bonds would not mediate the relationship between IO and drug use. The lack of mediation does not mean that peer delinquency and family bonds are not still important. They did explain some of the magnitude of the IO Scale, since it had a coefficient of -0.13 with controls, then decreased to -0.10 when family bonds and peer delinquency were taken into account. Inner directed individuals are attentive to family bonds and the values that parents give them at a young age. Other directed individuals are sensitive to peers.

Although neither family bonds nor peer delinquency mediated the IO-delinquency relationship tested in these data, this negative finding may owe itself to some sort of developmental change. Age is an important factor with the alcohol related outcomes, because whether alcohol is legal or illegal depends on age, and age was the only significant variable for alcohol use age 21 and over in the logistic regression in Table 4. The t-tests for means indicated that illegal alcohol use is related to other direction, while legal alcohol use is related to inner direction; however, when controlling for age, the IO Scale's effect was no longer significant. This
could mean that the IO Scale is developmental, although these data cannot test that. Another point with age is that the group of control variables in the tobit regression for Illegal acted as suppressors together, but a tobit regression of the IO Scale and age on Illegal show that age explains some of the effect of the IO Scale. The standardized coefficient goes from -0.186 to -0.144, about a 23% reduction. Age seems to be an important factor when taking into account the IO Scale.

The IO Scale remained significant in the tobit regression with Illegal as the outcome. The IO Scale stays significantly related to the use of alcohol, alcohol while underage, marijuana, and illegal drugs. Compared to the t-tests, the IO Scale is not significantly related to alcohol use for ages 21 and over (legal). Although the t-test shows that the average person who drinks alcohol legally is inner directed, when controlling for age in the logistic regression, the IO Scale is not significantly related to the odds of alcohol use.

H3 is partly supported. Neither family bonds nor peer delinquency moderate the relationship between the IO Scale and Illegal. The interaction between the IO Scale and Friend Delinquency was significant and substantial. For example, an other directed individual with a score of 95 with no friends who use illegal drugs, has a predicted score of 0 on Illegal. An inner directed person with a score of 37 and no friends who use illegal drugs, has a predicted score of about 2 on Illegal. The difference is from never used to using 6-10 times a month.

Individuals who tend to use substances associated with social situations do not necessarily tend to be other directed (H4). Other directed individuals are more likely to smoke marijuana, drink alcohol while under 21, but IO is not significantly related to tobacco use. Figure 6 shows the predicted probability of illegal drug use (for marijuana, inhalants, cocaine, methamphetamines, heroin, or hallucinogens) by IO. It translates the meaning of the 2% decrease in the odds of illegal drug use shown in Table 4 for the IO Scale into probabilities. The first two bars show extreme inner directedness and extreme other directedness, respectively. The second
set of two bars show the 25th percentile and 75th percentile. The other directed score is 63; 25% of
the sample have a score of or below 63, while the inner directed score is 79; 75% of the sample
have a score of 79 or below.

There is no substantial difference between the other directed and inner directed
probability most of the time, since most of the sample is between the first and third parts of the
interquartile range, but there is a notable difference between the extreme scores of IO. Controlling
for the other variables in the model at their means, the extreme other direction score results in a
predicted probability of 0.34. The extreme inner directed score for a similar individual results in a
predicted probability of 0.13. But it takes looking at the extreme scores to see a substantial
difference.

The difference between the other directed score of 63 and the inner directed score of 79,
which represent the extremes of most of the sample is not substantial. The predicted probability
for an other directed person with a score on the IO Scale of 63 is 0.26, while the predicted
probability for an inner directed person with a score on the IO Scale of 79 is 0.22.
In the model of tobacco use with the age * IO interaction from Table 5, the IO Scale is significant with tobacco use. The difference is also substantial; an increase in the IO Scale results in a 23% decrease in the odds of tobacco use, and the extreme scores of IO show the substantial difference IO makes for tobacco use. An inner directed individual with the other variables in the model at their mean has a probability of 0.26 of using tobacco. A similarly situated other directed individual has a predicted probability of 0.85.

For tobacco use, the IO Scale became significant once age was taken into account. This is another interesting suppression effect that shows the potential for IO in developmental criminological theory, and in other criminological theories like differential association/social learning or self control. Even with such strong predictors like peer delinquency and age in the model, the IO Scale is significant and substantive.

To further illustrate the effect of the IO Scale with tobacco use, I show Figure 7. Figure 7 shows the predicted probability of tobacco use by IO and peer delinquency. There are two inner
directed scores for the maximum (13) and minimum (0) peer delinquency, and two other directed scores for maximum and minimum peer delinquency. Again, the inner directed individual is less likely overall to use substances; here, tobacco.

