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Adolescent Evaluation of Marijuana Use: Understanding Teenage Reasoning about Ambiguous
Social Issues through a Social Domain Framework

By

Mahsa Nouri

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Education

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of the

University of California, Berkeley

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Professor Elliot Turiel, Chair

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Abstract

Adolescent Evaluation of Marijuana Use: Understanding Teenage Reasoning about Ambiguous Social Issues through a Social Domain Framework

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Doctor of Philosophy in Education

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The public's understandings and attitudes toward marijuana use as well as changes in the legality and acceptability of marijuana use across the United States have undergone substantial changes in the past few decades. These shifts have led to changes in individuals' informational assumptions (e.g., various considerations or evidence) that come to be associated with the issue, and have made marijuana use a complex social issue that is often comprised of various relevant facets warranting consideration. During adolescence, developments in individuals' capacities for recognizing and incorporating multiple aspects of an issue enhances the potential for complexity and variation in judgments. In the present investigation, patterns of adolescents' judgments and justifications regarding marijuana use are explored through a Social Domain Theory framework.

The sample consisted of 100 high school junior and seniors, ages 16 through 18. Respondents completed a survey with open-ended questions asking about their judgments of marijuana use, as well as judgments of a prototypical moral issue (stealing) and a prototypical personal issue (using one's allowance money to purchase music). Survey items asked respondents to evaluate and justify each of the three acts generally, as well as under various contingencies. Comparisons of judgment patterns were expected to demonstrate greater homogeneity in evaluations and justifications of the prototypical issues as compared with the marijuana use issue. Informational assumptions about marijuana use were also assessed through questions about the harm (or lack thereof) involved use, and hypothetical conditions regarding the absence or presence of harm.

Results indicated that respondents judged marijuana use across the social domains of reasoning, suggesting that this is an ambiguous social issue; multiple considerations including the prudence of use, individuals' prerogatives about use, laws prohibiting use, as well as consequences to others if use was prohibited (e.g., medical uses for marijuana) were considered as respondents judged marijuana use. This was in contrast to their judgments of stealing and purchasing music (considered to be prototypical or unambiguous social issues), which were more consistently evaluated within the moral and personal domains, respectively. Moreover, informational assumptions regarding the harm involved in marijuana use suggested an association between respondents' perceptions of the harm involved in use and their evaluations of the acceptability of marijuana use. Results demonstrated the role of informational assumptions in judgment formation and suggested the complexity in adolescent reasoning about an ambiguous social issue like marijuana use.

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Dedication

To my mother, father, and sister, whose words of wisdom and endless support and encouragement made this possible.

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Chapter 1: Introduction and Literature Review

In the past few decades, the social and political atmosphere around marijuana use has led to increased divergence of public opinions and understandings about the issue. Variability in how common, how accepted, how practical, and even how lawful the use of marijuana is among communities and social groups frequently makes this a contentious issue. However, it is the very prominence and divisiveness of this issue that make it a timely topic of investigation. Marijuana use is an issue that may call to mind several considerations, making the matter complex and difficult to decisively judge. It can involve concerns about legality, safety, personal rights, social-cultural acceptability, and perhaps even morality. Some or all of these considerations may be involved in evaluations and judgments about marijuana use. While reasoning about marijuana use may undoubtedly be complicated for adults in the population who recognize the numerous facets involved in the issue, evaluations and judgments may be more complex for adolescents in the midst of a particularly transformative period of social and cognitive development.

Though children begin to learn about their social worlds early on through their interactions and exchanges with their environments, it is not until adolescence they are able to incorporate a greater number of more complex components of their world into their thinking (Nucci & Turiel, 2009). In this way, reasoning becomes more complex and responses to social dilemmas more nuanced. The reasoning process does not, however, always produce clear and definitive conclusions. Because adolescents are still in the nascent stages of forming their understanding of social matters, a certain degree of opaqueness in their reasoning and evaluations is typical and expected. This can particularly be the case with regard to more complicated matters like drugs (e.g., marijuana). Given the various (sometimes contradictory) features of the issue of marijuana use, as well as inconsistency in the “facts” and legislations on marijuana, this issue can be especially unclear for teenagers. Arguably, however, the multitude of factors that can be involved when forming judgments about marijuana use make investigating adolescents’ conceptualizations of the issue particularly instructive and revelatory of processes of adolescent reasoning.

In the present study, adolescents’ evaluations and judgments about marijuana use were examined. The principal aim of this investigation is to shed light upon adolescents’ judgments about marijuana use, and to assess which particular informational assumptions (if any) their evaluations are based upon. The study also aimed to uncover the various considerations that teens find to be most salient and applicable to the matter.

The present investigation is guided by Social Domain Theory (Turiel, 1983), a framework regarding how children and adolescents think about their social world. For over thirty years, this theory has provided a framework for investigating how children and adolescents construct their understanding of the world and the social cognitive processes they engage in when forming judgments about social matters. The key features of this theory and the value of using this framework for the investigation at hand are reviewed in the following sections.

A Review of Social Domain Theory

According to social domain theory, children come to understand their social world through their interactions with others, and in the process, construct different domains of social

knowledge, such as the moral and conventional domains. The *moral domain* refers to concepts of justice, welfare, and rights that are obligatory, universal, and unchangeable. In contrast, the *conventional domain* refers to prescribed and generally accepted social norms and rules that are contextually determined. Though these domains may overlap in some cases (e.g., killing during a war), research has indicated that individuals distinguish between moral and conventional matters from a young age (Turiel, 1983).

The social domain framework also includes a third domain, referred to as the personal domain (Nucci, 1981). The *personal domain* encompasses issues that are primarily related to concepts of the self, such as personal preferences, choices, and behaviors that do not directly affect others. An important distinction has been made between reasoning about issues that are personal matters (e.g., choice of clothing) and judgments about prudential matters (i.e., matters related to the health and safety of the individual but not others). According to Tisak and Turiel (1984), the *prudential domain* is similar to the moral domain in that it involves the issue of harm done unto persons. However, judgments about prudential issues focus on how particular actions impact the self, and in that sense are non-social and therefore lack the key social-interactive characteristic of moral issues. Research has shown that children and adolescents make distinctions among moral, conventional, personal, and prudential issues from a very early age, and understand and make judgments about their social worlds according to the domains (e.g., Nucci, 1981; Nucci & Weber, 1995; Tisak & Turiel, 1984; Turiel, 1983).

Extensive studies have generated sets of criteria considered to be characteristic of each of the social domains of reasoning. The literature in the field has consistently revealed the following criteria to be characteristic of issues evaluated as moral: (1) judgment that the act is wrong, (2) the wrongfulness of the act is not based on the existence of rules and is not contingent on rules (i.e., it would be wrong even if no rule existed), (3) the wrongfulness of the act is not based on authority commands, so the act would be judged as wrong even if an authority states the act is acceptable, and (4) the wrongfulness of the act is not based on common practice, so the act would be wrong even if it was an accepted practice among a group. Briefly, issues in the moral domains are defined as obligatory, non-alterable, and generalizable. This stands in contrast to evaluations in the conventional domain; the criterion characteristic of acts in the conventional domain include judgments of wrongfulness that are 1) contingent on rules, authority, and existing social practice, and 2) tied to aspects of the social context (i.e., are relative or relational to the specific context they are embedded in, such as the specific country, culture, family, etc.; e.g., laws, traditions). In contrast to moral and conventional domains, the personal domain encompasses non-moral issues that are “not part of the conventionally regulated system” (Turiel, Hildebrandt, & Wainryb, 1991, p. 3), but are instead considered to primarily apply to the individual and therefore to be within the realm of an individual’s personal prerogative.

Although some social issues clearly fall under one domain or another, other more intricate social issues are not always as clear-cut and therefore not consistently judged to be within one domain. In fact, there seem to be developmental trends in the ways in which children and adolescents reason about complex social issues. Nucci and Turiel (2009) explain the complexity of the reasoning process during moral development:

Development moves from early childhood set of judgments about unprovoked harm to notions of fairness as regulated by just reciprocity. Along with this understanding of

fairness, however, comes an expanded capacity for incorporating facets of moral situations that render the application of morality more ambiguous and divergent. Thus, rather than presenting a straightforward picture of moral development as linear moral ‘progress’ toward shared answers to moral situations, moral development includes periods of transition in which the expanded capacity to consider aspects of moral situations leads to variations in the application of moral criteria (p. 155).

Because adolescence is a time in which individuals are beginning to broaden their repertoire of social knowledge and gain exposure to the various elements involved in social issues, the ability to effectively reason about and understand social matters is still expanding and transforming. With development, adolescents’ capacity for recognizing and incorporating multiple aspects of an issue increases the potential for complexity and variation in judgments (Nucci & Turiel, 2009). The capacity to incorporate the various features of a single issue is a part of reasoning about *multi-faceted* or more *ambiguous* social issues, or issues involving numerous (and sometimes opposing) components.

Ambiguous issues can be differentiated from “prototypical” (or *unambiguously*) moral and personal issues through the application of the criteria (reviewed above) commonly used to define and study social domain issues (Turiel, et al., 1991). A large body of research has provided ample evidence that certain criterion judgments are applied to issues that are unambiguously moral, conventional, or personal (note that prudential matters are sometimes classified *within* the personal domain and therefore may not be separated out from the personal domain).

With regard to marijuana use, specifically, each of the social domains can be seen to be pertinent to the issue. For example, issues within the moral domain are those that include evaluations that an act is wrong regardless of the convention/context and therefore not based on the existence of rules or command of an authority figure (i.e., the act would be wrong regardless of a rule, authority figure, or common practice prohibiting or permitting the act). Marijuana use may have facets related to the moral domain, as individuals may reason that using marijuana is physically harmful or harms others because it hurts society at large when people engage in illegal acts. On the other hand, other judgments about an individual’s (especially an adult individual) personal rights and freedoms to do (or in this case, ingest) as he/she wishes with his/her own body may become salient but stand in contrast to the ‘other-focused’ moral considerations just described.

In the sections that follow, I consider why marijuana use is an “ambiguous” social issue involving several, at times contradictory, considerations that make judgments less consistent among individuals. Several factors have contributed to the complexity of the marijuana use issue, and relatedly, the evolution and continued ambivalence of public thinking about marijuana. A brief overview of the trajectory of public information, opinions, and behaviors regarding marijuana over the past few decades may assist in further elucidating the basis for the increasingly controversial and ambiguous nature of marijuana use.

Marijuana Use: An Ambiguous Social Issue

The public's understanding, perspectives, and attitudes toward marijuana use have undergone substantial changes in the past few decades. These changes are in large part due to the advances in scientific research on marijuana, as well as shifts in the commonality and illegality of marijuana use. Earlier in the 20th century, the effects of marijuana use were in many ways unknown and merely speculated about. Public opinions and fears about marijuana are partly illustrated by the 1930's movie, *Reefer Madness*, which through a dramatization of the devastating effects of marijuana use (e.g., from suicide to manslaughter or rape), fostered public fear and alarm about its use. However, by the 1960's and 70's, previous anxieties and frightful speculations about the detrimental consequences of marijuana use soon transformed into more lax attitudes about what had become a commonplace drug. Furthermore, as extensive research made marijuana and its effects far less elusive than it had been in previous generations, public opinion about the drug seemed to move in the direction of greater acceptance and less restrictiveness.

Interestingly, however, as further research has provided clearer data on the positive and negative effects of marijuana use, and as use of the drug has become more unremarkable, the issue has become more contentious. This is partly due to mixed findings about the benefits and harm associated with marijuana use. For example, besides clarifying that the impact of the drug on the brain and body is less consequential than previously assumed, research has suggested that marijuana may be beneficial for use by patients with certain diagnoses, such as cancer, glaucoma, and various chronic pain conditions. Accordingly, debates about the true harmfulness of the drug have led to questions and concerns about the legitimacy of its illegality and the reaches of individuals' personal freedom to choose to engage in use or not. On the other hand, because the use of marijuana remains illegal in most states, trafficking of marijuana continues to be a lucrative business, one related to gangs and cartel crime as well as many drug-dealing related deaths each year. So, whereas much of the American public has come to understand the immediate harm of marijuana use to be more marginal, concerns over the indirect harm caused by the purchase and sales of illegal substances, in addition to considerations of the general harm caused by any form of drug use, are some of the factors making marijuana a moral issue for many individuals. Given that various considerations make marijuana use a complex issue even for many adults in American society, it is not surprising that research on adolescents' evaluations of marijuana use have likewise suggested the ambiguity of the matter through inconsistent and/or multilayered findings (this research is reviewed below).

Besides the ambivalence over the morality of marijuana use, conventional considerations are also indeterminate. Marijuana has become so easily accessed and commonly used in the general populace, public perception and reaction to the use of marijuana has become more relaxed and tolerated in many cities across the United States. In fact, in the recent 2012 and 2016 elections, the states of Colorado, Washington, Oregon, California, Massachusetts, Maine, Nevada, and Alaska voted to make the recreational use of marijuana legal. Moreover, a total of 26 states have legalized the use of marijuana for medical purposes since the 1970's. Such legislative shifts are one of the many indicators of increased public acceptance of marijuana use. Indeed, debates regarding the effectiveness and purpose of the illegality of marijuana use have been taking place for several years, making marijuana illegality a controversial issue. Practical considerations such as the benefits of legalizing, controlling, and taxing the sales of marijuana have also become compelling arguments for legalization. The politically-charged controversy, in

conjunction with the dramatic legislative changes in the acceptability of marijuana use, elucidate some of the ambiguity around the legitimacy of the illegality of marijuana use. This in turn lends support to the proposition that marijuana use may be an ambiguous social issue for many individuals in society. This ambiguity is in turn reflected in research indicating that adolescents perceive each of the social domains to be relevant to the marijuana issue (discussed in the following section).

Furthermore, with regard to adolescents specifically, risk-taking behaviors have come to be considered a quintessential part of the adolescent period and, arguably, an important part of the process of adolescent identity formation and social development (Baumrind, 1991). However, certain adolescent risk-taking behaviors, such as drug and alcohol use, have become particularly common and have generated a great deal of concern in the past few decades. In fact, adolescent engagement in marijuana use has gained greater public attention for the past several years. This is likely due to the fact that, with over 21% of youth reporting use, marijuana is the most highly used drug among adolescents, even surpassing the proportion of youth who use cigarettes (Center for Disease Control and Prevention, 2016). More specifically, findings from the 2016 *Monitoring the Future Survey* (a national survey of over 45,000 students funded by the NIDA, a component of the National Institute of Health (NIH)), suggest that 6% of high school seniors report daily marijuana use and about 35% report using marijuana in the past year (NIDA, 2016). Increases in the availability and commonality of marijuana, in conjunction with the controversy around the issue, have made marijuana a public ‘hot topic’ that continues to warrant debate and dubiousness among many individuals.

In addition to the timeliness and relevance of this issues, the commonality of marijuana use among adolescents and the negative potential consequences early engagement in use can have on adolescents’ life trajectory make research about decisions to engage in marijuana use a valuable and relevant area of study. Moreover, common public belief and anecdotal cases have come to suggest that marijuana may be ‘gateway drug’ leading to experimentation with and use of even more dangerous and addictive drugs and lifestyle choices (Kandel & Yamaguchi, 2002; for alternative perspectives on the ‘gateway hypothesis’ see Vanyukov et al., 2003). Such concerns not only highlight the pragmatic relevance of the issue, but also further suggest the value of studying the cognitive processes that precede and predict adolescents’ decisions to engage in use.

Ongoing research indicating both positive and negative consequences of marijuana use has contributed to the continuous confusion and controversy about it. For example, research has suggested that not only does marijuana use have temporary negative impact on cognitive functions such as memory, attention, learning, and decision-making, but it has also been linked to negative long-term consequences such as decreased academic performance (including higher dropout rates) and increased risk of poverty, unemployment, and anxious mood (Green, Doherty, & Ensminger, 2017; Volkow, et al., 2016). On the other hand, research has also demonstrated several uniquely effective benefits of marijuana use, including relief from pain, nausea, insomnia, anxiety, or addiction to other substances (Harvard Health Publications, 2016).

Advancing research and the resultant shifts in the public’s understandings and perceptions of risks involved in marijuana use have led to changes in behaviors. According to research by the Substance Abuse and Mental Health Services Administration (Center for

Behavioral Health Statistics and Quality, 2015) of the U.S. Department of Health and Human Services, the percentage of adolescents (aged 12 to 17 years) who report perceiving ‘great risk’ in smoking marijuana once a month decreased from 34.4% to 24.2% from 2007 to 2013. Likewise, the rate of adolescents who perceived ‘great risk’ in smoking marijuana once or twice a week decreased from 54.6% to 39.5% within this same time frame. Along with this decrease in adolescents’ perceived risk of marijuana use came a respective increase in the prevalence of adolescents reporting engagement of marijuana use during this 2007 to 2013 timeframe. Shifts in teens’ perceptions of the safety of marijuana use, and the associated behavioral changes that seem to have accompanied these shifts, further highlight the evolving nature of public (especially adolescent) understanding of this issue. These changes coupled with the dearth of conclusive scientific information about the short- and long- term consequences of engaging in use make research on reasoning about marijuana use particularly worthwhile.

The Role of Informational Assumptions

The examples discussed above regarding the ambiguity of marijuana use indicate that many factors and considerations could become salient and hold more or less weight when an individual is reasoning about the legitimacy of marijuana use. It is the multiplicity of facets involved in an issue that in fact make it ‘ambiguous,’ or otherwise known as ‘nonprototypical.’ *Nonprototypical* issues differ from those that are clearly (or prototypically) within a single social domain because they involve considerations that cross different domains of reasoning, and thereby, require one to coordinate these the various consideration during the reasoning process. In contrast, prototypical issues do not typically summon multiple domain considerations. For example, judging the morality of murder does not conjure concerns about personal freedom or the right of the murder to kill his victim. Instead, issues of welfare, justice, and rights (features of the moral domain) become salient, making the issue of murder clearly understood to be within the moral realm. Nonprototypical issues are thus by definition ‘not prototypes,’ or not typical of domain because they involve variable considerations that may fall within more than one domain (these types of issues are referred to as *ambiguous* in the present paper). Research has shown that the domain(s) an evaluator considers to be relevant to an issue is/are contingent upon the informational assumptions held by that individual (Turiel et al., 1991).

In the present investigation, informational assumptions were examined to see if they are relevant to understanding differences between individuals’ judgments of nonprototypical (ambiguous) social issues. Research discussed in Turiel et al. (1991) is reviewed below in order to explain the value of the specific methodology of the present study. In their monograph, Turiel et al. (1991) discuss two features of nonprototypical (ambiguous) societal issues. Their research suggests that 1) “evaluations and judgments of the nonprototypical issues are associated with differing assumptions,” and that, 2) “there may be ambiguities in the understanding of these assumptions that contribute to inconsistencies within individuals’ judgments” (p. 65). An example from the authors’ monograph is discussed as a means of demonstrating how informational assumptions are part of the nonprototypical character of certain issues and how individuals come to judge such issues.

In Turiel et al. (1991), evaluations regarding the acceptability of having an abortion illustrate the role of informational assumptions in one’s judgment about the issue. Findings from this research suggested that assumptions about *when life begins* (at conception or later on) were

related to evaluations about the acceptability of abortion. Those that judged abortion to be wrong did so on the basis that abortion is ‘killing’ because life begins at conception. However, those that judged abortion as acceptable within a certain timeframe of the pregnancy did so on the basis that life begins within the last trimester before birth (at which point they, too, would consider abortion as killing because life has begun at this later point in the pregnancy).