The maximum peer delinquency with an inner directed individual results in a predicted probability of tobacco use of 0.57. The minimum peer delinquency results in a predicted probability of 0.16 for tobacco use. For other directed individuals, the maximum peer delinquency results in a probability of 0.96 and the minimum results in a probability of 0.75. For other directed individuals, even the minimum peer delinquency results in a 0.75 probability of using tobacco. The minimum peer delinquency is 0, meaning no friends, coworkers, acquaintances or those one volunteers with use tobacco. It is possible that it mostly includes smoking cigarettes, which may be a response to the anxiety with which an other directed person handles on a daily basis. For example, an other directed individual with a job, classes, and who belongs to a club must occupy many roles. They may experience role conflict when they serve an instructor at their place of work, or fellow students at their place of work. They may experience scheduling conflicts and time management conflicts. These are possible for inner directed individuals as well. But because other directed individuals are so sensitive to the opinions of others, such stressors may affect them more and then they may be more likely to smoke.
The relationship in the t-tests that show underage drinking is related to other directedness while legal alcohol use is related to other directedness brings up the question of whether IO is developmental. Riesman suggests that over time people tend to become other directed, but not in an individual developmental way. Although the mean score for the IO Scale is 71.20, an other directed score, there are enough inner directed individuals (with a score over 72) that this IO Scale mean is not far from the median possible score of 72. About 53% of the sample is other directed. If directedness changes over time as Riesman described, then we might expect more other directed individuals than that. But unfortunately these data cannot give information on whether IO is developmental.
Perhaps some of the inner directed individuals are international students, or nonwhite students who might have a different culture that results in them being inner directed. Nonwhite respondents have a mean of 74.18 on the IO Scale, meaning they are more inner directed than the white respondents, who have a mean IO score of 70.67 (the difference between the means is significant).

The relationship between the IO Scale and age is significant (β=-0.181). People also become less delinquent as they age (Hirschi and Gottfredson 1983). Most of this sample may not have experienced some of the stronger social bond experiences negatively related to delinquency such as marriage, job stability or attachment to spouse (Sampson and Laub 1990). Undergraduate students probably move often, change jobs often, and are in a temporary situation being at university. Since delinquency and IO are related to age, it is difficult to separate the meanings and effects of these situations. The relationship to the IO Scale may be because people become more inner directed as they age.

It is possible that IO reflects the types of salient bonds Sampson and Laub talk about related to different stages in the life course. Previous studies using the IO Scale noted age in their findings. In two different studies, Kassarjian (1962) as well as Park and Smith (1966) found that graduate students tend to be more inner directed and undergraduates tend to be more other directed (Kassarjian 1962; Park and Smith 1966). This could be related to age. Older people tend to be more inner directed (Centers 1962; Kassarjian 1966). In previous articles it was thought that the reason for older people being more inner directed was that people in general (not developmentally) become other directed as time goes on; however, IO may be capturing a developmental trend. In a follow-up study, the IO Scale was administered to beginning psychology classes at the University of Cologne and Berlin (Kassarjian 1966). The German students were more inner directed than undergraduates in the United States (Kassarjian 1966). The German students were also older (25.66 years old) than the U.S. undergraduates (20.25 years
old) (Kassarjian 1966). It is interesting to note that the older sample tended to be more inner directed while the younger sample tended to be more other directed, suggesting that it may be worth seeing if IO is developmental.

This would also make sense since Sampson and Laub (1990) suggest that salient institutions of social control vary across the life course. During childhood and adolescence family, school and peer groups are most important, and in adulthood marriage, work, parenthood, and investment in the community are most important. This may partly be the case if IO changes with age. If people are other directed in childhood and adolescence, their peer group is mostly important, then when they become adults and more inner directed, marriage, parenthood, and family become more important.

Conclusion

The two types of people, inner and other directed conform in different ways according to Riesman, and these data suggest that they deviate in different ways as well. Family bonds are positively related to the IO Scale (although note it is not significantly related), meaning that inner directed individuals are more likely to report family bonds. Peer delinquency is negatively related (and significant) to the IO Scale, meaning that other directed individuals are more likely to report peer delinquency.

Family bonds and peer delinquency are in turn related to respondent delinquency. In these data, both variables are significantly and substantively related to Illegal. IO remains significant in the presence of other strong correlates of delinquency for self control and differential association/social learning theories. IO added to the model by its significant and substantive effect.
Since hypothesis 1 was supported by the data, that means that other directed individuals are more likely to use and more likely to use more often. That also means that IO is related to drug use. That is the base of my synthesized theory. In four out of the eight logistic regressions in Table 4 IO was also significant, although not substantive for most of this college sample (see Figure 6). IO matters; it also is significant and substantial in the presence of some strong predictors of delinquency for differential association/social learning such as peer drug use, and for self control such as self control, family bonds and opportunity.

Age is another main correlate of delinquency, and IO is significant in the presence of that as well. Figure 7 draws from Table 5 to show a predicted probability of tobacco use (vs. nonuse). Table 5 controls for the IO Scale * age interaction, which brings about a suppression effect. The IO Scale was not significant for tobacco use in Table 4. The predicted probability of tobacco use is 0.26 for the extreme inner directed score and 0.85 for the extreme other directed score. The difference is substantial. IO is significant and substantial in the presence of other strong correlates of delinquency.

I made some assumptions that I could not test with these data. I could not test whether people start out as naturally selfish, in the self-interested pursuit of pleasure and minimization of pain, as Hobbes proposed or whether they learn deviant behavior from significant others as Sutherland proposed. These data cannot show whether people learned deviance from friends or selected into deviant peer groups; however, I use Akers (1998) review to support the feedback effect explanation. Some select into deviant peer groups and some learn deviance from friends, but selecting into a deviant peer group means that one will learn from peers who will reinforce previously learned deviant attitudes and skills.

The data allow the inclusion of two of the four aspects of differential peer association: priority, frequency, duration, and intensity. Since these data do not ask about priority or frequency, I can neither support nor reject them in my synthesized theory. I assume that the type
of associate one is reflects duration: friend, acquaintance, co-volunteer, or co-worker. One spends longer periods of time with friends than acquaintances. Depending on the number of hours one works or volunteers, one can spend quite a bit of time with co-volunteers or co-workers. But these also relate to intensity. A comment from a co-worker might not have the same intensity as a similar comment from a friend. The amount of time one spends with someone and the emotional reactions that person is capable of inducing can both give information about the impact that person has on one's life. For example, one may spend more time with co-workers than with friends, but a friend will probably have more impact on one's life because they are closer emotionally. They can induce intense emotions.

Figure 2 shows the graph of the IO Scale * friend delinquency interaction. It is possible that because friends are the most intense peers, they are significant in the interaction with the IO Scale while peer delinquency was not. But peer delinquency is still important with the IO Scale.

Figure 4 shows the effect of peers in general on four hypothetical individuals. Peers have a greater effect on other directed individuals than inner directed individuals. Even an individual with an extreme inner direction score (122) and the maximum peer delinquency score (13) (and maximum value for friend delinquency for the interaction) has a predicted score of 0.25 meaning he or she is closest to never having used illegal drugs than having used before, but not in the past month. The other directed individuals are much more affected by peer use. The individual with an extreme other directed score (37) and the maximum peer delinquency (and friend delinquency) has a predicted score of 4.03, more than 16 times the value of the similarly situated inner directed individual (IO Score of 122). Peers have a much greater effect on other directed individuals than inner directed individuals, supporting earlier statements that other directed individuals are more oriented towards peers. Friends have a greater effect as well since they are the most intense peers.

Parent delinquency and family delinquency were not significant in the models for Table 3, so in these data individuals were not more or less likely to engage in deviant behavior if family
members, or if parents themselves engage in deviant behavior. Self control does inhibit criminal behavior, but it seems that those peers with whom one differentially associates matters the most for other directed individuals; family bonds seem to make the most difference for inner directed individuals. Figure 5 shows four hypothetical individuals.

The first two are other directed (IO Scale score of 37) and one with the maximum family bond has a predicted score of 3.84 while the one with the minimum family bond has a predicted score of 2.61. The one with the maximum family bond score has a predicted illegal drug use value almost one and a half times greater than the other directed individual with the minimum family bond score. The difference for inner directed individuals is 9.2 times greater for an inner directed individual with a maximum family bond score. The inner directed individual (IO Scale score of 122) with the maximum family bond score has a predicted score of 1.38 while the one with the minimum family bond score is 0.15. The relationship is in a strange direction, however. The difference in family bonds makes more of a difference for inner directed individuals than other directed (the 9.2 times difference versus the 1.4 times difference) but greater family bond scores mean greater predicted values for substance use.