Additionally, ambiguities and uncertainties within these assumptions complicated the matter further and made judgments seem inconsistent at times. The following are examples of such variables: Even individuals who believe abortion is wrong may still allow for exceptions in cases of incest, rape, or if the pregnant woman’s life is in danger (prioritizing the mother’s physical welfare over that of the fetus), while those who generally support abortion rights may too object to an abortion if it is being sought as a means of choosing the sex of the child or as a kind of birth control. Such complicated features of the issue and the related informational assumptions that individuals drew upon to reach their judgments were critical to understanding their evaluations.

Just as with abortion, the informational assumptions involved in marijuana use can also be related to individuals’ evaluations of this issue. Informational assumptions are often the bases for individuals’ judgments – they are often the reasons or evidence that one points to when justifying one’s ultimate evaluation. And these informational assumptions that one holds may apply to more than one of the social domains of reasoning. The present investigation is based on the proposition that the variances and/or ambiguities in individuals’ informational assumptions in fact implicate the variances in their domain classifications of ambiguous issues. In other words, the variability (or lack thereof) in the informational assumptions that comprise an issue gives it its nonprototypical (or prototypical) quality. Turiel and colleagues (1991) explain the difference between *nonprototypical* (i.e., ambiguous) and *prototypical* issues and the informational assumptions involved in either type of issue as follows:

Features of social relationships, cultural or social systems, personal concerns, and uncertainties in assumptions associated with the acts can all contribute to reasoning about a particular issue since in constructing judgments about the social world individuals attempt to coordinate different components of their experiences...From our perspective, issues like abortion, homosexuality, pornography, and incest are nonprototypical in that they include cross-domain considerations as well as ambiguities in informational assumptions....It is evident that several elements of social reasoning come together in judgments about these [nonprototypical] issues. One relevant component is the extent to which the issue is surrounded by strong social sanctions. Since individuals experience the cultural stance, they are likely to take it into account. Our findings indicate, however, that this is only part of the story. It appears that another salient feature of the nonprototypical issues is personal choice and jurisdiction. Accordingly, members of this society attempt to coordinate social norms and personal choice. Interestingly, the prototypical moral issues are also highly charged and entail strong sanctions, but personal choice is not salient. For the moral issues, the cultural stance does not generally pose this type of conflict because the social requirements map onto individuals’ judgments of obligation dictated by considerations of welfare, justice, and rights. (Turiel et al., 1991, p. 81-83).

Relating this to marijuana use, various informational assumptions may become salient in one's judgment about this issue. As previously mentioned, marijuana use might raise concerns about personal freedoms and choices, prudential concerns regarding harm to the self, and/or conventional concerns regarding rules, laws, and social expectations. Such concerns stem from an individual's informational assumptions about the potential harm marijuana use can cause to one's memory and motivation, informational assumptions about the legality of the drug and the likelihood and degree of problems that could result with authorities if caught with the drug. One might also consider information assumptions regarding the risk of trying a "gateway drug" that may lead to involvement with more dangerous and addictive drugs like cocaine or heroin.

The above examples of potential considerations are provided to illustrate the ways in which informational assumptions can influence one's reasoning about the issue and, thereby, one's evaluations about the acceptability of the act. In other words, informational assumptions have implications for how an issue is conceptualized, and thereby, judged. The social domain(s) an issue is judged to be classified within (i.e., moral, conventional, prudential, and/or personal) in turn inform(s) one's evaluation of the issue. For example, conventional considerations about legality and getting into trouble with the law are more likely to lead to judgments that use is not all right whereas personal considerations about freedom to choose are more likely to lead to judgments that is all right despite other factors. It thus follows that understanding the informational assumptions and reasons that individuals draw upon when justifying their judgments about an issue can help elucidate the basis for their evaluation of the acceptability of act or issue (i.e., judging the act as all right or not all right or evaluating an issue favorably or not).

Accordingly, in the present study, adolescents' informational assumptions regarding marijuana use were examined as a means of understanding their judgments about this issue. By asking adolescents to report whether they think that frequent use of marijuana is harmful to the user, this study elucidated some of the informational assumptions this sample of adolescents maintains regarding the physical and/or psychological harm (or lack thereof) involved in marijuana use. Thus, the present study adds to the field of research by inquiring about the reasons behind adolescents' judgments about marijuana use and the informational assumptions that are part and parcel to their reasoning process.

Social Domain Research on Adolescent Drug Use

Previous studies investigating adolescents' reasoning about ambiguous social matters have suggested that whereas individuals consistently judge prototypical issues within the same domains, there are higher degrees of divergence in their judgments about the more equivocal ambiguous social issues such as drug use. As will become apparent in the following literature review, studies that have investigated the complexities of social thinking about certain ambiguous issues such as drug use have been somewhat inconsistent and inconclusive. This suggests the need for further research in this area. In addition to demonstrating this need, the following review also provides the groundwork for the present investigation by explaining what has been understood thus far about adolescents' domain reasoning about social issues such as drug use, as well as other more prototypical issues.

In one of the first studies to investigate drug use through a social domain framework, Nucci, Guerra, and Lee (1991) found that not only did adolescents show domain-specificity in their reasoning about drug use, but their judgments correlated their engagement in these acts. Results suggested that the majority of the participants in their study evaluated drug use as a personal or prudential matter, rather than moral or conventional. Moreover, whereas high drug-users were far more likely than low-drug users to judge drug use as a purely personal matter, low drug-users were more likely than high-drug users to judge drug use as a prudential matter. Such results show that adolescents made distinctions between the personal and the prudential (Tisak & Turiel, 1984).

Similar findings emerged in a study on adolescents' moral reasoning and engagement in risk-taking behaviors that included antisocial behavior (e.g., stealing), substance involvement (i.e., drug and alcohol use), sexual activity, and suicidal thoughts (Kuther & Higgins-D'Alessandro, 2000). Consistent with the Nucci and colleagues (1991) study, researchers found that, overall, adolescents evaluated substance use, sexual activity, and suicide as issues within the personal domain (though some also judged it as a moral domain issue or a mixture of the moral and personal domain concerns). On the other hand, the respondents in this study evaluated anti-social behavior as a moral matter because it involves the rights, justice, and welfare of others.

It is important to note, however, that Kuther and Higgins-D'Alessandro asked participants to classify substance use as within one of three domains, the moral, conventional, or personal. Because they did not allow for participants to classify the issue as within prudential domain, it is unclear whether respondents who expressed personal and/or moral considerations with regard to substance use were likewise (or perhaps primarily) thinking about prudential concerns (the harm that such behavior causes the user him/herself). This important distinction between two or more social domains may be a confounding factor in the results of the study; as it may be in other research on adolescents' reasoning about substance use that likewise demonstrated unclear results by failing to clearly distinguish one or more domains from the others.

Similar to the above research, studies by Abide, Richards, and Ramsay (2001) and Amonini and Donovan (2006) asked respondents to classify certain behaviors like consuming alcohol and smoking marijuana, but failed to make clear distinctions between the moral and the prudential domains. In the Abide et al. (2001) study, teens were asked to evaluate acts as either moral (the act is wrong, regardless of existing laws) or personal (the act is not a matter of right or wrong, but one of personal choice). Because response choices were limited to these two domains, results did not provide a clear picture about which factors were most salient to adolescents' thinking. Moreover, just as in the Kuther and Higgins-D'Alessandro (2000) study, the manner in which Abide and colleagues defined the 'moral' domain may have muddled the moral domain with the prudential domain; responses indicating that the matter is "wrong, regardless of existing laws," were coded as moral classifications although respondents may have been thinking in prudential terms (i.e., that substance use is "wrong regardless of existing laws" because it is wrong to harm yourself by using drugs regardless of whether it is illegal or not) when selecting this response. Similarly, the study by Amonini and Donovan (2006) simply asked respondents to evaluate whether marijuana use as "morally wrong." While results indicated that

93% of respondents evaluated marijuana use as wrong in ‘some’ or ‘any’ circumstances, it was again unclear as to whether some respondents evaluated marijuana use as ‘wrong’ due to prudential lines of thinking, such as it being wrong to engage in acts that are harmful to oneself. In both these studies, differentiating between respondents’ moral and prudential concerns could have produced clearer and more conclusive results regarding respondents’ true judgments about marijuana use.

The value of distinguishing between moral and prudential considerations is evidenced by research that has in fact shown that some adolescents predominantly think within prudential terms when evaluating substance use. Tisak, Tisak, and Rogers (1994) found that prudential concerns were primary when adolescents were asked about parents and friends’ interference with one’s substance use. When asked about the legitimacy of rules against cigarette, alcohol, and marijuana use, teens’ obligation to obey these, and their obligation to respond to a friend’s use, adolescents responded with primarily prudential reasons to support their evaluations. Though younger adolescents were more likely than older adolescents to express support for the legitimacy of parents’ rules against these substances and their own obligation to obey (i.e., conventional domain concerns), the majority of respondents said it would be legitimate to tell an authority about friend smoking marijuana due to prudential reasons (protecting persons, positive peer influence). Thus, this study specifically exploring prudential considerations in teens’ thinking about marijuana use indicated that this domain is a relevant to adolescents’ thinking about use.

The research in this field thus suggests that teens perceive features related to the moral, personal, and prudential domains when thinking about marijuana use, making this a complex social issue that does not clearly fall into one of the social domains of reasoning like unambiguous social issues. This complexity has perhaps best been exemplified in research by Killen, Leviton, and Cahill (1991). This study revealed that adolescents do make clear domain distinctions regarding unambiguous social matters, but recognize the grey areas involved in more complex social issues and demonstrate more ambiguity in their judgments accordingly. Findings from the study again demonstrated that teens clearly distinguish between the moral, conventional, and personal domains, and they classify clear-cut issues accordingly. But the study also revealed the ambiguities encompassed in issues such as drug use, as well as complexity of judgments that results from these ambiguities. By asking teens about specific types drugs, the researchers found that adolescents’ evaluations and justifications involved various considerations, and that domain distinctions were even made *within* a specific issue (i.e., considering the degree of harm involved in each drug rather than judging drug use in general). Results indicated that the respondents’ domain judgments about each drug presented were based on the respondents’ individual perceptions of each specific drug’s degree of harmfulness. For example, more benign drugs like caffeine and nicotine were classified as a “personal choice” by the majority of respondents. However, a potentially more harmful drug like marijuana was categorized as a “personal choice” issue only 33% of time; respondents tended to classify marijuana use either a moral or conventional matter. Use of cocaine and crack, on the other hand, was categorized as ‘wrong independent of authority and laws’ (i.e., morally wrong) more often than any of the other drugs – the authors explained that this was seemingly due to participants’ understanding of the harmfulness of these drugs, and concluded that adolescents judged the use of more ‘dangerous’ or ‘harmful’ drugs as within the moral domain. Following this line of

reasoning, it can be presumed that participants' classification of marijuana use as within the personal and moral domains is in line with the mixed perceptions of (or ambiguity about) the harmfulness of marijuana use in society.

Additional research evidence for adolescents' multi-faceted reasoning about ambiguous social issues such as substance use was conducted by Shaw, Amsel and Schillo (2011). They investigated late adolescents' (ages 18-20) domain reasoning when presented with hypothetical scenarios involving risk-taking behaviors (i.e., reckless driving, alcohol use, drug use) and by asking respondents to justify engagement or lack thereof in the behavior/activity. It was found that 84% of the respondents' justifications referred to at least one social domain of reasoning. Moreover, 88% of the justifications respondents provided when evaluating each of the risk-taking behaviors (i.e., reckless driving, alcohol use, drug use) made reference to a *combination* of prudential, conventional, and moral considerations as reasons for not engaging in the behavior/activity. This and other studies have thereby shown the multiple lines of reasoning adolescents employ when reasoning about such ambiguous social issues and behaviors.

Such variability in adolescents' domains of reasoning in the above studies suggests that they are accounting for various contextual factors when judging these issues. As adolescents develop, they are more able to consider multiple facets of an issue rather than thinking about the issue in a unilateral way. Thus, as they become more able to integrate the various features of an issue (features that may fall under more than a single social domain of reasoning) as well as their informational assumptions, their thinking about these ambiguous issues becomes more complex and their evaluations more multi-dimensional (i.e., within multiple social domains of reasoning).

Conclusions from Previous Research and Relevance to the Present Investigation

The above review of the literature indicates that the findings about which social domain of reasoning is most prominent in adolescents' thinking about an issue like substance use have been inconsistent. Results also suggest that teens may draw upon a multitude of factors across social domains when reasoning about such issues. Moreover, problems with the methodology and/or analysis of some of these studies suggest that a forced-choice approach to data collection in this line of research limits the clarity and interpretability of results, and therefore the ability to draw conclusions from the findings. As related more specifically to the issue that is the focus of the present research, previous research has suggested that marijuana use is a social matter that involves different and at times conflicting considerations. The array of relevant facets involved in marijuana use make it an ambiguous social issue as opposed to prototypical (or un-ambiguous) moral, conventional, or personal issues.

Thus far, the following points have been discussed: 1) marijuana use is an important yet vaguely understood social issue that warrants further research, 2) marijuana use is an ambiguous issue that is often comprised of various relevant facets that merit consideration, 3) the salience of these various considerations are associated with the informational assumptions held by an individual, and 4) understanding the various informational assumptions that become salient in adolescents' reasoning about marijuana use can help elucidate the basis for their judgments and related justifications.

In the present investigation, the patterns of adolescents' judgments and justifications regarding marijuana use were explored through open-ended questions about their evaluations of marijuana use in general and under the consideration of certain hypothetical conditions. These patterns of reasoning were then compared to the patterns of judgments regarding unambiguous (or prototypical) issues. In addition to questions about marijuana use, respondents were asked to evaluate a prototypical moral issue (i.e., stealing) and a prototypical personal issue (i.e., using one's allowance money to purchase music). Adolescents' judgments and justifications about the prototypical moral or personal issues were expected to be judged within the respective moral or personal domains. However, judgments and justifications about marijuana use were expected to reflect a different pattern (e.g., mixed-domain pattern); evaluations of marijuana use were expected to be inconsistent and to reference various domains of reasoning depending on the informational assumptions held.

The Present Study—Aims, Questions, and Hypotheses

This study, which assessed adolescents' evaluations and judgments about marijuana use is modeled on previous social domain research that has investigated individuals' reasoning about ambiguous social issues, such as pornography, homosexuality, and abortion (Turiel, et al., 1991). The present study used a similar research methodology as the Turiel et al. (1991) studies. Some of the questions that were used in the Turiel et al. (1991) studies have likewise been adapted for the aims of the present study. The present study employed a short-answer response format to data collection, which allowed for a larger sample size ($N = 100$), while retaining the value that qualitative (as opposed to forced-choice) data collection methodology offers. By allowing respondents to provide justifications for their evaluations rather than only expressions of agreement or disagreement, it was expected that the present study would yield greater depth in understanding how respondents evaluate issues.

Data were gathered through the administration of surveys that asked participants whether and why/why not 1) marijuana use is all right or not all right, 2) there should be a law in the U.S. prohibiting the use of marijuana, 3) marijuana use by individuals of certain ages is all right, and 4) marijuana use would be all right if was common practice for people in the U.S. to engage in it. Based on the participant's responses to these items, he/she was asked follow-up questions about his/her evaluation of the issue in the case of certain hypothetical situations.

The survey items addressed whether and how adolescents use informational assumptions when justifying their judgments of marijuana use. This was accomplished by 1) obtaining the participants' reasons for their evaluations, followed by 2) specific items asking participants whether they think frequent marijuana use causes physical or psychological harm to the user. The participants were also asked follow-up questions based on their response to the item regarding their thoughts on whether or not marijuana use causes harm to the user. If the participant responded that he/she *does not* think frequent marijuana use causes harm to the user, he/she was asked to suppose that scientists conclusively determined that marijuana use *was* in fact harmful to the user and to judge whether marijuana use would be all right or not all right in this case. If the participant responded that he/she *does* think frequent marijuana use causes harm to the user, he/she was asked to suppose that scientists conclusively determined that marijuana use *was not* harmful to the user and to judge whether marijuana use would be all right or not all right in this case.

Research aims and intended contributions of the present study. Though there have been some studies aimed at understanding adolescent reasoning about marijuana use through a social domain framework (see previous literature review), much of the research in this field has been based on a forced-choice, survey format for data collection. While such methods can be useful for amassing large amounts of data by presenting a number of multiple-choice items to participants, they are limited in the capacity to extract the participants' thinking; the forced-choice format fails to reveal the complexity of thinking and the informational assumptions individuals draw upon to reach their judgments.

This study adopts an open-ended written response format of data collection. In this way, the study expanded upon findings from previous research by assessing the ways criterion judgments, justifications, and informational assumptions are brought to bear during adolescents' evaluations of use of marijuana. Specifically, the questions were designed to assess participants' evaluations and justifications about the acceptability of marijuana use as related to age, rules/laws/authority contingency, and common practice. These questions, as well as specific questions regarding participants' beliefs and understandings about the presence and degree of harm associated with use, are designed to assess the informational assumptions adolescents maintain regarding marijuana use.

Research questions. This study addressed the following research questions:

- How do adolescents evaluate the use of marijuana? What are their reasons, as measured by justification categories, for their evaluations?
- Do they evaluate and reason about marijuana use by adults differently from marijuana use by adolescents?
- How do they conceptualize marijuana use with regard to criterion judgments consistently found to be associated with the moral, conventional, prudential, and personal domains?
- How are informational assumptions regarding the possible harmful consequences associated with marijuana use correlated with participants' judgments and justifications?

Hypotheses and expected results. There are three hypotheses for the expected results of this study. The first is that marijuana use is regarded as an ambiguous social issue that elicits multi-domain considerations, resulting in positive and negative evaluations that may be inconsistent across- and even within- individuals depending upon the specific criterion judgments and justifications employed. Variation in response types and patterns are expected between participants, as are inconsistent patterns of criterion judgments within participants' responses (e.g., a participant may consider and reference both moral concerns about harm done upon others, personal concerns about an individual's right to choose to use marijuana, and/or conventional concerns about the legality of marijuana use in response to one or more of the questions asked). Likewise, variations within and between participants are expected with regard to the justifications and domains that participants reference in their responses.

The second hypothesis is that individual evaluations will be associated with the informational assumptions held regarding the extent of harm in marijuana use. When asked about the acceptability of use under the condition that it is not harmful, participants are expected to

evaluate the use of marijuana positively if prudential concerns (e.g., the harm that marijuana use causes to the body, the mind, etc.) were part of the basis for their initially negative evaluation of marijuana use. On the other hand, when asked about the acceptability of use under the condition that marijuana use is harmful, participants are expected to provide negative act evaluations in response to this follow-up question if prudential considerations (i.e., the lack of harm involved in the use of marijuana) were part of the basis for their initially positive evaluation of use.

The third hypothesis for this study is that, whereas evaluations in criterion judgments of marijuana use will be variable within and between subjects, evaluations of prototypical issues (i.e., the comparison issue questions, stealing and purchasing music) will be consistent (as demonstrated by previous social domain research on similar issues). In other words, results from the questions addressing marijuana use issue were expected to contrast with results of prototypical moral and prototypical personal issues in that the prototypical moral issue is expected to be consistently evaluated negatively (*not all right*) with justifications referencing the Welfare, Justice and Rights, and Moral Obligation categories and the prototypical personal issue are expected to be consistently evaluated positively (*all right*) with justifications referencing the Personal Choice category. To summarize, results from this portion of the study are expected to show the following: 1) consistently negative judgments regarding the acceptability of stealing, 2) consistently positive judgments about the acceptability of using one's allowance money to purchase music, and, respectively, 3) morally-based criterion judgments and justifications (i.e., Welfare, Justice and Rights, Moral Obligation) in response to the stealing issue and 4) personal-domain-based criterion judgments and justifications (i.e., Personal Choice) in response to the purchasing music issue.

Chapter 2: Methodology

Participants

Participants for this study were 100 adolescents aged sixteen to eighteen years of age and in their junior and senior years of high school. Participants were composed of 35 males and 65 females. Seven of the participants were age 16, sixty-three participants were age 17, and thirty were 18 years of age. The majority of the participants (86) were in the 12th grade. Fourteen of the participants were in the 11th grade. The racial/ethnic composition of the participants was primarily White (45) and Hispanic (33), but there were also a small number of participants who identified as ‘Mixed’ (16), Asian (5), or ‘Other’ (1). Participants were recruited from a high school in a mid-sized (population = 40,000) rural city in the northern San Francisco Bay Area that is primarily composed of middle class households (yearly average household income = \$64,000). Participation in the study was optional and based on students’ interest in participating in the research. The surveys were administered to students in the four class periods (the same teacher and same curriculum in each class period) of the Psychology course offered at the high school. Study administration took place during typical school day hours.

The classroom teacher explained to students that they would have the opportunity to participate in a research study being conducted by a graduate student for the purposes of a doctoral dissertation. Students were asked to review Student Consent/Assent forms as well as Parent Permission Form and to return signed forms (including both student and parent/guardian signatures) if choosing to participate in the study (see Appendix A and B for copies of each form). Completion and submission of the Student Consent/Assent and the Parent Permission Form (i.e., student and parent/guardian signatures on the form) were mandatory prerequisites for being given the choice to participate in the study on the day of administration.

The Graduate Student Investigator reviewed three guidelines for the surveys that would be handed out. The following instructions, which had been written on the front board prior to the students’ arrival, were reviewed and further explained with the participants: 1) State “all right,” “not all right,” or “depends” in response to each question, 2) always make sure to state your reason for your response (give your reason *why* or *why not* for your response), and 3) for items that have a part (a) and part (b), answer *either* part (a) or (b) –the survey provides directions about whether to answer part (a) or (b) based on the previous response given. After reviewing these guidelines, participants were asked if they had any questions. Participants’ questions were answered and the surveys were distributed.

Design and Procedures

Appendix C presents the complete study survey administered to the participants. At the start of the survey, participants were asked to provide demographic information. Participants were asked to state their age, grade, and gender, and racial-ethnic identification (i.e., White/Caucasian, Hispanic/Latino, Black/African-American, Asian/South Asian/Pacific Islander, Mixed, Other). If participants chose “Mixed” or “Other” they were asked to specify. The remainder of the survey was comprised of thirteen questions about marijuana use (items one through five), stealing (items six through nine), and purchasing music (items ten through thirteen). Item numbers two, four, five, seven, and eleven included a part (a) and part (b), only

one of which the participant was to respond to (determined by his/her initial response to the item).

The items on the survey were designed to address participants' reasoning about marijuana use. Participants were asked about their judgments of marijuana use in general (is it all right or not all right, and why or why not), whether there should be a law that prohibits marijuana use, and whether marijuana use would be all right if there was not a law prohibiting use (if the respondent indicated that there should be a law), or if there was law prohibiting use (if the respondent indicated that there should not be a law). Respondents were then asked to evaluate marijuana in the case that the majority of the people in the United States decided that marijuana use should be allowed for individuals ages 21 and over, and in the case that it was common practice for individuals to engage in marijuana use. Based on their response to the question about common practice, respondents were directed to answer whether marijuana use would be all right in places where it was *not* common practice or generally accepted (if they had previously indicated that it was all right) or whether it would be all right in places where it *was* common practice and generally accepted (if they had previously indicated that it was not all right). Respondents were also asked whether they think that the frequent use of marijuana causes physical or psychological harm to the user and to indicate why or why not. Based on their response to this item about the harmfulness of marijuana, respondents were directed to respond to a follow-up question asking them whether it would be all right to use marijuana if scientists were able to definitively conclude that marijuana use *is* safe or harmless to the user (if they had indicated that they do think marijuana causes physical or psychological harm to the user), or whether it would be all right to use marijuana if scientists were able to definitively conclude that marijuana use *is not* safe or harmless to the user (if they had indicated that they do not think marijuana causes physical or psychological harm to the user). The following are the question types and specific questions that respondents were asked regarding marijuana use.

- Act evaluation: Is the use of marijuana all right or not all right? Why or why not? (Item 1)
- Legal status in the United States: Do you think that there should be a law that prohibits marijuana use in this country? If *yes*, if there was no law prohibiting marijuana use, would it then be all right or not all right to do so? If *no*, if there was a law prohibiting marijuana use, would it then be all right or not all right to use marijuana? Why or why not? (Items 2 and 2a/b)
- Legal contingency based on age: Suppose that the majority of the people in the United States decided that there should only be a law that allows marijuana use for individuals who are over 21 years old and the law was in effect. Do you think it would be all right or not all right for individuals over 21 to use marijuana if there was this law? Why or why not? (Item 3)
- Contingency on common practice in the United States: Suppose that it was common practice for people to use marijuana. In that case, do you think it would be all right or not all right to use marijuana? If *yes*, would it be all right to use marijuana in places in the United States where marijuana use is generally *not* accepted or practiced? If *no*, would it

be all right to use marijuana in places in the United States where marijuana use generally *is* accepted and practiced? Why or why not? (Item 4)

- Safety and Prudence of Use: Do you think frequent use of marijuana causes physical or psychological harm to the user? If so, suppose that scientists were able to conclude without a doubt that marijuana use is safe and harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? If not, suppose that scientists were able to conclude without a doubt that marijuana use is *not* safe or harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? Why or why not? (Items 5 and 5a/b)

Respondents were then asked a series of questions similar in type to the ones discussed above, but regarding the act of stealing and the act of purchasing music with one's allowance money. This part of the data collection was used as a point of comparison to participants' responses to the questions about marijuana. Respondents were asked if the act of stealing was all right or not all right, whether they think that there should be law against stealing, whether it would be all right or not all right to steal if the majority of the people in the country decided that there should be a law that allowed individuals 21 and older to steal, and whether it would be all right or not all right to steal if it was common practice to steal. Respondents were asked to provide a reason for each of these evaluations (i.e., state why or why not). Furthermore, just as in the marijuana use questions, follow-up questions were asked based on respondents' evaluation of whether or not there should be a law prohibiting the act; if respondents said that there should be a law against stealing, they were asked whether it would be all right to steal if there was no law against stealing, and if they stated there should not be a law against stealing, they were asked if it would be all right to steal if there was a law prohibiting the act. These same types of questions were then posed about the act of using one's allowance money to purchase music. The following are the question types and specific questions that respondents were asked regarding the act of stealing and the act of using one's allowance to purchase music.

- Act evaluation: Is the act of a) stealing b) using of allowance money to purchase music all right or not all right? Why or why not? (stealing - Item 6; music - Item 10)
- Legal status in the United States: Do you think that there should be a law that prohibits a) stealing b) using one's allowance to purchase music in this country? If *yes*, if there was no law prohibiting a) stealing b) using one's money to purchase music in this country, would it then be all right or not all right to do so? Why or why not? If *no*, if there was a law prohibiting a) stealing b) using one's allowance to purchase music in this country, would it then be all right or not to do so? Why or why not? (stealing - Items 7 and 7a/b; music - Item 11 and 11a/b)
- Legal contingency based on age: Suppose that the majority of the people in the United States decided that there should only be a law that allows a) stealing b) using one's allowance to purchase music for individuals who are over 21 years old and the law was in effect. Do you think to would be all right or not all right for individuals over 21 to do so if there was this law? Why or why not? (stealing - Item 8; music - Item 12)
- Contingency on common practice in the United States: Suppose that it was common practice for people to use a) steal b) use one's allowance to purchase music in the United

States. In that case, do you think it would be all right or not all right to use a) steal b) use one's allowance to purchase music? If *yes*, would it be all right to use a) steal b) use one's allowance to purchase music in places in the United States where marijuana use is generally *not* accepted or practiced? If *no*, would it be all right to use a) steal b) use one's allowance to purchase music in places in the United States where a) stealing b) using one's allowance to purchase music use generally *is* accepted and practiced? Why or why not? (stealing - Item 9; music - Item 13)

Coding

Responses to each survey item were coded using a coding system developed in previous studies (e.g., Turiel 1983; Turiel et al., 1991) and modified for the current study. The same coding system was applied to all three sets of items (i.e., questions about marijuana use, stealing, and the purchasing of music). The survey items were comprised of three components: *act evaluations*, *justifications*, and *criterion judgments*.

Act Evaluation items. Responses to the act evaluation questions (items, 1, 6, and 10) were coded as *all right*, *not all right*, or *depends*, as were questions about laws pertaining to those over 21 years of age (items 3, 8, and 12), and questions about common practice (items 4, 9, and 13).

Criterion judgment items. In social domain research, criterion judgments and justifications are two dimensions of reasoning within each social domain (Turiel et al., 1991). Criterion judgments refer to the set of criteria individuals use to identify and define the social domain categories. These criteria or domain characteristics are described in

Table 1. Generally, the moral domain is defined by the criteria of obligatoriness, non-alterability, and generalizability, whereas the conventional domain is defined by the criteria of dependency on rules, authority, and context. The personal domain, on the other hand, is defined as not meeting these moral and conventional domain criteria; the personal domain criteria thus includes non-moral factors that are not part of the conventionally regulated system. Criterion judgments about the three issues investigated in this survey (marijuana use, stealing, purchasing music) were assessed by the items asking respondents to consider hypothetical instances in which each act was/was not legal and was/was not commonly practiced. The following items assessed respondents' criterion judgments:

Item 2a, 7a, and 11a: If there *was not* law prohibiting [marijuana use/stealing/purchasing music] in this country, would it then be all right or not all right to [use marijuana, steal, purchase music]? Why? (Only respondents who had previously indicated thinking that there *should* be a law prohibiting the act were directed to answer this item (i.e., Part A of items 2, 7, and 11).)

Item 2b, 7b, and 11b: If there *was* law prohibiting [marijuana use/stealing/purchasing music] in this country, would it then be all right or not all right to [use marijuana, steal, purchase music]? Why? (Only respondents who had previously indicated thinking that there *should not* be a law prohibiting the act were directed to answer this item (i.e., Part B of items 2, 7, and 11).)

Items 4a, 9a, and 13a: Would it be all right to [use marijuana, steal, purchase music] in places in the United States where [use marijuana, stealing, purchasing music] is generally *not* accepted or practiced? Why or why not? (Only respondents who had indicated thinking that it

would be all right to engage in the act if it was commonly practiced in the United States were directed to answer this item (i.e., Part A of items 4, 9, and 13).)

Items 4b, 9b, and 13b: Would it be all right to [use marijuana, steal, purchase music] in places in the United States where [use marijuana, stealing, purchasing music] is generally accepted or practiced? Why or why not? (Only respondents who had indicated thinking that it would not be all right to engage in the act were directed to answer this item (i.e., Part B of items 4, 9, and 13).

Table 1. Descriptions of the criteria judgments corresponding to the social domains.

Domain	Criteria characteristic of the domain (criterion judgment)
Moral	obligatory, non-alterable, and generalizable (1) judgment that the act is wrong, (2) the wrongfulness of the act is not based on the existence of rules and is not contingent on rules (i.e., it would be wrong even if no rule existed), (3) the wrongfulness of the act is not based on authority commands, so the act would be judged as wrong even if an authority states the act is acceptable (4) the wrongfulness of the act is not based on common practice, so the act would be wrong even if it was an accepted practice among a group
Conventional	rule-, authority-, context- dependent 1) contingent on rules, authority, and existing social practice, 2) tied to aspects of the social context (i.e., are relative or relational to the specific context they are embedded in, such as the specific country, culture, family, etc.; e.g., laws, traditions)
Personal	non-moral issues that are not part of the conventionally regulated system 1) issue primarily applies to the individual him/herself; within the realm of an individual's personal prerogative 2) issues of privacy and actions judged to be harmless to others

Justifications for act evaluations. In addition to evaluating each act under the various considerations (e.g., legal, commonly practiced), respondents were asked to provide justifications for their evaluations (i.e., state why or why not they judged the act as all right or not) for each survey item. Respondents' justifications were coded using justification categories adapted from the Turiel and colleagues (1991) studies. Based on the types of reasons respondents provided for their act evaluations, these justification categories were narrowed and expanded to capture the spectrum of responses this sample of respondents provided. This led to the development of a revised set of justification categories (see Table 2), including additional categories needed to represent response types relevant to the present study. Participants' justifications for their judgments were coded using this set revised of justification categories. Because each justification category corresponds to one of the four social domains, Table 2 also indicates the social domain with which each justification code corresponds. Note that, in accordance with previous social domain research and for the purposes of the present study, the Social Disapproval/Punishment category was not classified under any of the four social domain categories. Instead, this was category was treated as separate from the domains and excluded from the domain analyses (further discussed in the Results chapter to follow).

Table 2. Descriptions of the Justification Categories, organized by social domain (adapted from Turiel, et al., 1991, p.24).

Justification Category	Social Domain	Description
Welfare	Moral	Reference to harmful consequences to others (including taking something away from another or setting a bad example for another), consideration of the effects of one's actions on others, and/or the benefit or need of others for medical use/purposes
Justice/Rights	Moral	Reference to maintaining a balance of rights between persons, preventing social chaos or harm to society; fairness (e.g., having worked hard to earn/deserve something), and/or an appeal to personal property rights and personal possessions
Moral Obligation	Moral	Reference to moral obligations, morality (or the immorality of an act), or one's conscience; statements that the act is never acceptable or is intrinsically wrong
Custom/Tradition	Conventional	Appeal to family customs and social customs or traditions; common or accepted practices

Social Coordination	Conventional	Appeal to the need for social organization or for maintaining the system of shared expectations, including refrain from behaviors that would disturb or disrespect others
Authority/Rules	Conventional	Appeal to authority expectations, commands, or existence of rules or laws (including mention of the act being “allowed” or legal)
Age Contingency	Conventional	Reference to the age of the actor as a key consideration for determining appropriateness of an action (e.g., comparison to alcohol or tobacco use, consideration of the cultural norm to engage in use, simply stating it would be all right if the individual was that age or that the individual is ‘old enough’ or an adult)
Maturity/Responsibility	Prudential	Reference to the age of the actor as an indicator of maturity or level of responsibility that justifies the actor making his/her own choices or having the capacity to be able to handle the act
Safety	Prudential	Reference to physical consequences to the actor (e.g., harm to the brain, body, or one’s future prospects), which are not imposed by others
Pragmatics/ Sensibility	Prudential	References to moderation, practical sensibility, and reasonableness of engaging in the act
Personal Choice	Personal	Actor’s preferences or prerogative are legitimate reasons for action (e.g., act/behavior harmless to the self and/or others; choice or decision of the individual; no reason not to; always all right to do; person’s right/choice to do as they want); indication that people would find a way to get item or commit act, even if there was a law prohibiting it
Social Disapproval / Punishment	[treated as separate from the domain categories]	Reference to negative reactions of others toward actor, including social condemnation, punishment, or other disciplinary consequences

Each item response was assigned one or more justification code(s) according to the types of references the respondent made as he/she justified his/her evaluation. Because of the open-ended, short-answer format of the survey, responses to items may have referenced one or more of the categories. That is, a respondent may have mentioned considerations pertaining to any of the above justification categories, and so, a single response could have been assigned one or more of the justification codes. For example, a single item response could have referred to considerations about rules or laws regarding the act and the safety of engaging in the act, while also noting considerations of one's right to choose to engage in the act –such a response would thereby yield three justification codes. Also due to the open-ended nature of the survey, respondents at times provided 'uncodeable' responses. Uncodable responses were typically either insubstantial to determine what the respondent meant (e.g., "Using marijuana not all right because it should be used for the right reasons"), or did not clearly answer the question being asked (e.g., "Pretty much everyone I know has or does smoke weed so it pretty much is a common practice, but that does not make it all right").

Informational Assumptions. Respondents' informational assumptions about the harm involved in marijuana use assessed by item 5 and the two sub-questions of this item. Item 5 asked respondents whether they think frequent use of marijuana causes physical or psychological harm to the user, and why or why not they think it does or doesn't. Responses were assigned a *Yes, No, or Uncertain/Mixed* code to the first part of this question. The second part of this question (why or why not) was not coded, as this information was not relevant to the aims of this study. However, respondents' verbatim responses to this item were transcribed and are presented in Appendix D.

Based on their response to whether or not they think marijuana use causes harm, respondents were directed to then answer either Item 5a or Item 5b. Those who reported thinking marijuana use does cause harm were asked to suppose that scientists were able to conclude without a doubt that marijuana use is safe or harmless to the user and to judge whether use would be all right or not all right in this hypothetical case. The opposite scenario (i.e., scientists concluded without a doubt that marijuana use was *not* safe/harmless) was presented to those who reported thinking that marijuana use does not cause harm to the user.

Interrater Reliability

To measure the reliability of the coding systems, the Graduate Student Investigator randomly selected 20% of the surveys to be coded by a second individual who was trained for this purpose. For evaluations of the acts, Cohen's kappa was 0.96 for act evaluations, 0.84 for criterion judgments, and 0.73 for justifications.

Chapter 3: Results

Data Analysis Plan

Planned pairwise contrasts using chi-squared tests were used to analyze whether statistically significant differences exist between participants' responses to different questions. Correlations between variables were calculated using Spearman's rank correlation coefficient (ρ). Spearman's ρ is commonly used to evaluate the relationships between ordinal variables such as those generated by the questionnaire used in this study (i.e., Agresti, 2007). For these tests, the null hypothesis (H_0) was that there is no difference in the way the sample of participants responded to the questions. The alternative hypothesis (H_a) was that there is enough evidence to reject the null hypothesis. In all tests, an alpha value of .05 is considered significant for rejection.

Respondents' evaluations were also tested to determine whether a statistical difference existed in how they responded within each item. Multinomial goodness-of-fit (Jann, 2008) was tested for each item. The test evaluated the probability of the observed count in each response category (all right, not all right, depends) being equal to the expected count in each category. A p -value $< .05$ was taken as evidence that the observed cell counts were statistically improbable enough to reject the null hypothesis that there is no difference between expected and observed counts. Due to the small sample nature of the experiment, Monte Carlo exact tests were used to compute goodness-of fit.

A log linear regression (Agresti, 2007) was used to analyze domain use within each of the three issues (Marijuana, Stealing, and Music) for the justification results. The *Poisson* function in Stata15 (StataCorp, 2017) was used to model counts of how often participants referenced each category within a particular issue. Coefficients were reported as odds relative to the reference category, which was always the most frequently referenced domain, and p -values are derived from Wald tests.

Sparseness limitations. Preliminary analyses revealed two potential issues in data analysis: sparseness and zero variance or very low variance in participants' responses to particular questions. Many of the contingency tables are incomplete because of sparseness in certain cells. The sparseness is generally due to sampling zeros that occur when there is no observation in the cell (i.e., $n_{ij} = 0$) even though there is a chance of observing values in the cell (i.e., $\pi_{ij} > 0$).

It is commonly accepted that chi-squared statistics may not be accurate under conditions of sparse cells. The generally accepted rule is that the *expected* counts must be > 5 . Most of the pairwise contrasts contained one or more cells with expected counts less than 5. To mitigate the problem, all chi-squared tests were double checked with Fisher's exact tests (Fisher 1935; Zelterman and Louis 1992) that are more appropriate for expected values < 2 . Comparison of the results from chi-squared tests and Fisher's exact tests showed small differences between the two tests and no cases where one test rejected the null hypothesis while the other test failed to reject the null. Therefore, the more common chi-squared test was retained as the final test for pairwise comparisons of items.