Limitations

The current sample of college students provides unique problems because they are in a special situation in life. They mostly live on campus, and their lives revolve around university. They are in a transition stage for their level of socioeconomic status (SES) (Brimeyer, Miller and Perrucci 2006). Not all college students come from middle class before college. Class aspirations, social class location, parents’ education and other factors influence SES. It is difficult to capture the SES of college students.
The smaller sample size is an issue since the sample was not random. A random sample would provide more variation in age and family bonds. More variation in age (and longitudinal data) would allow a better look at whether age is developmental, and how it might change over time. Other techniques such as fixed effects or hierarchical linear modeling would allow researchers to control for stable individual differences (like personality) over time to see the effect of changing IO over time, if it does change with age.

There may also be more variation in peers’ use of drugs (those one volunteers with, works with, and friends and acquaintances) and parents’ drug use. That would allow any relationships to emerge that did not in this study. If parent or family drug use matters for IO, then more variation in those variables would allow that relationship to show in the data.

**Directions for Future Research**

The suppression effects in Table 3 would be interesting to explore further. When added to the model, the group of variables, self control, white, opportunity, and age caused the value for the regression coefficient of the IO Scale to increase from -0.03 to -0.13. The value decreased again slightly to -0.10 (also decreased slightly in significance) when adding family bonds and peer delinquency. Data from another sample might give different results, or it might support the suppression effect.

In Tables 4 and 5, the IO Scale becomes significant controlling for the IO Scale * age interaction. That is another suppression effect that would be interesting to explore. A regression with only age and the IO Scale shows that age decreases the value of the IO Scale’s coefficient in comparison to the bivariate regression with the IO Scale on Illegal. When age is added to the logistic regression, it was not significant for tobacco use. Adding the IO Scale * age interaction caused a suppression effect. The value of the coefficient shows the relationship is much stronger
and significant. Further exploration with more data would demonstrate whether these data have idiosyncratic qualities that bring about suppression and interaction in these instances.

Another finding that may either turn out differently, or be able to be explored further would be the positive association between family bonds and Illegal in Table 3. Family bonds are related to delinquency, but they are usually related in the opposite direction. Further exploration would show whether these data have some sort of flaw, or whether IO brings about some other factor that reverses the relationship between family bonds and drug use.

It is possible that the IO Scale could also add to a general strain theory model, or a stress/strain model. General strain theory involves stresses and strains that produce negative emotions, and a person may cope with negative emotions through crime (Agnew 2005). Emotions might be important in the distinction between inner and other directed individuals. Other directed care greatly about the opinions of others. For example, other directed individuals, especially in business value a personality over a product according to Riesman. Rejection then becomes about a person rather than what the person produces. If one continually is fired from jobs, or is turned away from job positions, then that is much more personal. It is as if the person themselves is not worth having a job, rather than one's skills or what one produces not being up to par.

The inner directed individual is not as sensitive to the opinions of others, and would have much less emotional reaction to them. However, the inner directed individual may have an emotional reaction to a situation or circumstance. For example, the hypothetical engineer mentioned earlier may be pressured by his wife to accept the promotion to manager to receive more money. To take on the role of a good husband, he should provide for his family, as we might assume he learned from his parents early in life. Inner directed individuals are driven by the goals and values learned early in life. One of those can be being a good husband/wife. So the wife pressures the husband into accepting the management position, and he experiences negative emotions as a result of all that happens in the situation. He may be angry at himself for giving in
to the pressure of his wife, and may be resentful of the wife because he gave up the craft he enjoys and in which he excels. He may also feel nostalgic or melancholy about his skills as an engineer, because he would have much less time and opportunity to use the skills.

In the other directed individual's situation, if he or she is rejected from jobs, then he or she may lose income. The feelings of worthlessness are negative emotions that might arise. The person in such a situation may attempt to cope with the negative emotions that arise through crime. They perceive the source of their negative emotions and act upon that in a delinquent way. They may perceive the source as the actual source or they may attempt to blame others. Perhaps they blame the place that rejected them for a job and decide to steal from it. The inner directed individual in the general strain situation may attempt to deal with emotions by taking it out on his wife through violence, or perhaps he will take it out on his employees by being harsh and overly demanding.

In a more generalized idea of strain, the stress/strain argument that Merton suggested may benefit from including IO (Merton 1967). Here is an example from Riesman. If a society has mostly other directed individuals, inner directed individuals may not function as well in that society. Other directed individuals look for different qualities in hiring someone to work for them, for example. If an inner directed person has a personality that does not fit in with a certain working atmosphere, an other directed boss might deem him or her a "poor fit" for the environment. An inner directed individual in a mostly other directed setting might not have the means to succeed, like lacking in a type of personality for a certain workplace. Riesman (2001) and Meštrović (1997) both assess the United States as a society of mostly other directed individuals.

Although according to this idea, inner directed individuals would be more likely to use illegal substances. They would lack the means, such as the right kind of personality, goals and values to achieve the success that the other directed society promises. To cope with this type of
mismatch between success and means, inner directed individuals will be more likely to use illegal drugs.

One last criminological theory that I will mention is Sykes and Matza's (1957) techniques of neutralization. Basically one manipulates oneself into believing a certain crime or deviant act is acceptable, and then does it. Other directed individuals must manipulate themselves and others in everyday life according to Riesman. Perhaps other directed individuals are more likely to use illegal substances because they manipulate themselves; they neutralize the illegal or deviant aspect of illegal substance use and then use. It is possible that inner directed individuals do not use techniques of neutralization because right and wrong are more black and white to them, since right and wrong is set for them at a young age.

IO may be useful within a developmental framework as well. IO may be a developmental characteristic. The relationships that emerged with age may be worth exploring further. It could be a useful framework to incorporate into developmental crime theories. It is possible that people become more inner directed with age. We tend to appreciate our parents more with age; when we are on our own, we appreciate some of the life experience parents and elder family members have to offer. As Sampson and Laub (1990) suggest, when we are younger social institutions like school are important to us, while parenthood and marriage are more important when we are older.

Longitudinal data would be necessary to answer questions about whether IO is developmental rather than fixed at a young age. A more representative sample would also provide more variation in both drug use and family bonds. More variety in age and life situation would help to capture IO, and one way to solve these problems would be to have a less exclusive sample.
IO Revisited

Although few scholars have considered Riesman's conceptualizations of individual and social IO useful enough in recent years to use as a framework or to test empirically, this paper examined both. In these exploratory data IO added to the model which included strong predictors of deviant behavior such as family bonds, peer delinquency, age, and self control, some of the main correlates of delinquent behavior. IO deserves further testing and exploration. A more representative sample and longitudinal data would help answer some of the questions about whether IO is a developmental characteristic. IO may be useful in other criminological theories, as it was in differential association/social learning and self control.
References


Appendix A

Survey Instrument

This appendix contains the survey instrument used to collect the data formatted for the thesis.

Section I (5 Questions)

Direction: For this section, answer a few questions to describe yourself. Circle the answers that best describe you.

1. Circle your gender
   Male   Female   Transgender   Other (please specify)
   ______________

2. Please write your age ______

3. What racial or ethnic group do you most identify with? Circle one.
   Anglo American (caucasian)
   Mexican American
   African American
   Other, Hispanic origin, specify if you would like ____________________________
   Native American, specify if you would like ____________________________
   International Student, specify if you would like ____________________________
   Other, specify if you would like ____________________________

4. What is your major? ____________________________

5. What is your overall GPA?
   A   A-   B+   B   B-   C   C-   D   F

Section II (36 Questions)

Direction: A number of statements or questions with two choices are given below. Indicate your strength of preference by circling one of the four bold answer choices.

"STRONGLY PREFER A," for example, means that you strongly prefer the choice next to the bolded "A."

If you have trouble choosing either A or B, go with your "gut" feeling or imagine these were your only two choices. Which one would you choose over the other?
1. With regard to partying, I feel
   A. the more the merrier (25 or more people present);
   B. it is nicest to be in a small group of intimate friends (6 or 8 people at most)

   STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

2. If I had more time
   A. I would spend more evenings at home doing the things I'd like to do;
   B. I would more often go out with my friends.

   STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

3. If I were trained as an electrical engineer and liked my work very much, but was offered a promotion into an administrative position, I would
   A. accept it because it means an advancement in pay which I need quite badly;
   B. turn it down because it would no longer give me an opportunity to do the work I like and am trained for, even though I desperately need more money.

   STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

4. I feel that
   A. it is difficult to allow myself to rest when there is work that could be done;
   B. I am never bored when I have time to rest.

   STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

5. I would rather join
   A. a political or social club or something similar;
   B. an organization dedicated to literary, scientific or other academic subject matter, or dedicated to a cause.

   STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B
6. I would be more eager to accept a person as a group leader who
   A. is outstanding in those activities which are important to the group;
   B. is about average in the performance of the group activities but has an especially pleasing/charismatic personality.

STRONGLY PREFER A  SOMewhat prefer A  SOMewhat prefer B  STRONGLY PREFER B

7. I like to read books about
   A. people like you and me;
   B. great people or adventurers.

STRONGLY PREFER A  SOMewhat prefer A  SOMewhat prefer B  STRONGLY PREFER B

8. For physical exercise or as a sport I would prefer
   A. softball, basketball, volleyball, or similar team sport;
   B. skiing, hiking, horseback riding, bicycling, or similar individual sport.