Low variance limitations. As was expected based on previous social domain theory research, responses to the prototypical issue items produced zero variance or very low variance.

For example, the stealing general act evaluation item produced 100% *not all right* evaluation responses. The presence of variance precludes statistical comparisons using an item. Low variance items produced contingency tables with near-zero expected values and results that appeared biased. Due to this lack of variance, certain contrasts were not made. Specifically, responses to the prototypically moral and prototypically personal issues comparisons were not possible. Virtually none of the respondents provided a positive (*all right*) evaluation to the stealing items (i.e., respondents said that stealing is *not all right* in general, if there was no law prohibiting it, if it was legal for individuals 21 years of age or older to steal, or if it was common practice). Similarly, virtually none of the respondents provided a negative evaluation to certain music items (i.e., respondents said that purchasing music is *all right* generally and if it is common practice). The homogeneity of respondents' evaluations of these two issues made statistical comparisons with these items not possible.

Effect Size Calculation

An effect size index was used to indicate the degree of deviation from the null hypothesis. Cramer's V (an effect size index for contingency tables that can be used regardless of table size) was used. For interpretation, the general suggestions from Cohen (1988, p. 222 – 224) for $V = 0.1, 0.3, 0.5$ as respectively small, medium, and large effect sizes were used. Cohen's effect size guidelines are essentially ad hoc, yet they provide us with a common metric to compare differences between statistical tests. The tests used here are conservative and the true effect sizes may be larger for the tests with more (i.e., 4) degrees of freedom.

Sex differences

The differences between respondents who identified as male and respondents who identified as female were investigated using a traditional two-variable chi-square (χ^2) analysis. Results of χ^2 tests (item*sex) showed that the sex differences were not significant for any item. Therefore, it is assumed that sex differences do not exist in responses to survey questionnaire. The lack of sex differences suggests that attitudes toward marijuana use are not necessarily linked to sex. This is consistent with findings from previous social domain research that likewise failed to find sex differences in response patterns (e.g., Killen et al., 1991).

Age Differences

The difference between responses and age was investigated. Chi-squared (χ^2) tests were used to make planned pairwise contrasts between items (i.e., age*item). The seven 16 year-olds in the sample were dropped from the analysis because they contributed only sparse cells to the contingency table. The χ^2 tests were not significant except for one item, item 2. For this item, 18 year-olds were more likely to report thinking there should be a law prohibiting marijuana use and 17 year-olds were more likely to report thinking that there should *not* be such a law ($\chi^2(2) = 6.04, p < .049$). However, given the lack of statistically significant age differences for the other items age differences for a single item do not justify including age as a variable. Therefore, the age variable was removed from the analyses.

Racial Differences

The distribution of responses was compared between races. Pairwise contrasts for item and self-report race were conducted using chi-squared tests. The contingency tables were very sparse, suggesting that the results of this analysis should be interpreted with caution. Furthermore, the pairwise contrasts produced results that were not statistically significant aside for one item. For the one item that showed a statistically significant difference between race (item 7a, which asked respondents whether stealing would be all right if there was *not* a law prohibiting the act), 15 out of 25 cells were sparse (defined as an expected value < 5), with many expected values being below 1 and some at 0. Due to the lack of compelling evidence for statistically significant differences in responses between race/ethnicities and the presence of very sparse tables created by the analysis, the race variable was removed from the analysis.

Act Evaluation Results

The first research question asked how adolescents evaluate the use of marijuana. Respondents were asked for their evaluations on marijuana use in order to assess overall attitudes toward the issue and to compare judgments on this issue with judgments on stealing and purchasing music. Respondents' judgments about marijuana use was further assessed through questions asking for respondents' evaluations of the legality of the act and the acceptability of the act if it is commonly practiced or legal for individuals ages 21 and older. Table 3 shows respondents' answers to the initial set of marijuana questions. Generally, results suggest that the majority respondents indicated that marijuana use is all right across the conditions presented (i.e., age contingency, common use) and should not be prohibited by law. However, they also reported that frequent use causes harm to the user. Results of multinomial goodness-of-fit tests are presented to demonstrate the statistical significance of respondents' evaluation patterns by item. Pairwise contrasts between respondents' general act evaluations of marijuana (item 1) and their evaluations to each of the other marijuana items were also conducted as points of comparison (i.e., to demonstrate the difference or lack thereof between initial general act evaluations and evaluations under the subsequent conditions that were posed). Note that, throughout this chapter, percentages that do not add up to 100 indicate the presence of 'uncodeable' or incomplete (i.e., missing) data.

General evaluations of marijuana use. Respondents' evaluations of marijuana use were expected to show variance (i.e., a mix of response types) and thereby support the hypothesis that marijuana is an ambiguous (or non-prototypical) issue. This hypothesis was expected to be further supported by comparisons with the stealing and purchasing music items that were expected to show little to no response variance. The contrast between the marijuana use response pattern and the prototypically moral and personal domain issues (stealing and purchasing music, respectively) was thus expected to further demonstrate the ambiguous nature of the marijuana use issue.

The first item on the survey was used to investigate respondents' general evaluations about marijuana use. Results indicated that respondents' evaluations of marijuana use varied significantly ($\chi^2(2) = 36.14, p < .0001$), with more respondents reporting positive (*all right*) or uncertain (*depends*) evaluations of marijuana use than negative (*not all right*) evaluations of use.

Specifically, 57% of respondents stated that marijuana use is *all right*, 8% stated that it was *not all right*, and 35% provided mixed or uncertain responses (see Table 3).

Table 3. Respondents' evaluations (in percentages) of marijuana use (response results to marijuana items).

Variable (by Item)	Negative (not all right / no)	Depends	Positive (all right / yes)	Total
Item 1. Marijuana act evaluation	8%	35%	57%	100%
Item 2. Should law prohibit use?	68%	0%	30%	98%
Item 3. Age contingency (i.e., age ≥ 21 ok if law says so)	14%	4%	80%	98%
Item 4. What if use is common?	25%	12%	60%	97%
Item 5. What if use causes harm?	13%	31%	56%	100%

Legal status of marijuana act evaluation. Item 2 asked respondents whether they think marijuana use should be prohibited by law. Responses to this item were expected to further elucidate their judgments about marijuana use. A comparison of responses with this item to similar items asking respondents to judge the legality stealing and purchasing music were intended to see if the marijuana use issue differs from these prototypical issues. Results indicate that significantly fewer respondents reported favoring a law prohibiting the use of marijuana ($\chi^2(2) = 14.73, p = .0002$). Most respondents (68%) thought that there should not be a law prohibiting marijuana use. Only 30% of respondents agreed that there should be a law prohibiting marijuana use (see Table 3).

A pairwise contrast with item 1 (general act evaluation) shows that there was a statistically significant difference between how respondents initially evaluated marijuana (i.e., response to item 1) and how they responded to the question about marijuana legality ($\chi^2(2) = 20.89, p < .001$). The effect size is medium ($V = 0.32$). Thus, responses to the question about marijuana use in general were different than responses to evaluations about the legality of marijuana. Respondents' answers to these questions (items 1 and 2) were moderately negatively correlated ($\rho = -0.40, p < .001$). This suggests providing a positive evaluation of marijuana use is associated with a negative evaluation of a law prohibiting use (i.e., those who thinking use is all right are also more likely to think that there should *not* be a law prohibiting marijuana use).

Marijuana common practice act evaluations. Most respondents reported positive evaluations to the question asking whether marijuana use would be all right under the condition that it was commonly practiced or accepted. Results indicated that respondents reported

significantly higher positive evaluations (i.e., *all right* responses) to marijuana use when asked about the acceptability of use under the condition that it is commonly practiced ($\chi^2(2) = 38.12$, $p < .0001$). Most respondents (68%) stated that marijuana use would be all right in this case. However, 25% of respondents maintained that marijuana use would not be all right even if it was a common practice and 12% provided mixed or uncertain responses (see Table 3).

A pairwise contrast between the common practice question and item 1 (general act evaluation question) was statistically significant ($\chi^2(4) = 25.4$, $p < .001$) and had a medium effect size ($V = 0.36$). Follow up analyses indicated that shifts from respondents' general marijuana use evaluations to their evaluations under the common practice condition were primarily due to respondents changing their uncertain (*depends*) evaluations to negative (*not all right*) evaluations. Thus, those who had initially provided uncertain evaluations about the acceptability of marijuana use were not persuaded to think use was all right under the common practice condition. Rather, they were more likely to shift to a negative evaluation when judging the act solely on the contingency of common practice. This suggests that other considerations (aside from the commonality of the act) were more prominent in these respondents' reasoning process; that is, the common practice of the act was not an adequate contingency to shift these respondents' judgments to a positive evaluation. Little shift occurred from positive responses to item 1 to positive responses to the common practice item.

Marijuana age contingency act evaluations. The second research question asked whether adolescents evaluated the use of marijuana by adults differently than use in general. In order to determine whether respondents' judgments about the act were contingent on the age of the user, they were asked whether use by adults of a certain age would be acceptable if it was permitted by law. Respondents provided significantly higher positive evaluations of marijuana use under this contingency ($\chi^2(2) = 104.4$, $p < .0001$). In fact, responses to this item had the highest rate of positive evaluations of marijuana use (i.e., agreeing that use would be all right; see Table 3). A pairwise contrast of this item with the general marijuana use evaluation item was statistically significant ($\chi^2(4) = 35.7$, $p < .001$) and had a medium effect size ($V = 0.43$). This suggests that adolescents judge marijuana use under the legal age contingency more favorably than use in general (80% agreement that use is all right for adults age 21 and older as opposed to 57% general agreement that use is all right). Results thus indicate that respondents judge marijuana use by adults differently than they how they judge marijuana use generally; they are more likely to find that marijuana use is acceptable for adults 21 years of age or older in the presence of a law permitting such use.

Respondents' evaluations of marijuana use for adults conditional on their general evaluations of marijuana use were further compared using a cross tabulation of responses to these two items. Results are presented in Table 4, showing that 91% of those who initially agreed that marijuana use was acceptable (*all right* response to item 1) also reported thinking that use would be all right under the age contingency condition. Of the few respondents who initially disagreed that marijuana use is acceptable ($n = 8$), most (75%) shifted to agree that marijuana use would be all right under the age contingency condition. Respondents who initially had uncertain general evaluations about marijuana use also tended to shift their judgments under the age contingency condition. Of these respondents, 77% went on to say use would be all right for adults 21 and older.

Table 4. Relationships between initial marijuana act evaluations and judgments about marijuana use by adults 21 years of age or older.

Marijuana use evaluation (Response to Item 1)	Evaluation of marijuana use for adults 21 years or older (Response to Item 3)		
	All right (counts / %)	Not all right (counts / %)	Depends (counts / %)
All right (n = 57)	52 91%	3 5%	1 2%
Not all right (n = 8)	1 12.5%	6 75%	0 0%
Depends (n = 35)	27 77%	5 14%	3 9%

Comparison of marijuana use evaluations to prototypically moral and personal act evaluations. The fifth research question asked how adolescents' evaluations of marijuana use compares to those of a prototypical moral issue (stealing) and a prototypical personal issue (purchasing music). Comparisons between results from the marijuana use issue and results from the prototypical issues were intended to ascertain if marijuana use is an ambiguous issue that is judged with greater variability than issues that fall more clearly within moral or personal domains. Table 6 presents results of general act evaluations and age contingency act evaluations for the stealing and music issues. The results for the marijuana use items that are counterparts to these questions are also presented in this table as point of comparison. Results indicate considerable differences between respondents' evaluations of stealing and purchasing music in general, as well as under the age contingency and common practice conditions. Judgments about the legality of these issues also show a contrast (presented in Table 7).

Moreover, respondents' more homogenous judgments about stealing and purchasing music show considerable differences with their judgments about marijuana use. Similarly, results indicate differences between respondents' judgments about the legality of marijuana use as opposed to stealing or purchasing music – these results are presented in Table 7. As mentioned above (see Low Variance Limitations section), statistical contrast comparisons were not possible for the stealing and music issues due to the lack of response variance. Descriptive statistics are presented and discussed instead.

General act evaluations. Results for the prototypical acts (stealing and purchasing music) followed the expected pattern. Whereas respondents showed variable evaluations of marijuana use, the vast majority of respondents (94%) indicated that the act of stealing is *not all right*.

None of the respondents provided positive (*all right*) or uncertain (*depends*) evaluations of this act. As discussed above (“Low Variance Limitations”), the lack of variance in responses to this item (e.g., all responses stated *not all right*) made statistical comparisons with this item not possible.

In contrast to evaluations of stealing, the vast majority of respondents (92%) reported that purchasing music with one’s allowance money would be all right. However, a small portion of respondents (2%) did provide negative (*not all right*) or mixed/uncertain evaluations of purchasing music, citing reasons like one’s money could be better spent on more important things or that purchasing certain types of music (e.g., music with adult language) may not be appropriate for children. This small amount of variance in responses made analysis of evaluations to this item possible: Results were highly significant, suggesting a considerable bias toward providing positive or *all right* responses to this item ($\chi^2(2) = 168.75, p < .0001$). Table 5 provides a side-by-side comparison of respondents’ the general act evaluations of each issue.

Table 5. General act evaluations (in percentages) by act/issue.

Variable	All right	Not all right	Depends	Total
Marijuana use	57%	8%	35%	100%
Stealing	0%	94%	0%	94%
Purchasing music	92%	2%	2%	96%

Age contingency. Results followed expected patterns in the case that there was a legal age contingency on the permissibility of the act. Respondents tended to maintain that stealing would not be all right even under these conditions: The significant majority of respondents (91%) reported that stealing would not be all right for those ages 21 and older even if it was not prohibited by the law ($\chi^2(2) = 88.04, p < .0001$). The reverse pattern emerged for purchasing music under the age contingency, as most respondents (77%) indicated that purchasing music would be all right under the age contingency condition ($\chi^2(2) = 65.79, p < .0001$).

Common practice. Results followed expected patterns in the case of the act being commonly practiced. Respondents maintained a negative evaluation of the prototypically moral act (stealing) regardless of this condition. A significant majority of respondents (87% of the sample) reported that stealing would not be all right even if it was commonly practiced ($\chi^2(2) = 81.18, p < .0001$). The reverse pattern emerged for the prototypically personal issue (purchasing music). The large majority of respondents (92% of the sample) indicated that purchasing music would be all right if it was commonly practiced ($\chi^2(2) = 86.187 p < .0001$).

Legal status. Results followed the expected patterns with regard to the legal status of each of these items. The large majority of respondents (93%) indicated that there should be a law prohibiting stealing. On the other hand, the same percentage of respondents (93%) indicated that there should not be a law prohibiting the purchase of music. None of the respondents disagreed

that stealing should be prohibited by law and none agreed that purchasing music should be prohibited by law (the lack of variance in responses to these items rendered statistical analyses of significance not possible). These results are in contrast to results from the marijuana use legal status question that showed a more variable pattern of responses in which 68% of respondents said there should not be a law while 30% said there should be law prohibiting use.

Table 6. Responses (in percentages) to general act evaluations, age contingency evaluations, and common practice evaluations by act/issue.

Question	Act / Issue								
	Marijuana (ambiguous)			Stealing (moral)			Music (personal)		
	All right	Not all right	“Depends”	All right	Not all right	“Depends”	All right	Not all right	“Depends”
General act evaluation (act ok?)	57%	8%	35%	0%	94%	0%	92%	2%	2%
Age contingency (act ok if ≥ 21 years old?)	80%	14%	4%	1%	91%	0%	77%	4%	0%
Common practice (act ok if common?)	60%	25%	12%	0%	87%	2%	92%	0%	2%

Table 7. Responses (in percentage) to legal status evaluations by act/issue (items 2, 7, and 11 from left to right).

Act / Issue			
Should it be prohibited by law?	Marijuana (ambiguous)	Stealing (moral)	Music (personal)
Yes	30%	93%	0%
No	68%	0%	93%
Mixed/uncertain	2%	7%	1%

Criterion Judgment Results

The third research question asked how respondents conceptualize marijuana with regard to the criterion judgments found to be associated with the social domains. Criterion judgments were evaluated using the hypothetical conditions proposed in the second part of item 2 (i.e., items 2a and 2b) and item 4 (i.e., item 4a)¹. Criterion judgments were assessed through an evaluation of response patterns to contingency questions about the legality of the issue or the commonality of the issue. It would be expected that, based on the characterization of moral issues as obligatory, non-alterable, and generalizable, judgments about these acts should be consistent despite any conditions or contingencies placed on the act. This is in contrast to conventional domain issues that are by definition rule-, authority-, or context-dependent. Moral and conventional issues stand in contrast to personal domain issues, which are non-moral and not part of the conventionally regulated system. Comparisons between results of items 2a/b and 4a and results of the corresponding prototypical moral and personal issue items (i.e., legal/illegal and common practice conditions of the stealing and purchasing music acts) provided further evidence for the ambiguous nature the marijuana use as compared to these prototypical issues. Table 8 provides a summary of the criterion judgment results.

Marijuana use criterion judgments. Results from item 2a and 2b asking respondents about the acceptability of the act in the case that it is legal or illegal are presented first. When presented with these conditions, the differences in the evaluations of marijuana use became non-significant. Respondents who had initially agreed that there should be a law prohibiting marijuana use were directed to consider whether marijuana use would be all right if there was *no law* prohibiting use (item 2a). Among this group ($n = 30$), a plurality (47%) said use would be all right in this case, 27% of respondents continued to maintain that use would still not be all right, and 13% provided mixed responses. However, these differences were not significant ($\chi^2(2) = 5.85, p = .055$).

Respondents who agreed that there should *not* be a law prohibiting marijuana use, on the other hand, were directed to consider whether marijuana use would be all right in the presence of a law prohibiting use (item 2b). There were no significant differences in evaluation response patterns under this condition ($\chi^2(2) = 0.36, p = .849$). This suggests that the added condition of a law against use was not sufficient to significantly sway these respondents to a negative evaluation of marijuana use (i.e., that marijuana use would not be all right in this case). Instead, respondents in this group ($n = 68$) were evenly split in their evaluations of marijuana use; 35% said marijuana use would be all right even if there was a law prohibiting the act, 32% said that use would *not* be all right if there was a law against it, and 30% provided mixed responses (see Table 8).

Pairwise contrasts between responses to item 2 compared to item 2a and responses to item 2 compared to item 2b could not be calculated because of the lack of variance in responses (i.e., respondents could only select yes or no responses to item 2, and one of these choices was

¹ Item 4 and 4b of the survey were determined to be redundant. Item 4b was therefore dropped from the analyses.

eliminated in 2a or 2b as a yes or no response to item 2 determined whether item 2a or 2b would be answered). Due to the lack of variance, cross-tabulations were also not possible.

Criterion judgments regarding marijuana use were further assessed by item 4a asking respondents about the acceptability of the act in the case that it is *not* commonly practiced. Respondents who had previously agreed that marijuana use would be all right if it was common practice for people to use marijuana were directed to consider whether marijuana use would be all right if use was *not* common practice. Results showed significant differences in response patterns, with most respondents reporting that use would be all right under even under the condition that it was not commonly practiced ($\chi^2(2) = 6.18, p = .041$). Among this group ($n = 60$), 47% of the respondents said use would be all right even if this was case while 24% of respondents indicated that use would not be all right and 29% provided mixed responses (see Table 8). A pairwise contrast between item 4 and 4a was not statistically significant ($\chi^2(2) = 4.39, p = .112$). This suggests that there were no significant shifts in respondents' evaluations of marijuana use. That is, when comparing responses to item 4 and item 4a, there was not a significant change (increase or decrease) in the number of respondents who provided positive, negative, or uncertain evaluations of marijuana use (e.g., the average *all right* responses for item 4 and item 4a were the similar).

Comparison of marijuana criterion judgments to prototypically moral and personal criterion judgments. The criterion judgments questions for the stealing and music issues were evaluated using the items that asked respondents to judge the act of stealing and the act of purchasing music under the condition that the act was legal/illegal or commonly practiced. Like act evaluation results above, the criterion judgments results for the stealing and music items also followed expected patterns and further demonstrated the difference between judgments regarding the marijuana use issue and these more prototypical issues.

Table 8 presents the findings from the criterion judgment items by act/issue. Response patterns provided support for the proposition that responses to contingencies placed on the stealing and music purchasing acts would be less subject to change than marijuana use because of the moral (i.e., obligatory, non-alterable, and generalizable) and personal (i.e., non-moral issue that is not a part of the conventionally regulated system) characteristics of these acts. Specifically, responses were expected to remain generally negative (the act is *not* all right) for the stealing items and generally positive (the act *is* all right) for the music items whether or not that the acts are legal or common. The significant majority of respondents maintained that stealing would be unacceptable even in the absence of a law prohibiting the act; 82% maintained that the act is *not* all right, even under this condition ($\chi^2(2) = 152.49, p < .0001$). Likewise, a significant majority of respondents (87%) indicated that stealing would not be all right even if it was a commonly practiced act ($\chi^2(2) = 81.18, p < .0001$). In contrast, the significant majority of respondents (62%) maintained that purchasing music would be acceptable even in the presence of a law prohibiting the act ($\chi^2(2) = 92.165, p < .0001$). Notably, some respondents (18%) did state that purchasing music would not be all right if there was a law prohibiting the act – these respondents often stated that though such a law would be unfair or unwarranted, individuals should nevertheless abide by the laws. Not surprisingly, most respondents (92%) indicated that purchasing music would be all right if it was commonly practiced ($\chi^2(2) = 86.17, p < .0001$).

Table 8. Responses (in percentages) to criterion judgment questions (hypothetical conditions of legality/illegality and common/uncommon practice).

Questions	Act / Issue									
	Marijuana (ambiguous)			Stealing (moral)			Music (personal)			
	Agree	Disagree	Uncertain	Agree	Disagree	Uncertain	Agree	Disagree	Uncertain	
All right if legal?	47%	27%	13%	1%	82%	2%	0	0	0	0
All right if illegal?	35%	32%	30%	0	0	0	62%	18%	11%	
All right if common?*	--	--	--	0%	87%	2%	92%	0%	2%	
All right if uncommon?***	47%	24%	29%	--	--	--	--	--	--	--

* This was item 4b, which was excluded from the analysis (items 4 and 4b were determined to be redundant; item 4b was dropped).

** This question was not asked of respondents with regard to stealing or with regard to purchasing music.

Informational Assumptions about Marijuana

The fourth research question asked how informational assumptions regarding the harmful effects of marijuana use are related to respondents' judgments about marijuana use. This question was addressed by item 5 and 5a/b of the survey.

General informational assumptions about marijuana use. Table 9 presents the results of respondents' informational assumptions about the harm involved in frequent marijuana use. Results indicated that significantly more respondents reported that frequent marijuana use is harmful to the user ($\chi^2(2) = 27.98, p < .0001$). Though 31% had mixed responses (e.g., stating marijuana use was harmful in some ways but not others, or acknowledging some harm but being uncertain of the extent), 56% of respondents reported that frequent marijuana use is harmful.

Table 9. Informational assumptions about marijuana use (item 5).

Do you think frequent marijuana use causes psychological or physical harm to the user?	
Yes	56%
No	13%
Mixed/Uncertain	31%

Relationship between informational assumptions and general marijuana act evaluations. Respondents' general evaluations of marijuana use (item 1) and their informational assumptions about marijuana use (item 5) were compared. A pairwise contrast between items shows a statistically significant difference ($\chi^2(4) = 19.4, p = .001$) with a medium effect size ($V = 0.31$). There was a moderate negative correlation between items ($\rho = -0.43, p = .001$), suggesting that respondents who reported that marijuana use was not all right ($n = 8$) were more likely to report that use causes harm (100% of these respondents). Respondents who chose *depends* to the general marijuana use question ($n = 35$) were also more likely to report that use causes harm (74%). On the other hand, respondents who reported that marijuana use was *all right* ($n = 57$) were least likely to report that use causes harm (39% of these respondents). Results thus suggest that evaluations of the acceptability of marijuana use was inversely correlated with informational assumptions about the presence of harm; those who said marijuana use was *all right* were more likely to think marijuana use doesn't cause harm to the user while those who said marijuana use was *not all right* were more likely to report that marijuana does cause to the user.

Additional cross-tabulation analyses of these items provided additional details regarding response patterns. These results are presented in Table 10. Results indicated that, of the respondents who generally evaluated marijuana use as acceptable (*all right* response to Item 1), 39% also reported that frequent marijuana use causes harm to the user while 40% of this group provided mixed or uncertain responses about the harm involved with marijuana use. Most respondents (79%) who initially provided positive evaluations to marijuana use (*all right* response to item 1) went on to agree or partially agree (*mixed* or *uncertain* response) that frequent marijuana use causes harm to user. Only 21% of the respondents who had initially

evaluated marijuana use as acceptable went on to report that marijuana use does not cause harm. Not surprisingly, of the respondents who had generally negative evaluations of marijuana use (*not all right* response to item 1), 100% indicated that frequent marijuana use causes harm to the user. Of the respondents who had mixed evaluations of marijuana (*depends* response to item 1), 74% stated that frequent marijuana use causes harm to the user and 23% provided uncertain evaluations regarding the harm involved with use.

These findings suggest that while most respondents agree that frequent marijuana use causes harm to the user, this factor does not seem to be sufficient to lead respondents to evaluate marijuana use negatively. This suggests that other considerations aside from harmfulness are impacting their judgments about marijuana use. Justification results presented in the next section provide further information about respondents' reasoning and help elucidate their evaluations.

Table 10. Relationships between initial marijuana act evaluations and informational assumptions about the harm marijuana use may cause to the user.

Overall marijuana evaluation (Response to Item 1)	Informational assumptions about whether marijuana use causes harm to the user (Response to Item 5)		
	Yes (frequency / %)	No (frequency / %)	Mixed, Uncertain (frequency / %)
All right (<i>n</i> = 57)	22 / 39%	12 / 21%	23 / 40%
Not all right (<i>n</i> = 8)	8 / 100%	0 0%	0 0%
Depends (<i>n</i> = 35)	26 74%	1 3%	8 23%

Harm manipulation follow-up questions: Act evaluation under hypothetical condition. Results of the hypothetical follow-up questions to item 5 are presented in Table 11. Respondents who said that frequent marijuana use *does* cause harm to the user were directed to consider whether marijuana use would be all right if scientists conclusively determined that use *is not* harmful (item 5a). Results indicated a significant interaction; respondents were more likely to report that marijuana is all right under the condition that marijuana was determined not to be harmful ($\chi^2(2) = 68.08, p = < .0001$). Among this group (which included those who had provided mixed responses to item 5 and went on to respond to this item, *n* = 73), most (78%) said use would be all right under this condition, while 11% of respondents maintained that use was *not* all right, and 10% provided mixed/uncertain responses. By contrast, respondents who reported thinking that frequent marijuana use does *not* cause harm to the user were directed to consider

whether marijuana use would be all right or not if scientists were to conclusively determine that use *is* harmful. Results showed significant interaction; respondents were more likely to report that marijuana would *not* be all right under this condition ($\chi^2(2) = 6.08, p = .04$). Among this group (which included respondents who had provided mixed responses to item 5 and went on to respond to this item, $n = 27$), more individuals stated that it was not all right in this case than those who said it was all right: 48% said that marijuana use would *not* be all right if it was conclusively determined that use was harmful (item 5b), 33% said that marijuana use would still be all right even if it was determined to be harmful, and 11% provided mixed responses.

A pairwise comparison between item 5 asking whether respondents think frequent marijuana use is harmful and item 5a asking whether use would be acceptable if marijuana was determined to be harmless indicated a statistically significant contrast between these items ($\chi^2(2) = 6.32, p = .043$) with a medium effect size ($V = 0.30$). This suggests that respondents who reported that marijuana harms the user were also more likely to evaluate use as all right in the case that it was conclusively determined to be harmless to the user. On the other hand, a pairwise contrast between item 5 asking whether respondents think frequent marijuana use is harmful and item 5b asking whether use would be acceptable if marijuana was determined conclusively to be harmful was not statistically significant ($\chi^2(4) = 5.48, p = .241$). Therefore, it is not possible to determine whether there is a significant relationship between respondents' informational assumptions about the harm involved with marijuana use and their evaluations of marijuana under the condition that it is conclusively harmful.

Table 11. Overall responses (in percentages) to hypothetical harm/no harm questions.

Hypothetical Harm Condition Questions	Evaluation		
	Positive	Negative	Mixed/ Uncertain
<i>Item 5a. Is marijuana use all right if determined to be harmless/safe?</i> (asked of those respondents who reported thinking that frequent use <u>is</u> harmful to the user; $n = 73$).	78%	11%	10%
<i>Items 5b. Is marijuana use all right if determined to NOT be harmless/safe?</i> (asked of those respondents who reported thinking that frequent use was <u>not</u> harmful to the user; $n = 27$)	33%	48%	11%

Justification Results: Specific Categories

Respondents' justifications were elicited through questions asking them to state their reasons for each of their evaluations. These justifications were coded according to the categories summarized in Table 2. The assignment of a justification category was the result of either a positive or a negative evaluation. When subjects provided more than one justification for an

item, all justifications were coded and represented. Note that, for this section of the results, items were evaluated by group (referred to ‘item sets’) according to act/issue. That is, the questions about marijuana use (items 1-4) were analyzed together, the questions about stealing were analyzed together, and the questions about purchasing music were analyzed together. Because there were no parallel questions to item 4a in the stealing and music item sets (i.e., respondents were not asked about these two acts if they were *not* common practice), item 4a was excluded from justification analyses. Items 5 and 5a/b (informational assumption questions regarding the safety or harm involved with marijuana use) were also excluded from this portion of the analysis (see Appendix D for transcripts of respondents’ justifications to items 5 and 5a/b).

Some participants invoked justifications regarding the medical use of marijuana (‘Medical Purposes’ justifications), which can be classified under the Welfare category because they are concerned with the needs and benefits of others, these types of justifications were treated as a distinct category for this portion of the analysis because they addressed a type of marijuana use not intended in the portrayal of the issue. Distinguishing the number of responses that specifically referenced the medical use of marijuana as opposed to other welfare concerns, such as the harmful consequences to others or the effects of one’s actions on others, allowed for a clearer representation of the types of justifications provided for the marijuana item set. That is, separating the Medical Purposes justifications from the other Welfare justifications provides more information about respondents’ reasoning about marijuana use.

Statistical analyses of justifications. Statistical analyses for this portion of the results were limited. Although a log linear analysis could be conducted to determine the odds of selecting a justification category, strong inferences could not be made from such an analysis due to the inadequate sample size relative to possible response. More specifically, a log linear analysis would create a 36-cell matrix (12 categories times 3 issues), which result in a very sparse table given this study’s sample size of 100. This in turn would be problematic for inferential statistics.

However, an omnibus chi-squared test was conducted to determine whether there were overall differences in the justifications used when responding to the marijuana, stealing, and music items. That is, this test demonstrated whether the marijuana, stealing, and music issues showed different justification profiles (i.e., specific justification categories that were more likely to be referenced). Results comparing the three acts (marijuana use, stealing, and purchasing music) were statistically significant ($\chi^2(22) = 1710.7, p < .001$) with a large effect size $V = 0.78$. This is evidence that the justification profiles were different among the three issues. Pairwise comparison between issues demonstrated that there was a significant difference between the justification profile (i.e., the types of justifications provided) for the stealing items as compared to the music items ($V = 0.95, p < .001$). Results further indicated significant pairwise contrasts between justification profiles for the marijuana use items and the stealing items ($V = 0.90, p < .001$). Significant contrasts between the justification profiles for marijuana use items and the music items were also indicated ($V = 0.66, p < .001$). Table 12 provides counts of the number of references made to each justification category by item set.

Table 12. Counts of total references to each category (by issue).

Justification Category	Issue/Item Set Observed (Expected)		
	Marijuana, Items 1-4	Stealing, Items 6-9	Music, 10-13
Medical Purposes*	82 (35.987)	0 (21.335)	0 (24.677)
Welfare	28 (37.304)	57 (22.116)	0 (25.58)
Justice/Rights	0 (76.803)	171 (45.533)	4 (52.665)
Moral Obligation	0 (36.865)	84 (21.856)	0 (25.279)
Custom/Tradition	42 (26.771)	0 (15.871)	19 (18.357)
Social Coordination	11 (5.266)	1 (3.122)	0 (3.611)
Authority/Rules	84 (68.903)	18 (40.85)	55 (47.248)
Age Contingency	34 (16.677)	1 (9.887)	3 (11.436)
Maturity/Responsibility	14 (6.583)	0 (3.903)	1 (4.514)
Safety	127 (55.737)	0 (33.044)	0 (38.219)
Pragmatics/ Sensibility	54 (28.527)	0 (16.912)	11 (19.561)
Personal Choice	84 (164.577)	0 (97.571)	291 (112.853)

* Justifications referring to Medical Purposes are considered to fall under the Welfare justification category but are treated as a distinct category here for analytical reasons.

Notable discrepancies in which the observed justification count was substantially greater than its expected count were considered significant. For example, the Welfare, Justice/Rights, and Moral Obligations categories were more likely than expected to be referenced for the stealing items than for the marijuana use or music item sets, and the Personal Choice category was more likely to be referenced for the music items than the marijuana use or stealing item sets. The marijuana use items suggested a different of justification profile: Respondents were more

likely than expected to refer to the Medical Purposes, Custom/Tradition, Social Coordination, Age Contingency, Maturity/Responsibility, Safety, and Pragmatics/Sensibility justification categories when responding to the marijuana use items than when responding to the stealing or music item sets.

Justification references. Raw counts of the total references made to each justification category (by item and item set) are now presented. These are followed by the results and log linear analyses for the overall domain references (presented by issue). Findings on justification category trends for the prototypically moral and personal issues (stealing and purchasing music) are presented first. Note that the justification results tables for each act (stealing, purchasing music, marijuana use) list only the categories that were referred to at least once per item set (i.e., the absence of a justification category in the table indicates that no references were made to that category for that item set).

Justifications for the stealing items. Table 13, which presents the justifications provided for the stealing questions, shows that all the justifications for the stealing items were within the moral and conventional domains. Not surprisingly, the majority of justifications to the stealing items were in the Justice and Rights category (e.g., maintaining a balance of rights between persons, appeal to personal property rights, or an appeal to fairness). There were instances in which justifications related to the Welfare and Moral Obligation categories were provided, though such references were less frequent than the Justice and Rights justifications. Few references were made to other justification categories. Consistent with expectations, no prudential domain or personal domain justifications were provided for stealing items. Justifications related to the conventional domain were occasionally referenced; however, these were typically Authority references (e.g., appeal to authority expectations or the rules/laws).

Table 13. Justification responses (in frequencies) stealing (moral domain issue).

Justification Domain	Justification categories	Item				Total
		6	7a*	8	9	
Moral	Welfare	18	10	14	15	57
Moral	Justice/Rights	56	43	42	30	171
Moral	Moral Obligation	23	24	16	21	84
Conventional	Social coordination	0	0	0	1	1
Conventional	Authority	10	2	5	1	18
Conventional	Age Contingency	0	0	1	0	1

*Because no respondents indicated that stealing would be all right, none were directed to respond to item 7b.

Justification for the purchasing music items. Table 14 shows the justifications provided for the purchasing music questions. The large majority of justifications provided for the items about purchasing music referred to the Personal Choice category (the personal domain). Item 11b and item 12, which posed questions about conditions referencing the law (i.e., the law prohibited the act or the law permitted the act for individuals aged 21 and older), yielded justifications in the Authority category (e.g., reference to the existence of laws/rules). Item 13 asked about the acceptability of purchasing music in the case that it was commonly practiced, and respondents were more likely to reference the Custom/Tradition category (e.g., appealing to common or accepted practices) when justifying the act as acceptable. While justifications spanned several categories for the music items, the Personal Choice category was by far was by far the most frequently referenced justification.

Table 14. Justification responses (in frequencies) for purchasing music (personal domain issue).

Justification Domain	Justification categories	Item				Total
		10	11b*	12	13	
Moral	Justice/Rights	0	2	2	0	4
Conventional	Custom/Tradition	0	2	0	17	19
Conventional	Authority	1	24	25	5	55
Conventional	Age Contingency	0	0	3	0	3
Prudential	Maturity	0	1	0	0	1
Prudential	Pragmatics	4	2	1	4	11
Personal	Personal Choice	90	65	62	74	291

*Because no respondents indicated that purchasing music would not be all right, none were directed to respond to item 11a.

Justifications for the marijuana use items. Table 15 shows the number of references respondents made to each justification category when responding to the marijuana item set (items 1-4). Respondents' justifications for their judgments about marijuana use were more variable than their responses to the stealing item and the purchasing music item sets; almost all of the justification categories were referenced in the marijuana item set (with the exception of the Justice/Rights category). Justifications in the following categories were most frequently referenced: Medical Purposes, Custom/Tradition, Social Coordination, Safety, and Personal Choice. Justification responses to item 1 most frequently referenced the Medical Purposes and Safety categories, followed by the Personal Choice category. Justifications for items 2a/b most frequently referenced the Authority, Medical Purposes, Safety, and Personal Choice categories. Respondents made a near-equal number of justification references to the Authority, Age Contingency, and Personal Choice categories when responding to item 3. Items 2a/b and item 3,

which posed legal conditions, produced the Authority justification most frequently. Item 4 asked about the condition of the act being accepted or commonly practiced, and justifications to item 4 often referenced the Custom Tradition category.

Table 15. Justification responses (in frequencies) for marijuana use.

Justification Domain	Justification categories	Item					Total
		1	2a	2b	3	4	
Moral	Medical Purposes	53	4	20	0	5	82
Moral	Welfare	4	1	3	8	12	28
Moral	Moral Obligation	0	0	0	0	0	0
Conventional	Custom/Tradition	0	0	1	3	38	42
Conventional	Social Coordination	3	0	1	2	5	11
Conventional	Authority	6	13	29	30	6	84
Conventional	Age Contingency	1	1	1	27	4	34
Prudential	Maturity	0	0	0	14	0	14
Prudential	Safety	52	16	11	29	19	127
Prudential	Pragmatics	15	1	6	17	15	54
Personal	Personal Choice	23	5	16	19	21	84

Justification Results as Grouped by Domains

Overall references to domain counts were calculated by collapsing justification categories into the respective domain under which each was classified (as presented in Table 2). For example, the prudential domain comprises the Maturity/Responsibility, Safety, and Pragmatics/Sensibility justifications categories. The Medical Purposes justifications were excluded from this portion of the results for reasons noted above.

Table 16 presents the results of the percentage of references made to each domain by item. Results indicated more references to the moral domain for the stealing item set, more references to the personal domain for the music item set, and more variability in justifications to the marijuana use issue. Specifically, 89%, 95%, 91%, and 93% of responses to the stealing items were moral domain justifications. In contrast, justifications for the music items were personal domain justifications (i.e., Personal Choice category). In fact, 94% of the responses for

the general music act evaluations (item 10) were personal domain justifications. Notably, there were instances in which the conventional domain justifications were referenced in response to the music items. This was especially evident for the two items that posed the conditions of music buying being illegal (item 11b) and music buying only being permitted for individuals 21 and older (item 12); nearly a third of the responses (31%) to items 11b and item 12 referred to the conventional domain. Thus, conventional responses provided for the music items were typically in response to questions explicitly asking respondents to reason about the act under conventionally-related conditions (e.g., various legal conditions).