STRONGLY PREFER A  SOMewhat prefer A  SOMewhat prefer B  STRONGLY PREFER B

9. With regard to a job, I would enjoy more
   A. one in which I can show my skill or knowledge;
   B. one in which I get in contact with many different people.

STRONGLY PREFER A  SOMewhat prefer A  SOMewhat prefer B  STRONGLY PREFER B

10. I believe
    A. being able to make friends is a great accomplishment in and of itself;
B. one should be concerned more about one's achievements rather than with making friends.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

11. I would rather
   A. be popular and well-liked by everybody;
   B. become famous in the field of my choice or for a particular deed.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

12. With regard to clothing
   A. I would feel conspicuous (self-conscious) if I were not dressed the way most of my friends are dressed;
   B. I like to wear clothes which stress my individuality.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

13. On the subject of social behavior
   A. a person should set his/her own standards and then live up to them;
   B. one should be careful to live up to the prevailing standards of the culture one is in.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

14. I would consider it more embarrassing
   A. to be caught wasting time on a job for which I get paid;
   B. losing my temper when a number of people are around whose opinions I care about.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

15. I respect the person most who
   A. is considerate of others and concerned that they think well of him/her;
B. lives up to his/her ideals and principles.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

16. A child who has had intellectual difficulties in some grade in school
   A. should repeat the grade to be able to get more out of the next higher grade;
   B. should be kept with his/her age group though he/she has some intellectual difficulties.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

17. In my free time
   A. I'd like to read an interesting book at home;
   B. I'd rather be with a group of my friends.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

18. I have
   A. a great many friends who are, however, not very intimate friends;
   B. few but rather intimate friends.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

19. When doing something, I am most concerned with
   A. "what's in it for me" and how long the benefit will last;
   B. what impression others get of me for doing it.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

20. As leisure-time activity I would rather choose
A. woodcarving, painting, stamp collecting, photography, or similar activity by myself;
B. poker, spades, or other card game, or discussion groups with other people.

STRONGLY PREFER A SOMETHAT PREFER A SOMETHAT PREFER B STRONGLY PREFER B

21. I consider people most successful when
A. they can live up to their own standards and ideals;
B. they can get along with even the most difficult people.

STRONGLY PREFER A SOMETHAT PREFER A SOMETHAT PREFER B STRONGLY PREFER B

22. The main thing a child should be taught is
A. cooperation (sharing, working in a group, etc.);
B. self-discipline (self-control, learning to deal with failure, etc.).

STRONGLY PREFER A SOMETHAT PREFER A SOMETHAT PREFER B STRONGLY PREFER B

23. As far as I am concerned
A. I am only happy when I have people around me;
B. I am perfectly happy when I am left alone.

STRONGLY PREFER A SOMETHAT PREFER A SOMETHAT PREFER B STRONGLY PREFER B

24. On a free evening
A. I like to go to a coffee shop and read (or some similar atmosphere);
B. I would rather go out and eat with my friends.

STRONGLY PREFER A SOMETHAT PREFER A SOMETHAT PREFER B STRONGLY PREFER B

25. The persons whom I admire most are those who
A. are very outstanding in their achievements;
B. have a very pleasant personality.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

26. I consider myself to be
A. quite idealistic and to some extent a "dreamer";
B. quite realistic and living for the present only.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

27. In bringing up children, parents should
A. look more at what is done by other families with children;
B. stick to their own ideas on how they want their children brought up regardless of what others do.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

28. To me it is very important
A. what one is and does regardless of what others think;
B. what my friends think of me.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B

29. I prefer listening to a person who
A. knows his/her subject matter real well but is not very skilled in presenting it interestingly;
B. knows his/her subject matter not as well but has an interesting way of discussing it.

STRONGLY PREFER A  SOMewhat PREFER A  SOMewhat PREFER B  STRONGLY PREFER B
30. As far as I am concerned

   A. I see real advantages to keeping a journal and would like to keep one myself;
   B. I'd rather discuss my experiences with friends than keep a journal.

   STRONGLY PREFER A    SOMEWHAT PREFER A    SOMEWHAT PREFER B    STRONGLY PREFER B

31. Schools should

   A. teach children to take their reasonable place in society;
   B. be concerned more with teaching subject matter.

   STRONGLY PREFER A    SOMEWHAT PREFER A    SOMEWHAT PREFER B    STRONGLY PREFER B

32. It is desirable

   A. that one shares the opinions most others hold on a particular matter;
   B. that one strongly holds onto his/her opinions even though they may be radically different from those of others.