Table 16. Domain references (in percentages) by issue item set.

Issue / Item Set	Domain References (based on justifications)			
	<i>Moral</i>	<i>Conventional</i>	<i>Prudential</i>	<i>Personal</i>
Stealing				
Item 6	89%	11%	0%	0%
Item 7a*	95%	5%	0%	0%
Item 8	91%	9%	0%	0%
Item 9	93%	7%	0%	0%
Music				
Item 10	0%	2%	4%	94%
Item 11b*	2%	31%	2%	65%
Item 12	2%	31%	1%	66%
Item 13	0%	22%	4%	74%
Marijuana				
Item 1	4%	10%	64%	22%
Item 2a	3%	38%	46%	13%
Item 2b	4%	47%	25%	24%
Item 3	5%	42%	40%	13%
Item 4	6%	47%	29%	18%

* None of respondents answered item 7b or 11a because they did not respectively provide a negative evaluation to item 7 or positive response to item 11.

Results showed greater variance in justifications provided for the marijuana use item set than for the moral and personal items. Unlike their justifications for their general evaluations of stealing and music items, respondents reported a higher number of prudential, personal, and conventional considerations when generally evaluating marijuana use (responses to item 1). Though prudential justifications were most common (65% of justifications), respondents also frequently referenced the personal domain when justifying their reasoning (22% of responses). Respondents also stated conventional and moral considerations, which respectively made up 10% and 4% of the justifications for the general marijuana use act evaluations (item 1). A higher number of conventional justifications were stated in responses to the remaining marijuana use questions (items 2-4), which asked respondents to reason about conventional considerations (e.g., legality and common practice). However, the prudential domain continued to be frequently referenced; it was the second most referenced domain (after the conventional domain) for items 2 through 4. As indicated in results from log linear regressions to follow (Table 17), there was not a significant difference in the number of prudential and conventional justifications provided for the marijuana item set; both domains were similarly likely to be referenced in responses to these items. There were, however, significant differences between references to the other domains in the marijuana item set, as well as between each of the domains referenced in the stealing and music items sets.

Log linear regressions were used to model the counts of respondents' domain references within each issue/item set (i.e., when responding to the marijuana items, the stealing items, and the music items). Table 17 presents the results of the three regression analyses. Coefficients are reported as odds relative to the reference category. The reference category was always the most frequently referenced domain (i.e., prudential domain for the marijuana items, moral domain for the stealing items, and personal domain for the music items). In Table 17, domains are listed under each item set in order of least frequently referenced to most frequently referenced. The absence of a domain category, such as under the stealing item set, indicates that no responses in this item set referred to that domain.

Table 17. Log linear regression domain reference comparisons by issue/item set.

Issue / Item set	Odds	Std. Err.	z	p	95% confidence interval	
Stealing						
Conventional	0.092	0.019	-11.840	< 0.0001	0.062	0.137
Moral	292	-	-	-	-	-
Music						
Moral	0.014	0.007	-8.520	< 0.0001	0.005	0.037
Prudential	0.038	0.012	-10.660	< 0.0001	0.021	0.069
Conventional	0.289	0.036	-10.030	< 0.0001	0.226	0.368
Personal	291	-	-	-	-	-
Marijuana						
Moral	0.118	0.026	-9.70	< 0.0001	0.077	0.182
Personal	0.431	0.056	-6.45	< 0.0001	0.334	0.556
Conventional	0.882	0.092	-1.20	0.230	0.719	1.083
Prudential	195	-	-	-	-	-

Results of log linear regressions within the stealing and music issues/item sets followed expected patterns. Respondents were more likely to reference the moral domain than the conventional domain when responding to the stealing items ($p < .0001$). Responses to the music items were most likely to be personal domain references. For this item set, references to any of the other three domains were significantly less likely than personal domain references ($p < .0001$, for personal compared to moral, prudential, or conventional).

For the marijuana use item set, results indicate that respondents were most likely to refer to the prudential and conventional domains when justifying their evaluations of these items ($p < .001$). Although the prudential domain was most frequently referenced, there was no significant difference between references to the prudential domain and the conventional domain ($p > .05$). There were, however, significant differences between responses to the prudential domain and responses in the personal domain. Respondents were more likely to reference the prudential

domain than the personal domain when responding to the marijuana items ($p < .0001$). They were also significantly more likely to reference the prudential domain than the moral domain for this item set ($p < .0001$).

Post hoc Wald tests on model coefficients were conducted to evaluate the differences between domain references within the music and marijuana issue/item sets. The findings for the music item set are presented in Table 18. Results indicated significant differences between references to prudential and conventional domains and between references to the moral and conventional domains: Respondents were significantly more likely to reference the conventional domain than either the prudential domain ($p < .0001$) or the moral domain ($p < .0001$). The difference between respondents' use of the moral and prudential categories was not statistically significant ($p > .05$).

Table 18. Between-domain log linear regression comparisons for music item set.

Music	Odds	Std. Err.	z	p	95% confidence interval	
Comparisons						
Moral vs. Prudential	0.364	0.212	-1.73	0.083	0.116	1.142
Prudential vs. Conventional	0.131	0.041	-6.34	0.000	0.070	0.245
Moral vs. Conventional	21	10.747	5.95	0.000	7.702	57.258

The results of post hoc Wald tests on the marijuana issue are in Table 19. There were significant differences between references to the conventional and personal domains and between references to the conventional and moral domains. Respondents were significantly more likely to reference the conventional domain than either the personal domain ($p < .0001$) or the moral domain ($p < .0001$). Results also indicated significant differences between references to the personal domain and the moral domain; respondents were more likely to provide personal domain justifications than moral domain justifications when reasoning about the marijuana use items ($p < .0001$).

Table 19. Between-domain log linear regression comparisons for marijuana item set.

Marijuana	Odds	Std. Err.	z	p	95% confidence interval	
Comparisons						
Personal vs. Conventional	0.488	0.065	-5.38	0.000	0.376	0.634
Moral vs. Conventional	0.134	0.030	-9.06	0.000	0.087	0.207
Moral vs. Personal	0.274	0.064	-5.50	0.000	0.173	0.434

Chapter 4: Discussion

Our social world is fraught with the complexities of issues that comprise a multitude of factors. When thinking about social issues, individuals consider and reconcile the various features of each issue to form their judgments, a process referred to as ‘coordination’ in social domains theory (Nucci & Turiel, 2009; Turiel, 2008). The process of coordination can take on different forms depending on the information available to the individual at the time of judgment formation as (e.g., his/her understanding of the issue) well as the context in which the judgment is formed (e.g., circumstantial or environmental factors). These elements compose the ‘informational assumptions’ that individuals draw upon when making evaluations (Turiel, et al., 1991). Changes in cognitive functioning as well as the heightened social demands, influences, and consequences that are characteristic of adolescence make reasoning social issues particularly complex. Nucci and Turiel (2009) explain that, during this period of life, individuals expand their ability to recognize and incorporate multiple, and at times conflicting, aspects of a single issue to form their judgments and conclusions. Such variables make research about adolescent social cognition both challenging and compelling. In order to illustrate this complexity of thought and offer insight into how adolescents conceptualize the issue, this study examined adolescents’ judgments and justifications about marijuana use.

This study was based on the proposition that unveiling the factors adolescents use in their thinking and the coordination process involved in this process can provide insight into their judgments about specific issues. Given the instability of public knowledge, perceptions, and attitudes toward the issue of marijuana use and its prevalence among the adolescent population in general (Center for Disease Control and Prevention, 2016), this issue was selected as the topic of research for this project. Specifically, this study was an investigation of adolescents’ judgments and justifications about marijuana use through the lens of social domain theory. Through the use of open-ended questions asking respondents to evaluate the act and their reasons for the evaluations, the study was intended to illuminate how adolescents conceptualize marijuana use. Marijuana use was also compared to other more clear-cut (or prototypical) social issues in order to demonstrate its more ambiguous nature. It was intended that the results of this investigation contribute to the social domain theory body of research, and provide insight into adolescents’ judgments about a complex social issue that is relevant (and arguably consequential) to this period of development.

Findings and Implications

Adolescents’ judgments and justifications of marijuana use. The data partially confirmed the hypothesis that adolescents would show inconsistent judgments of marijuana use. Though they did show a mix of evaluations, respondents indicated more favorable views of the act overall. When asked about the act generally, only 8% of the respondents reported negative evaluations of the act (i.e., 92% reported positive or uncertain evaluations of marijuana use). Not surprisingly, positive act evaluations of marijuana were negatively correlated with responses that there should be a law prohibiting use. Significantly more respondents (68%) disagreed that there should be a law prohibiting marijuana use than those who agreed with such a law. Likewise, most respondents (68%) reported positive evaluations of marijuana use in the case that it was common practice to engage in the act.

When stating their reasons for their evaluations to these questions, respondents most frequently referenced conventional, prudential, and personal domain justifications. Specifically, the Custom/Tradition, Social Coordination, Safety, and Personal Choice categories were most frequently referenced. Respondents also frequently referenced the medical use of marijuana. Justifications to item 1 (general marijuana act evaluations) were considered most representative of the considerations that respondents found to be most relevant to the issue. Based on their responses to this item, considerations about the medical use of marijuana, the safety (or lack thereof) of marijuana, and personal choice to engage in the act were most salient to respondents' reasoning.

The other items in the marijuana use item set asked respondents to reason about specific conditions such as legality and common practices, and justifications to these items often referenced such considerations. For example, justifications for item 2 (legality/illegality evaluation) frequently referenced the Authority category, justifications for item 3 (presence/absence of age law evaluation) frequently referenced the Authority and Age Contingency, and justifications to item 4 (common/uncommon practice evaluation) frequently referenced the Custom/Tradition category. Notably, however, the Safety and Personal Choice categories were consistently the next most frequently referenced justifications for each of these items. This finding as well as findings regarding justifications provided for item 1 suggest that safety and personal choice considerations were paramount to this sample's reasoning about marijuana use. This proposition is supported by results that likewise suggested that prudential reasons were most frequently referenced; this justification was significantly more likely to be used than personal or moral justifications, and the personal domain was significantly more likely to be referenced than the moral domain.

Judgments of marijuana use for adults. Results confirmed the hypothesis that adolescents reason about marijuana use by adults differently from how they reason about marijuana use by adolescents. Respondents were significantly more likely to provide positive evaluations of marijuana use under the age contingency condition than when generally asked about marijuana use. There was a 23% increase (from 57% to 80%) in respondents' positive evaluations of the act under the age contingency condition than in their general evaluations of the act. Furthermore, respondents who initially had uncertain evaluations or negative evaluations of marijuana use seemed to be influenced by the added age contingency placed on the act: respectively 75% and 77% of respondents who had initially provided uncertain/mixed evaluations and negative evaluations of marijuana use shifted to positive evaluations of the act under the age contingency condition. These results suggest that an age law for marijuana was impactful to their evaluations about the acceptability of use. Justifications to this item supported this assertion, as respondents often stated that individuals 21 and older are "mature" and "more responsible" and thereby better able to make decisions about engagement in these types of activities. Respondents also frequently compared marijuana to alcohol when responding to this item and stated that the two substances are similar and should therefore be treated in a similar fashion.

These findings are interesting to consider in the context of timing of data collection for this study: The administration of the study took place nine months prior to the November 2016 election in California (the state where the study was conducted), which resulted in the

legalization of the recreational use of marijuana for individuals age 21 and over (i.e., approval of California Proposition 64). The timing of data collection may have played an influential role in respondents' judgments about marijuana use. For example, it is possible that respondents were not only exposed to political advertisements regarding the legalization of recreational marijuana use. Respondents may have even participated in classroom or social discussions about the issue of recreational legalization. It is not possible to know whether and to what extent such factors impacted these respondents' judgments about marijuana use in the present study. However, such potential influences are important factors to bear in mind when considering the present study results (see 'Limitations of the Study and Recommendations for Future Research' section below for further discussion).

It is noteworthy that, as mentioned, the age contingency condition yielded the most positive evaluations of marijuana use (80% positive evaluations) in this item set. These mostly positive evaluations of marijuana use under this condition suggest that the age of the user is indeed an important factor in respondents' judgments of the act. Moreover, given that this legal age condition has components of both conventional (e.g., legality) and prudential (e.g., maturity/responsibility) considerations, these findings have implications for the social domains that the respondents seemed to find most relevant to marijuana use; that respondents were significantly swayed toward positive evaluations of the act under this condition indicates that respondents find the conventional and prudential domains particularly relevant to their evaluations. Domain reference results suggesting that respondents provided significantly more prudential and conventional domain justifications in their responses to the marijuana item set provides further evidence that these considerations were particularly impactful to this sample's reasoning about marijuana use.

Criterion judgments regarding to marijuana use. Respondents' conceptualization of marijuana use regarding criterion judgments was determined through an assessment of their general act evaluations of marijuana use and through questions asking about marijuana use given specific conditional factors (i.e., the presence/absence of a law prohibiting use and the commonality or lack of commonality of use). Response patterns suggested that criterion judgments associated with the moral domain were not applicable, as the vast majority of respondents did not generally evaluate the act as wrong, nor did their evaluations necessarily indicate that they think of the issue as independent of law/rules/authority or common practice (one of the criterion judgments associated with moral domain issues, according to social domain theory).

These results contrast with results from the studies conducted by Abide et al. (2001), Amonini and Donovan (2006), and Kuther and Higgins-D'Alessandro (2000), which suggested that participants frequently or primarily evaluated marijuana or drug use as a moral issue. However, as was discussed in the review of the literature, these studies did not distinguish prudential considerations from moral, conventional, and otherwise personal ones when asking participants to make their evaluations; participants were asked to classify issues within the moral, personal, and/or conventional domains only. The lack of prudential domain differentiation may have confused their findings, as participants may have been thinking in terms of safety and harm when evaluating substance or marijuana use as "wrong regardless of existing laws" (Abide et al., 2006) or as "morally wrong" (Amonini & Donovan, 2006; e.g., it is wrong to engage in acts that

are harmful to oneself). Separating the prudential domain from the others allowed for more accurate inferences to be made from the findings of the present study than those of such previous research.

The response patterns from this study further suggest that conventional criterion judgments were less relevant to marijuana use evaluations than other considerations may have been. Respondents provided similarly mixed responses (i.e., no significant differences between the number of positive, negative, and depends evaluations) when asked about the acceptability of use in the presence *or* in the absence of a law prohibiting use. This suggests that the condition of rules or laws against marijuana were not significantly influential to their evaluations (i.e., the posed condition of the presence or absence of a law did not significantly sway respondents' evaluations in the negative or positive direction). Context specificity (another feature of conventional domain criterion judgments) also seemed uninfluential to their judgments. This was evidenced by results showing no significant shifts in respondents' evaluations of marijuana use under the common practice condition proposed; a statistically significant majority of respondents who were asked to consider this condition maintained that use would be all right even if was not commonly practiced or accepted (only 25% of respondents who initially provided positive evaluations of marijuana in the case that it was commonly practiced shifted to a negative evaluation of the act under the condition that it was not commonly practiced). Taken together, these results suggest that marijuana use does not seem to meet the criterion judgments found to be associated with the moral and conventional domains. The *lack* of applicability of the moral and conventional criterion judgments is in turn suggestive that the personal domain (i.e., non-moral issues that are not part of the conventionally regulated system) is most closely characteristic of the marijuana use issue. Findings suggesting that personal domain criterion judgments were prominent in respondents' reasoning about marijuana are consistent with previous research likewise suggesting that adolescents primarily evaluated substance use within the personal domain (e.g., Kuther & Higgins-D'Alessandro, 2000; Nucci et al., 1991).

Informational assumptions about the harm of marijuana use. Informational assumptions are the reasons or evidence that individuals point to when justifying their evaluations of an issue (Turiel, et al., 1991). In other words, individuals' understandings of an issue are based on the informational assumptions that they have come to associate with the matter, and such understandings are utilized when reasoning about it. It is often the uncertainties of the informational assumptions associated with non-prototypical social issues that give them their ambiguous character, and in turn result in inconsistent judgments of these issues. Results from this study provide evidence suggesting that informational assumptions about the harm involved in marijuana use were related to respondents' evaluations of the act. Results indicated that the significant majority of respondents (56%) held informational assumptions that frequent marijuana use causes physical or psychological harm to the user. The hypothesis that informational assumptions about the harm of using marijuana would be associated with responses to general marijuana act evaluations (responses to item 1) was supported. Though small in number (n=8), all individuals who reported that marijuana use was not all right were more likely to report that use causes harm, implying that the harmfulness of marijuana use contributed their negative initial evaluation of the act.

The impact of informational assumptions about marijuana use harm (or lack thereof) on respondents' judgments is further supported by the finding that 74% of those who provided uncertain evaluations of marijuana use when generally evaluating the act also reported that frequent marijuana use causes harm. This finding implies that beliefs about the harm involved in marijuana use may have contributed to these respondents' negative general evaluations about the acceptability of use. The reverse finding likewise suggested that informational assumptions about harm play a role in evaluation judgments about marijuana use: Beliefs about the *lack* of harm involved in use also had an impact on evaluations, as those who reported positive evaluations of marijuana use were less likely to report that marijuana use causes harm. Specifically, of those who said that marijuana use is all right, only 38% reported thinking that use causes harm. This is in contrast to the 74% and 100% of the respective uncertain and negative evaluators of marijuana use (responses to item 1, general act evaluation) who reported that use causes harm.

The impact of beliefs about harm on evaluations about marijuana use was further assessed through the manipulation conditions that followed the general question about marijuana use. It was hypothesized that, when asked about the acceptability of use under the condition that it *is not* harmful, respondents would be more likely to evaluate the use of marijuana positively. Conversely, it was hypothesized that, when asked about the acceptability of use under the condition that marijuana use *is* harmful, participants would be expected to provide negative act evaluations. Results partially supported these hypotheses. Respondents who reported that frequent marijuana use harms the user were significantly more likely to evaluate use as all right under the condition that it was conclusively determined to be safe for the user. However, the condition of harmfulness did not seem to have a significant impact on the evaluations of the acceptability of marijuana use by those respondents who originally reported that frequent marijuana use *is not* harmful. Though more respondents provided negative evaluations of marijuana use under the condition that it was determined conclusively to be harmful, the effect was not significant (i.e., evaluations were relatively mixed, or not significantly more negative). This may have been due to other considerations that outweighed the consideration of harm and led these respondents to maintain that marijuana use is all right even if it was certainly harmful to the user (see the Information Assumptions subsection below for further discussion).

Comparison of marijuana use to prototypical issues. As expected, respondents reported significantly different evaluations of the stealing and music issues and justified their evaluations with moral and personal reasons, respectively. Under each of the proposed conditions (general evaluation, age contingency condition, common practice condition), stealing was consistently evaluated negatively and music was consistently evaluated positively. Similarly, results showed significant differences between judgments of the legality of these issues: All the respondents agreed with a law against stealing and none agreed with a law against purchasing music.

The results mainly supported the hypothesis that judgments about marijuana use contrast with judgments about the prototypically moral and personal issues. Although respondents' marijuana use evaluations clearly contrasted with their consistently negative evaluations of stealing, results indicated that, like their evaluations of the music items, respondents were significantly more likely to report positive evaluations of each marijuana use item (i.e., general evaluation, age contingency condition, common practice condition). Notably, however, their

positive evaluations of marijuana use were not as consistent as their evaluations of purchasing music. Whereas all respondents provided positive evaluations of the general music question (i.e., purchasing music is all right), only 57% of the sample provided a positive evaluation of the general marijuana question (35% provided mixed, or *depends*, evaluations of the marijuana item).

Respondents' evaluations of each of the additional questions about purchasing music were likewise more consistently positive than their evaluations to the same questions posed about marijuana use. For example, almost all evaluations of purchasing music under the common practice condition were positive, whereas responses about the acceptability of marijuana use under the common practice condition yielded only 68% positive evaluations (a quarter of respondents maintained that marijuana use would not be all right and 12% provided mixed or uncertain responses about marijuana use under this condition). Similarly, though none of the respondents agreed with a law prohibiting the purchase of music, 30% agreed with a law prohibiting marijuana use. These differences suggest that, despite respondents' significantly more favorable views toward the marijuana items (as with the music items) than the stealing items, evaluations of the marijuana use items were not as overwhelmingly positive as they were to the music issue. This lends support to the hypothesis that marijuana is a more ambiguous social issue as compared to the purchasing music and the stealing issues that show the more consistent response patterns expected of prototypically personal and moral issues.

The hypothesis is further supported by comparing findings from the items aimed at assessing criterion judgments associated with prototypical issues to similar items regarding the marijuana use issue. Results generally followed expected patterns. Significantly more respondents judged stealing as not all right 1) in general (94% negative evaluations), 2) in the case that it is legal for those ages 21 and older (91% negative evaluations), nor 3) if it is a commonly practiced act (87% negative evaluations). Moreover, all the respondents reported that this act should be not be legal. That the significant majority of evaluations remained negative despite these added contingencies is indicative of the moral reasoning about this issue (i.e., meeting the obligatory, non-alterable, and generalizable criteria).

Responses to the music items were somewhat more variable than responses to the stealing items. This was primarily due to respondents' compliance with the legal contingencies posed. Though still significantly higher than those who reported negative or mixed evaluations of the act, fewer (62%) respondents maintained that purchasing music would be acceptable even if there was a law prohibiting the act. Some respondents (18%) did, however, disagree with the acceptability of purchasing music if there was a law prohibiting the act. These respondents typically cited legal reasons for their negative evaluations (i.e., if it's illegal then it's not all right), but often also stated that such a law would be unfair or unwarranted. These results suggest that, while most respondents thought of music-purchasing as a non-moral issue that should not be part of the conventionally regulated system (i.e., personal domain criterion judgments), some felt that the legal prohibition of an act (though unfair) was enough to make the act unacceptable.

Responses to the criterion judgment questions for the stealing and music issues were compared with similar questions about marijuana use and were expected to demonstrate differences. It was hypothesized, that because marijuana use is an ambiguous social issue, there would be greater variability among evaluations of this issue under the various contingencies than

among evaluations of the stealing and music issues. This hypothesis was partially supported. Respondents provided a mix of positive, negative, or depends evaluations of marijuana when asked to consider whether marijuana use would be all right in the presence of a law prohibiting use, or in the absence of a law prohibiting use. This variability in evaluations (i.e., similar numbers of positive, negative, and depends responses to the legal contingency items) contrasts with findings from the stealing and music items (i.e., prototypical issues), which respectively showed significantly higher negative and positive evaluations despite the legal contingency conditions. This suggests that respondents' evaluations of marijuana use were more susceptible to conditions of legality. On the other hand, respondents maintained positive evaluations of marijuana under the common practice condition posed; significantly more respondents reported that marijuana use would be all right even in places where it was *not* commonly practiced. Taken together, these findings suggest that the legality of marijuana showed a greater impact on their positive evaluations (evaluations about use went from being significantly more positive under the general condition to a mix of positive, negative, and mixed evaluations under the legal contingency conditions) than did the common practice condition (responses continued to be positive regardless of the common practice conditions placed on the act).

A review of respondents' justifications also provided evidence for the hypothesis that marijuana use is an ambiguous issue that contrasts with prototypically moral and personal issues, which are more consistently judged within their respective domains. As expected, evaluations of stealing were explained by references to the moral domain justifications (i.e., Justice and Rights, Welfare, and Moral Obligation). The music items, on the other hand, were mostly justified by references to the Personal Choice category. Comparisons of these effects were significant; that is, the moral domain justifications were more likely than expected to be referenced for the stealing items than for the marijuana use or music item sets, and the personal domain justification was more likely to be referenced for the music items than for the marijuana use or stealing item sets.

In contrast to the stealing and music items, justifications for marijuana use items showed greater heterogeneity (i.e., crossed the social domains of reasoning), thereby suggesting the ambiguity of the issue. Whereas justifications for the stealing and music items were significantly more likely to reference the moral domain and the personal domain, respectively, justifications of marijuana use, were equally as likely to reference the prudential and conventional domains. These findings are generally consistent with results from previous research suggesting that adolescents report a mix of domain considerations when reasoning about marijuana or drug use (e.g., Killen et al., 1991; Shaw et al., 2011).

Moreover, marijuana use justifications spanned a greater number of justification categories; considerations of the medical use of marijuana, the commonality or acceptability of marijuana use practices, the system of shared expectations around use, self-imposed physical consequences related to marijuana use, and individuals' preferences and rights to choose were all frequently referenced when reasoning about marijuana use. This is in contrast with the stealing and music items set that showed considerably higher Justice/Rights justifications and the Personal Choice justifications, respectively. Findings from the present study thus suggest that marijuana use is an ambiguous social issue that elicits multi-domain considerations. These multi-

faceted considerations may in turn result in more variable judgments of this issue than of prototypical issues.

Unexpected Findings

Some results were inconsistent with hypothesized findings or otherwise were surprising. Overall, respondents in this sample provided a higher number positive evaluations of marijuana use across the survey's proposed questions/conditions. Though evaluations of marijuana use were not as homogenous as they were for the stealing and music issues, that respondents provided significantly more positive evaluations of marijuana use across this item set was somewhat surprising. Respondents were expected to report greater variability in their evaluations to these items, especially to items proposing breaks from conventional norms (e.g., absence of common practice).

Respondents' positive evaluations of marijuana use under the absence of common practice condition were particularly surprising; evaluations of marijuana use did not significantly shift in the expected direction (i.e., toward more negative evaluations) with the introduction of this condition. While some respondents reasoned that it is important to maintain shared expectations and avoid disrespecting others by engaging in acts considered inappropriate or unacceptable in that context, the majority did not think that the absence of commonality/acceptability necessarily made the act not all right. This suggests that, for this sample of adolescents, these considerations were insufficient for a negative act evaluation. However, as discussed above, the legal status of the act did effect evaluations in the expected directions.

Certain results from the harm manipulation conditions were also particularly interesting. For the respondents who believed that marijuana use was not harmful, the hypothetical condition of the certainty of harm did not have as significant of an impact on act evaluations as expected: Responses to this item were mixed, suggesting that the certainty of harm was not enough to result in significantly higher negative act evaluations as was expected. However, it is important to note the mixed evaluations of marijuana use under the condition of certain harm did in fact contrast with respondents' initial general evaluations of marijuana use, which was overall significantly positive. Thus, though not enough to significantly sway the response pattern in the negative direction, the mix of responses to this item (i.e., similar numbers of positive, negative, and depends responses) does suggest that the addition of the harm condition had some degree of impact on evaluations.

Theoretical Implications of the Findings of the Present Study

The present study was founded on two primary concepts from social domain theory: that some social issues are multi-faceted (non-prototypical) and that informational assumptions play an essential role in judgment formations (Turiel, 1983; Turiel et al., 1991). These concepts provide structures for understanding the process of adolescents' reasoning about non-prototypical (or ambiguous) social issues and the bases for their judgments about these issues. The findings from this study demonstrate adolescent reasoning about 'ambiguous' issues, as well as the role of informational assumptions in reasoning about social issues relevant to their age-group (e.g., the use of marijuana).

Judgments about ambiguous social issues. According to social domain theory, the adolescent period is one in which individuals expand their capacity for incorporating and assimilating the myriad of facets that may be involved in a single issue (Nucci & Turiel, 2009). These multiple facets may be considered and weighed against one another to arrive at a judgment that accounts for the various circumstantial components of the issue: “Decision-making involves weighing and balancing different considerations and goals in particular situations. The decision-making process is not bounded within a domain, but includes a coordination of different domains like morality, prudence, convention, and personal jurisdiction. A variety of judgments, which coexist across ages, are brought to bear in making decisions” (Turiel, 2008, p. 268). Thus, there are processes of coordinating social concepts that can take many forms depending on the time and/or circumstances in which the issue is examined and on the salience of the various facets the individual has come to associate with the issue.

The results of this study suggest that there is need for further research into the coordination processes undertaken when reasoning about ambiguous issues like marijuana use. Greater understanding of how individuals coordinate the various facets of issues can offer insights into relative the salience and impact these facets have on judgments, and ultimately, behaviors. The multiple cross-domain justifications adolescents frequently provided for their evaluations, and the shifts that took place in their evaluations as various hypothetical conditions were placed on the issue, were indicative of the factors associated with issue for these respondents. It may be that these respondents balanced these considerations against one another to form a judgment. Not only did respondents often recognize and explicitly state that there were various factors that should be considered when justifying their responses, but they at times were unable to settle on a positive or negative evaluation (i.e., they would instead report that the acceptability of the act would *depend* on different, sometimes opposing factors that appeared nearly equal in importance according to their reasoning). Moreover, their statements typically communicated that the circumstances that were posed in the contingency questions (e.g., legal age or common practice of the act) were influential to their reasoning and judgments, or were at least considered and then dismissed as less crucial to their than other relevant factors. These qualitative components of the findings (in addition to results suggesting that the marijuana use item set had a very different profile of response patterns than the prototypical moral and personal issues that were included as points of comparison) may be indicative of the composition of the coordination process involved in these adolescents’ reasoning.

Informational assumptions. Respondents referenced considerations that spanned the social domains when judging marijuana use. This was suggestive of the ambiguities involved in this issue, especially as compared to their more homogenous judgments of the prototypically moral issue (stealing). As reviewed in the Introduction, Turiel et al. (1991) explain that the uncertainties of the differing assumptions associated with these non-prototypical issues gives them their ambiguous character. Accordingly, it was asserted at the start of this dissertation that, because of the ongoing changes in the public’s knowledge about and attitudes toward marijuana use, the informational assumptions that individuals maintain at the time judgment are important for understanding their reasoning and ultimate evaluations of the issue.

To gain insight into their informational assumptions about marijuana use, respondents were asked to evaluate the act if it was determined to be safe or determined to be harmful.

Results provided support for the proposition that the types informational assumptions maintained and the way these assumptions are understood are integral to individuals' ultimate judgments. The introduction of the 'lack-of-harm condition' to respondents who had initially stated a belief in harmfulness resulted in a significant positive shift. The reverse was also true (but to a lesser extent): Respondents who had stated a belief in the safety of marijuana use were somewhat less likely to provide positive evaluations of use after being introduced to the proposition that use was harmful. These findings suggest that informational assumptions about the harm (or lack thereof) had considerable effects on respondents' judgments about marijuana use.

Importantly, not all the respondents who were asked to consider marijuana use under the proposition that use was harmful were swayed toward negative evaluations of marijuana use. Nearly half (44%) of these respondents (i.e., respondents who had previously indicated a belief in a lack of harm) provided positive or mixed/uncertain evaluations of marijuana use even under the condition of definite harm. This may have resulted for various reasons, such as respondents' weighing of the harm factor against other relevant considerations. For example, justification results suggest that respondents' support for the medical use of marijuana and/or for an individual's right to choose was a prominent consideration in their reasoning (i.e., high number of Medical Purposes and Personal Choice justifications). Such considerations may have ultimately outweighed concerns about the harm involved in use. Thus, findings indicating shifts in marijuana act evaluations under the condition of harm or lack thereof, as well as findings suggesting that the certainty of harm wasn't necessarily sufficient for all respondents to evaluate the act negatively demonstrate the important role informational assumptions play in judgments of ambiguous social issues. Moreover, these findings imply that the uncertainties about the facts regarding the safety of marijuana use, as well as general shifts in the public's perceptions of and attitudes toward the issue (discussed below), may play a significant role in how adolescents evaluate this issue.

Limitations of the Study and Recommendations for Future Research

The study's sample. Because the data for this study were gathered through a convenience sampling of students from multiple periods of the same course in a northern Bay Area school, the generalizability of these findings to the larger adolescent population is limited. It is possible that factors such as respondents' city of residence, particularly their location in the Bay Area of California (a region commonly known to hold more progressive positions on social issues), may have been critically influential to respondents' response patterns (e.g., their more favorable evaluations of acceptability marijuana use and their considerations of the medical uses of the drug). A similar study conducted with adolescents of the same age in a more politically conservative area of the United States (especially in a state that has not yet legalized even the medical use of marijuana) may have yielded a different pattern of findings. Moreover, because respondents were all enrolled in the same course, factors like the academic material previously covered in the course or the group's shared perspectives or experiences may have also contributed to their response patterns. Future studies that include samples of students from various schools or courses in multiple regions of the country would be valuable for improving the generalizability of this study and serving as comparisons for the current findings.

Relatedly, it is important to consider the impact of cohort effects on this study's results. Changes in public perceptions of marijuana, the media's presentation of the safety, commonality,

and general acceptability of marijuana, as well as many other considerations have been (and continue to be) impactful to adolescents' judgments about this issue. The present study attempted to account for such unknowns by avoiding forced-choice methodologies (e.g., multiple choice survey) and instead using a short-answer approach to data collection. However, taking this approach was not necessarily a sufficient means for accounting for the depth and breadth of factors that may have influenced this sample's judgments, including factors that respondents may not have been conscious of or able to articulate. Future research may benefit from using an interview approach for data collection to gain a degree of clarity about the roles of these variables in adolescents' judgments.

Also because of the ongoing changes in societal perceptions and attitudes toward marijuana use, it may be that these respondents' judgments about the marijuana use issue would be unstable over time. It is possible that as the research, public perception, and legal status of marijuana change over time, so will judgments about the issue. As an example, the data for this study were gathered before a pivotal election (November 2016) determining the legality of recreational use of marijuana for individuals 21 years of age or older in the state where the data for this study were gathered (California; Proposition 64). Although a significant number of the respondents in this study (80%) already indicated positive views toward marijuana use under the condition of a legal age (i.e., the age contingency condition), this kind of significant actual change in legal status has an unknowable impact on judgments; it is likely that such a change would have an impact on respondents' judgments about marijuana use. These types of societal shifts, as well as other contextual caveats, make conclusive determinations about judgments of marijuana use challenging. Accordingly, the present study can be considered a snapshot of a specific population's judgments about this issue at a specific time. Ongoing research investigating changes (or stability) in judgments about marijuana use over time could help elucidate any changes in the controversial nature of various other ambiguous social issues like marijuana use (e.g., childhood vaccinations, 'Lesbian, Gay, Bisexual, Transgender and Questioning,' or 'LGBTQ' issues, etcetera).

Choice of comparison issues. The stealing and purchasing music issues were selected as prototypically moral and personal issues to serve as points of comparison to the marijuana issue (which was hypothesized to be an ambiguous social issue). The expected pattern of results emerged from the data, showing that stealing was consistently evaluated negatively and justified with moral domain justifications, music purchasing was consistently evaluated positively and primarily justified with personal domain responses, and evaluations of marijuana use were more mixed and showed justification variability. It can be argued that the consequences related to a prototypically moral issue like stealing (or other prototypically moral issues, such as murder or slavery) are more consequential than any potential morally-related consequences of marijuana use. For example, the stealing issue calls to mind concerns about the welfare of others and moral obligations in general. Though these considerations seem at first to stand in contrast to considerations regarding marijuana use, a review of respondents' justifications provides evidence suggesting that the marijuana use issue also has features of such prototypically moral issues.

Results from the present study indicated that, though they were not prompted to consider the medical use of marijuana, respondents frequently referred to this consideration. Respondents who provided Medical Purposes justifications often stated that marijuana could be beneficial for

the wellbeing (or welfare) of individuals who benefit from its use for medical reasons and that it therefore would be unfair or unjust to disallow its use. In fact, as previously explained, justifications referring to medical uses would be classified under the Welfare justification category of the moral domain (but were treated as distinct for informational purposes). Thus, this consideration suggests that not only is marijuana use relevant to the moral domain, but is perceived to have critical ramifications on the lives of others in similar ways to other more typically moral issues such as stealing.

In addition to considerations of the medical benefits of marijuana use, respondents also made frequent references to personal choice justifications when explaining their reasoning. Though these responses were coded as personal domain justifications, respondents' arguments when stating this justification frequently referred to the importance of the individual's right to choose what he/she does with his/her mind and body. Arguably, this line of reasoning may have been represented in the Justice/Rights category of the moral domain as many respondents asserted that taking away one's right to choose to use (or not use) marijuana was akin to taking away any other personal freedoms. These examples are provided to demonstrate that, in some ways, individuals have come to view marijuana in terms of morally-relevant consideration like welfare, justice, and rights. Accordingly, comparing a multi-faceted issue like marijuana use to a prototypical one like stealing helped provide insight into the salience and importance of different informational assumptions adolescents draw upon and coordinate in the process of forming judgments about social issues.

Interestingly, whereas some respondents primarily referred to the importance of having the right to choose whether to use marijuana (Personal Choice justification), others found this justification less weighty in their evaluative process. For example, results suggested that respondents were in fact more likely to reference prudential as well as conventional considerations when justifying their responses to the marijuana use items. This stood in contrast to their primarily personal domain justifications for the music item set. Their justifications to the music items, as well as their consistently positive evaluations of the act of purchasing music (despite the various conditions proposed), provided a point of contrast to their more variable evaluations and justifications of marijuana use. Comparisons of the prototypically moral and personal issues selected for this study (i.e., stealing and music) thus provided greater clarity about the differences between adolescents' conceptualizations of this multi-faceted/ambiguous social issue (marijuana use) and their understanding of other more unequivocal (or prototypical) social issues. Accordingly, future research in this field may likewise benefit from the inclusion of such prototypical issues to allow for comparisons and deeper insights into the topic issue.

Item specificity considerations for future research. Additional noteworthy considerations for future research emerged from this study's results. The high number of references to the medical use of marijuana was an interesting finding from this study. Because of the relative prevalence of this consideration among the respondents in this sample, as well as its the moral relevance (i.e., consequences to the welfare of others), study-design that distinguishes the medical use of marijuana from use for recreational reasons may prove to be worthwhile in future research on this issue. The absence of a distinction between these two different uses of marijuana seemed to cause uncertainty regarding the basis for some of the positive evaluations of marijuana in the present study. For example, it was unclear when and to what extent

respondents' positive evaluations of marijuana use were based on considerations of medical use, recreational use, or both. Making this distinction would therefore provide more constructive information about judgments and further elucidate their reasoning about the issue.

Additional questions teasing apart adolescents' judgments about the harm involved in marijuana use and about the age at which they are more or less likely to consider use acceptable would likewise provide valuable data on their perspectives on the issue. The present study asked respondents whether they thought that *frequent* marijuana use causes physical or psychological harm to the user (to which most respondents provided an affirmative responses). Future research may consider the inclusion of additional questions about whether respondents think *any* use causes harm and/or questions about how much use is thought to be associated with what degree of harm.

Moreover, additional open-ended questions about the age at which respondents think marijuana use is acceptable (if at all) would add valuable information regarding their reasoning about marijuana use (and perhaps the use of other substances). Respondents at times reported that setting the legal age for marijuana at 21 would be appropriate because development is generally complete by this age, because adults of this age are mature and responsible enough to make their own choices about use, and because the effects of marijuana use are comparable to that of alcohol use so these substances should be treated similarly. Such considerations entice further questions about how adolescents would evaluate and reason about marijuana use at different ages (e.g., age 13 versus 18 or 18 versus 21). Thus, questions asking respondents to distinguish between the specific purpose of use, frequency of use, and the user's age would provide further clarity into results and allow for greater insights into adolescents' reasoning about this issue.