   STRONGLY PREFER A    SOMEWHAT PREFER A    SOMEWHAT PREFER B    STRONGLY PREFER B

33. For me it is more important to

   A. keep my dignity (not make a fool of myself) even though I may not always be considered a good sport;
   B. be a good sport even though I would lose my dignity (make a fool of myself) by doing it.

   STRONGLY PREFER A    SOMEWHAT PREFER A    SOMEWHAT PREFER B    STRONGLY PREFER B

34. Assuming I could function in a strange place, when in a strange city or foreign country I should have no great difficulty because

   A. I am interested in new things and can live under almost any conditions;
   B. people are the same everywhere and I can get along with them somehow.

   STRONGLY PREFER A    SOMEWHAT PREFER A    SOMEWHAT PREFER B    STRONGLY PREFER B
35. I believe in coffee breaks and social activities for employees because
   A. it gives people a chance to get to know each other and enjoy work more;
   B. people work more efficiently when they do not work for too long a stretch at a time and can look
     forward to special events.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

36. The greatest influence upon children should be
   A. from their own age group and from educational sources outside the family since they can be
      more objective in evaluating the child's needs;
   B. from the immediate family who should know the child best.

STRONGLY PREFER A  SOMEWHAT PREFER A  SOMEWHAT PREFER B  STRONGLY PREFER B

Section III (3 Questions)
Direction: There are no right or wrong answers to this questionnaire. Do not spend too much time on any one item. Go
with your "gut" reaction to the question. Circle the answer that describes you best.

Read the following scenario and answer a few questions regarding what you would do.

It is about 2 o'clock Thursday morning. You have spent most of the night drinking with friends at a party and
have had a lot to drink. You decide to leave and go back to your house, which is about 5 miles away from where the
party is. You feel drunk and are sure that you are over the legal limit, and wonder whether you should drive yourself
home. You remember that you need your car early the next morning for an important appointment. You also know that
your roommate is home and would be able to give you a ride back to the house to get your car the next morning.

1. Rate your probability of driving home. Circle one.

SURELY WOULDN'T  PROBABLY WOULDN'T  MIGHT/MIGHT NOT  PROBABLY
WOULD  SURELY WOULD

2. List 7 costs/"bad things" for each column that might occur if you drove yourself home in the scenario, no matter
how you answered. Think about, for example, emotional, legal, financial consequences, or consequences at home.

The [ ] box next to the line is for question #3.
3. In the box [ ] next to each line, mark how important each of these costs would be when making your decision whether or not to drive yourself home under the circumstances in the story. **Number from 1-7, 1 being most important and 7 being least important.**

Section IV (6 Questions)

**Direction:** For this next section, please answer a few questions about your friends' habits.

1. About how many, if any, of your **friends** use some type of illegal drug or abuse prescriptions?

   - NONE
   - SOME
   - HALF
   - MOST
   - ALL

2. How many, if any, of your **family members** use some type of illegal drug or abuse prescriptions?

   - NONE
   - SOME
   - HALF
   - MOST
   - ALL

3. How many, if any, **acquaintances** (those you have met through programs, classes, around campus, people you spend little time with, but may see often) do you know use some type of illegal drug or abuse prescriptions?

   - NONE
   - SOME
   - HALF
   - MOST
   - ALL

4. How many, if any, of your **coworkers** do you know use some type of illegal drug or abuse prescriptions? (circle here if you do not currently have a job)

   - NONE
   - SOME
   - HALF
   - MOST
   - ALL

5. How many, if any, of those you **volunteer** with do you know use some type of illegal drug or abuse prescriptions? (circle here if you do not currently volunteer)

   - NONE
   - SOME
   - HALF
   - MOST
   - ALL

6. Do either of your **parents** use some type of illegal drug or abuse prescriptions?

   - YES
   - NO
Section V (4 Questions)
Direction: For this section, please answer these questions to the best of your ability.

These answers will be confidential and will not cause you to be in trouble. Your professors/TAs/RAs/etc will not see your answers and even the data collector will not be able to identify you.

1. Circle any of the types of substances in the two lists that you have used in the past 30 days.

<table>
<thead>
<tr>
<th>Legal</th>
<th>Illegal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco (cigarettes, cigars, chew, snuff, etc)</td>
<td>Prescription drugs (used not as directed on bottle, or not your prescription)</td>
</tr>
<tr>
<td>Guaranine/Ginseng stimulant combo</td>
<td>Marijuana (hash, mary jane, cannabis, etc)</td>
</tr>
<tr>
<td>Caffeine</td>
<td>Inhalants (spray paint, gasoline, ammonia, whips/whippets etc)</td>
</tr>
<tr>
<td>Alcohol (if 21 years old and over)</td>
<td>Hallucinogens (LSD, PCP, MDMA/ecstasy, shrooms, etc)</td>
</tr>
<tr>
<td></td>
<td>Cocaine (powder form, rock form, injected, chewed, etc)</td>
</tr>
<tr>
<td></td>
<td>Methamphetamine (crystal meth, strawberry quick, peanut butter crank, etc)</td>
</tr>
<tr>
<td></td>
<td>Heroin</td>
</tr>
<tr>
<td></td>
<td>Alcohol (if under 21 years old)</td>
</tr>
</tbody>
</table>

2. How many times in the last 30 days, if any, have you used legal substances (of the ones listed above, except caffeine)?

<table>
<thead>
<tr>
<th>Never</th>
<th>None in the past month</th>
<th>1-5 times</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20-25</th>
<th>26-30</th>
<th>30+</th>
</tr>
</thead>
</table>

3. How many times in the last 30 days, if any, have you used illegal drugs (of the ones listed above)?

<table>
<thead>
<tr>
<th>Never</th>
<th>None in the past month</th>
<th>1-5 times</th>
<th>16-20</th>
<th>20-25</th>
</tr>
</thead>
</table>
4. Do you feel that the answers about drug use for the past 30 days are characteristic of most months?
   YES       NO

Section VI (7 Questions)

Direction: Please answer these questions to the best of your ability.

1. Imagine you want to obtain marijuana. How certain are you that any of the following apply to you? CIRCLE ALL THAT APPLY

   (1) None of these apply.  
   (2) I know who to contact to get it.  
   (3) The contact trusts me enough to sell to/trade with/share with me.  
   (4) I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eyes, etc.  
   (5) I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities).  
   (6) I know how much it costs.  
   (7) I have enough money for it.  
   (8) I have somewhere to hide the drug itself and its implements (works, tools, bong, etc.).

2. Imagine you want to obtain a hallucinogen (LSD, PCP, MDMA/ecstasy, shrooms, etc). How certain are you that any of the following apply to you? CIRCLE ALL THAT APPLY

   (1) None of these apply.  
   (2) I know who to contact to get it.  
   (3) The contact trusts me enough to sell to/trade with/share with me.  
   (4) I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eyes, etc.  
   (5) I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities).  
   (6) I know how much it costs.  
   (7) I have enough money for it.  
   (8) I have somewhere to hide the drug itself and its implements (works, tools, bong, etc.).

3. Imagine you want to obtain cocaine. How certain are you that any of the following apply to you? CIRCLE ALL THAT APPLY
(1) None of these apply. (2) I know who to contact to get it (3) The contact trusts me enough to sell to/trade with/share with me (4) I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eyes, etc. (5) I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities). (6) I know how much it costs (7) I have enough money for it. (8) I have somewhere to hide the drug itself and its implements (works, tools, bong, etc).

4. Imagine you want to obtain a methamphetamine. How certain are you that you could obtain it without getting caught? For example, do you know who to get it from, how much it costs, and how to conceal the habit or drugs? CIRCLE ALL THAT APPLY

(1) None of these apply. (2) I know who to contact to get it (3) The contact trusts me enough to sell to/trade with/share with me (4) I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eyes, etc. (5) I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities). (6) I know how much it costs (7) I have enough money for it. (8) I have somewhere to hide the drug itself and its implements (works, tools, bong, etc).

5. Imagine you want to obtain heroin. How certain are you that any of the following apply to you? CIRCLE ALL THAT APPLY

(1) None of these apply. (2) I know who to contact to get it (3) The contact trusts me enough to sell to/trade with/share with me (4) I can hide/control the effects of this drug such as behaviors associated with withdrawal, smells, spills, burns, bloodshot eyes, etc. (5) I have somewhere to do this drug where I won't get in trouble (possibly trouble with parents, friends, roommates or authorities). (6) I know how much it costs (7) I have enough money for it. (8) I have somewhere to hide the drug itself and its implements (works, tools, bong, etc).

6. Compared to those you know, how easy is it for you to tell a lie and get away with it when you could get in trouble? LESS THAN MOST OTHERS LESS THAN MANY OTHERS ABOUT THE SAME AS ANYONE ELSE
BETTER THAN MANY OTHERS
BETTER THAN MOST OTHERS

7. Compared to those you know, how able are you to be confident in a situation where you could get in trouble with authorities?
   MUCH LESS ABLE THAN OTHERS
   LESS THAN OTHERS
   ABOUT THE SAME AS OTHERS
   BETTER THAN OTHERS
   MUCH BETTER THAN OTHERS