Concluding Comments

As the field of education and psychology has grown and research on child development has advanced, so has our understanding of adolescent cognition. In many ways, adolescents are still children who are developing their understanding of their social worlds by assimilating new information with old and by reconciling the inconsistencies that arise. With new experiences and with new knowledge, thinking becomes more complex and judgments more nuanced (Nucci & Turiel 2009). Transitions in adolescents' social world, including advances in research, shifts in public policy and perception, and various other contextual changes in which adolescents function have important effects on how they conceptualize and reason about social issues.

In the present study, adolescents' judgments and justifications about one social issue in particular, marijuana use, was investigated using the social domain theory framework. Results supported the hypothesized ambiguity of this issue and demonstrated the complexity in adolescent reasoning about the act. Multiple considerations including the prudence of use, individuals' prerogatives about use, laws prohibiting use, as well as consequences to others if use was prohibited (i.e., welfare concerns related to medical uses for marijuana) were some of the many factors respondents incorporated into their evaluations as they judged marijuana use. These considerations were not only indicative of respondents' informational assumptions about marijuana use, but also of the degree of salience and relative impact of each consideration on their ultimate judgments.

Research about the features of marijuana use that adolescents currently find to be relevant can in turn be instructive for educating this population about such risk-taking behaviors. For example, studies on ambiguous and relevant social issues can inform the development of prevention and intervention programs that aim to reach young adults by offering information that is both meaningful (relevant) and factual. As was demonstrated by the respondents in this study, the facts or informational assumptions that adolescents maintain about an issue are indeed impactful to their subsequent judgments about the acceptability of the act. Accordingly, furthering our understanding of adolescents' conceptualizations of social issues can help inform how we approach and educate youth. In turn, such advances can have consequential benefits for adolescents' development and overall well-being.

“There is in every child at every stage a new miracle of vigorous unfolding.”

- Erik Erikson

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Appendix A: Participant Consent

Consent to Participate in Research

STUDY TITLE: *Adolescent Evaluations of Marijuana Use*

Introduction and Purpose

My name is Mahsa Nouri. I am a graduate student at the University of California Berkeley working with my faculty advisor, Professor Elliot Turiel, in the Graduate School of Education. I would like to invite you to take part in my research study regarding teenagers' judgments and evaluations of marijuana use.

Procedures

If you agree to participate in my research, you will be given a questionnaire to complete at the present time. The questionnaire will have questions about whether and why you think marijuana use is all right or not all right, and whether and why you would think differently under certain circumstances, such as marijuana being legal to use. There will also be additional questions about what you think about the act of stealing (someone taking something that is not theirs) and about how one uses one's allowance money. The questionnaire will likely take the whole class period (about an hour) to complete. Once you turn in your completed questionnaire, you will be all done; I won't be asking you to do a follow-up of any kind. If, at any time, you decide that you don't wish to continue with the questionnaire, you can let me know you that wish to discontinue your participation and hand in the questionnaire, which I will safely discard within a few hours.

Benefits

There is no direct benefit to you from taking part in this study, but you might enjoy thinking about the issues that are presented and expressing your opinions about the issues. My hope is that this research will help grow our scientific knowledge about how individuals your age think about marijuana use, as well as other issues. This knowledge can potentially help improve our understanding of how people think about and understand social issues.

Risks/Discomforts

I don't expect that any of the items on the questionnaire will make you feel uncomfortable or upset. But, in case that does happen, please remember that you are free to decline to answer any questions you don't wish to, or to stop your participation. As with all research, there is a chance that confidentiality could be compromised; however, we are taking precautions to minimize this risk by keeping all the questionnaires anonymous and safely stored.

Confidentiality

Your study data will be handled as confidentially as possible. If results of this study are published or presented, no identifiable information will be used. To minimize the risks to confidentiality, you will NOT be asked to provide your name on the questionnaire. This way,

your answers to the questions will be kept anonymous and you will not be linked to your questionnaire responses. Also, all the completed questionnaires will be kept in a safe place and only individuals directly involved in the research will have access to them. When the research is completed, I may save the questionnaires for use in future research done by myself or others. I will retain these records for up to four years after the study is over. The same measures described above will be taken to protect confidentiality of this study data. After this time, I will destroy the completed questionnaires.

Compensation

You will not be paid for taking part in this study.

Rights

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and are free to stop taking part in the project at any time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

Questions

If you have any questions about this research, please feel free to contact me. I can be reached at mnouri@berkeley.edu

If you have any questions about your rights or treatment as a research participant in this study, please contact the University of California at Berkeley's Committee for Protection of Human Subjects at 510-642-7461, or e-mail subjects@berkeley.edu.

Consent

If you agree to participate in this study, please say so. I will be verbally ask you if you are willing to participate in the study and wait for you to say, "yes," before handing you a questionnaire. You will be given a copy of this form to keep for your own records.

Thank you very much for considering being a part of this study. Your participation is a crucial part of this investigation and is greatly appreciated.

Sincerely,

Mahsa Nouri, M.A.

Graduate Student / Doctoral Candidate

Graduate School of Education

University of California, Berkeley

mnouri@berkeley.edu



Appendix B: Assent to Participate in a Research Study

Adolescent Evaluation of Marijuana Use: Understanding Teenage Reasoning about Ambiguous Social Issues through a Social Domain Framework

My name is Mahsa Nouri, and I am a graduate student in the Graduate School of Education at the University of California, Berkeley. I am working with my Professor, Dr. Elliot Turiel, on a research study. I'd like to tell you about this study and ask if you will take part (be a "participant") in it.

What is a research study?

A research study is when people like me collect a lot of information about a certain thing to find out more about it. Before you decide if you want to be in this study, it's important for you to understand why we're doing the research and what's involved.

Please read this form carefully. You can discuss it with your parents or anyone else. If you have questions about this research, feel free to ask me via email (provided below) or in person.

Why are we doing this study?

We are doing this study to find out how teenagers' think about the use of marijuana and why they think that way. This study is not part of your schoolwork, and you won't get grades on it.

Why are we talking to you about this study?

We are hoping that about 60 adolescents will participate in the study. We're inviting you to take part because you are in the age-group (16-19 years old) that we are interested in learning more about and you go to a school where we're doing the study.

What will happen if you are in this study?

If you agree to be in the study and your parents give permission, I will ask you to complete a paper-and-pencil short answer questionnaire during the class period in which you received this form. The questionnaire will have questions about whether and why you think marijuana use is OK or not, and whether and why you would think differently under certain circumstances, such as marijuana being legal to use. There will also be additional questions about what you think about the act of stealing (someone taking something that is not theirs) and about how one uses one's allowance money. The questionnaire will probably take the whole class period (about an hour) to complete. After you're done answering the questions, you will turn the questionnaire in

to me and will be thanked for your participation. That will be the end of your participation in the study; you won't have to do anything else.

If you don't want to be in the study, what can you do instead?

If you don't want to be in the study, your teacher will give you a different activity to work on at your desk while your classmates work on the questionnaire. The activity will likely be work related to the class and will take about the same amount of time as the research activity.

Are there any benefits to being in the study?

There are no direct benefits to you from taking part in this study, but you might enjoy thinking about the issues that are presented and expressing your opinions about the issues. My hope is that this research will help grow our scientific knowledge about how individuals your age think about marijuana use, as well as other issues. This knowledge can potentially help improve our understanding of how people think about and understand different kinds of social issues.

Are there any risks or discomforts to being in the study?

I don't expect that any of the items on the questionnaire will make you feel uncomfortable or upset. But, in case that does happen, please remember that you are free to decline to answer any questions you don't wish to, or to stop your participation all together. As with all research, there is a chance that confidentiality could be compromised; however, we are taking precautions to minimize this risk by keeping all the questionnaires anonymous and safely stored.

Who will know about your study participation?

Only you, your parents, teacher, those in the class with you, and I will know that you participated in the study, but you can tell others about your participation if you choose to. If we publish reports or give talks about this research, we will only discuss group results. We will not collect your name or any other personal information that would identify you, so your participation will be anonymous in this way.

Your study data will be handled as confidentially as possible. If results of this study are published or presented, no identifiable information will be used. Again, to minimize the risks to confidentiality, you will NOT be asked to provide your name on the questionnaire and you will not be linked to your questionnaire responses. Also, all the completed questionnaires will be kept in a safe place and only individuals directly involved in the research will have access to them. When the research is completed, I may save the questionnaires for use in future research done by myself or others. I will retain these records for up to four years after the study is over. The same measures described above will be taken to protect confidentiality of this study data. After this time, I will destroy the completed questionnaires.

Will you get paid for being in the study?

You will not be paid for being in this study.

Do you have to be in the study?

No, you don't. Research is something you do only if you want to. You will not get into trouble and no one will get mad at you if you don't want to be in the study. And whether you decide to participate or not, either way will have no effect on your grades at school.

Do you have any questions?

You can contact me if you have questions about the study, or if you decide you don't want to be in the study any more. My email is mnouri@berkeley.edu.

Thank you very much for considering being a part of this study. Your participation is a crucial part of this investigation and is greatly appreciated.

This study is scheduled to take place on _____, 2015 in your class.

Sincerely,

Mahsa Nouri, M.A.

Graduate Student / Doctoral Candidate

Graduate School of Education

University of California, Berkeley

mnouri@berkeley.edu

ASSENT OF ADOLESCENT (13–17 years old)

If you decide to participate, and your parents agree, please bring this form back to your class with your signatures. We'll give you another copy of this form to keep for future.

If you would like to be in this research study, please show your parent/guardian this form. After talking it over with them, please sign your name on the line below and get your parent/guardian to sign too.

Child's Name/Signature (*printed or written by child*) *

Date

Signature of Parent/Guardian

Date

Appendix C: Study Instrument

STUDY QUESTIONNAIRE

** Thank you for your participation! **

Your age: _____

Your grade: _____

Your sex:

- a. male
- b. female

Circle the letter of the race that best describes you:

- a. White / Caucasian
- b. Hispanic / Latino
- c. Black / African American
- d. Asian / South Asian / Pacific Islander
- e. Mixed

If "mixed" please specify _____

- f. Other:

If "other" please specify _____

Please answer all the questions as completely as you can and to the best of your ability.

1) Is the use of marijuana all right or not all right? Why or why not?

2) Do you think that there should be a law that prohibits marijuana use in this country?

If you answered Yes → go to #2a.

If you answered No → go to #2b.

2a) If there was not law prohibiting marijuana use in this country, would it then be all right or not all right to use marijuana? Why?

2b) If there was a law prohibiting marijuana use in this country, would it then be all right or not all right to use marijuana? Why?

3) Suppose that the majority of people in the United States decided that there should only be a law that allows marijuana use in individuals who are over 21 years old and the law was in effect. Do you think it would be all right or not all right for individuals over 21 to use marijuana if there was this law? Why or why not?

4) Suppose that it was common practice for people to use marijuana in the United States. In that case, do you think it would be all right or not all right to use marijuana? Why or why not?

If you said all right, go to #4a.

If you said not all right, go to #4b.

4a) Would it be all right to use marijuana in places in the United States where marijuana use is generally not accepted or practiced? Why or why not?

4b) Would it be all right to use marijuana in places in the United States where marijuana use generally is accepted and practiced? Why or why not?

5) Do you think frequent use of marijuana causes physical or psychological harm to the user? Why or why not?

If you think it does, go to #5a.

If you think it does not, go to #5b.

5a) Suppose that scientists were able to conclude without a doubt that marijuana use is safe or harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? Why or why not?

5b) Suppose that scientists were able to conclude without a doubt that marijuana use is NOT safe or NOT harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? Why or why not?

6) Is the act of stealing all right or not all right? Why or why not?

7) Do you think that there should be a law that prohibits stealing in this country?

If you answered Yes → go to #7a.

If you answered No → go to #7b.

7a) If there was not law prohibiting stealing in this country, would it then be all right or not all right to steal? Why?

7b) If there was a law prohibiting stealing in this country, would it then be all right or not all right to steal? Why?

8) Suppose that the majority of people in the United States decided that there should only be a law that allows individuals who are over 21 years old to steal and the law was in effect. Do you think it would be all right or not all right to steal if there was this law? Why or why not?

9) Suppose that it was common practice for people to steal in the United States. In that case, do you think it would be all right or not all right to steal? Why or why not?

10) Is using your allowance money to purchase music all right or not all right? Why or why not?

11) Do you think that there should be a law in this country that prohibits individuals from using their allowance money to purchase music?

If you answered Yes → go to #11a.

If you answered No → go to #11b.

11a) If there was not a law prohibiting using allowance money to purchase music in this country, would it then be all right or not all right to buy music with your allowance money? Why?

11b) If there was a law prohibiting using allowance money to purchase music in this country, would it then be all right or not all right to buy music with your allowance money? Why?

12) Suppose that the majority of people in the United States decided that there should be a law that allows only individuals who are over 21 years old to use their money to purchase music. If this law was in effect, do you think it would be all right or not all right to buy music if you were over 21 years old? Why or why not?

13) Suppose that it was common practice for individuals to use their allowance to purchase music in the United States. In that case, do you think it would be all right or not all right to use your allowance money to buy music? Why or why not?

Appendix D: Items 5 and 5a/b Responses

Item 5: Do you think frequent use of marijuana causes physical or psychological harm to the user? Why or why not?

Survey	Response: Yes (Y) No (N), or Uncertain (U)	Justifications
1.	Y	“The heat burns the lungs and kills brain cells”
2.	N	“No, it doesn’t make you physically sick and the amount of marijuana you need to overdose is near impossible. There has never been deaths because of it or health issues unlike cigarettes or alcohol.”
3.	U	“It depends how you use marijuana. If you smoke it can cause lung problems and possible cancer, but psychological harm, no, maybe just being lazy, or not going to school may cause you to loose some education, but not ... like hallucinogens would.”
4.	Y	“I think too much of anything can cause both physical and psychological harm to the user because they can get attached to the marijuana usage causing addiction”
5.	U	“Frequent use causes short term memory loss and may lead to schizophrenia, however frequent use of alcohol is much worse because alcoholic harms the lives of others and are at risk of death; that is not the case with pot.”
6.	Y	“I think it does because of what I’ve been told about the drug. I’ve been told/learned that it has effects on the brain, and though the addiction is not physical, there is psychological addiction that makes the person dependent on the drug.”
7.	Y	“Frequent use of marijuana can cause physical and psychological harm. Regarding physical, that would aim towards lung damage or with psychological the brain would become dependent, causing the user to use bigger usage of the drug.”
8.	Y	“It definitely causes some impaired mental function when someone is high, but doesn’t have awful long-term effects. Although smoking marijuana doesn’t have as obvious physical effects as hardcore drugs, I do believe that it causes a lot of harm to the lungs and the liver.”

9.	U	“I honestly don’t know. It can cause psychological harm when you’re high because of the short-term memory loss and brain cells damage.”
10.	Y	“Yes, it causes physical harm because I have read articles where it kills brain cells which could make you dumb so you wouldn’t be able to succeed.”
11.	Y	“I suppose physical harm could include lung damage from smoke, and I have heard of studies reporting psychological harm in adolescents using marijuana, but I am unsure of the credibility of these sources.”
12.	N	“I don’t think it does or else it would be in the news more often.”
13.	Y	“I suppose that frequent marijuana use could cause physical problems but only due to the smoking aspect being bad for your lungs, not necessarily the marijuana itself. Psychologically, it could cause a dependence.”
14.	Y	“Yes I think it can cause psychological harm because people cant even go a day without it. Imagine a stoner with no weed for like a month. They will go crazy without it.”
15.	Y	“Yes, it allows the user to believe they are doing something correct when they are in fact doing something foolish.”
16.	U	“It all depends on who you are and your lifestyle. If you don’t have a job and are messy, you will become lazy which could be psychological. But as far as physical, not really. Depends on how you are taking it in. Blunt? Yes that’s tobacco too! Smoking out of a can? Yes that’s aluminum! Joints? Using hemp paper, nope, no harm!”
17.	U	“I do not think it causes serious physical harm to users (maybe some psychological such as worsening memory) because though I know plenty of burnouts who do horrible in school and lack motivation for sports there are also people who can handle constant use and still be a productive intelligent person because it just depends on the individual.”
18.	N	“No because you don’t trip off of it. You don’t see things and the only physical thing it does is it makes you fall asleep.”
19.	Y	“I think that people who smoke pot frequently (like every day) do experience harmful effects. To me it makes people lazier and more preoccupied with smoking than responsibilities. Also I don’t like the idea of inhaling anything into your lungs besides clean air.”
20.	Y	“Yes, I think frequent marijuana use causes both physical and psychological harm to the user. If the user of marijuana had no effect on the user, people would not be smoking it because it would not provide the feeling of euphoria.”
21.	Y	“I like to follow a personal golden rule of: “Too much of anything is bad.” Therefore, I believe there has to be some physical and/or psychological harm to

		frequent use of marijuana. If not that, then there surely will be a social harm (ex: prejudice).”
22.	Y	“Yes. I believe it is illogical to deny that marijuana will create user-dependence and addiction. At the very least, it could create short-term health problem that could quickly “snow-ball” as one becomes addicted and uses more often.”
23.	Y	“I know that marijuana causes psychological harm to its user as studies conducted show that marijuana use disrupts learning patterns and impairs long term memory storage.”
24.	Y	“Yes, I think the frequent use of marijuana causes psychological harm because I have seen how friends change, the difficulty they have to focus and how forgetful they become.”
25.	Y	“I know someone who used marijuana can cause both psychological and physical harm to the user. I know someone who used marijuana and hey had used marijuana a lot, they shoplifted, they stopped going to school, and they drank alcohol.”
26.	Y	“Some people can become so addicted to it that it’s not even healthy for them anymore (or at all).”
27.	Y	“Yes, I feel like frequent use will lead to brain damage and lung cancer.”
28.	N	“I don’t think marijuana causes physical or psychological harm to the user because they’ve done lots of studies that prove it doesn’t cause harm.”
29.	Y	“I believe marijuana causes physical harm. Smoking anything is bad for your lungs, and marijuana is shown to hurt brain function.”
30.	Y	“I think frequent use of marijuana causes more psychological harm to the user unless the psychological harm causes physical harm.”
31.	Y	“Yes, you can build up more tar in your lungs than if you were smoking cigs and if you’re a severe smoker you start feeling unfunctional and not like yourself if you don’t smoke.”
32.	U	“I think frequent use can cause harm but there are studies that show that there isn’t that much damage.”
33.	U	“Depends, the age of the user and the health of the user affects all of the possible harm, in most healthy users it wouldn’t cause too much harm.”
34.	Y	“Of course. Basically too much of anything is hazardous to the body, especially any kind of drug.”
35.	Y	“After smoking every day for a long period of time yes and smoke would though and may cause you to be a little slow at stuff also.”

36.	Y	“Yes, I think it would wear down the brain cells and make it harder to sit still and focus. I feel like if you become a really frequent smoker you would become zombie-like.”
37.	U	“It can cause physical harm such as lung damage and cancer but I don’t think it causes psychological harm. I’ve seen it actually help people.”
38.	Y	“Yes any drug causes physical and psychological change to the user. Depends on the person; some are effected negatively, others are never effected.”
39.	Y	“Yes it can. It kills brain cells can cause aging as well as skin or lung cancer.”
40.	Y	“I think that if you’re getting high every day it affects you in mental ways once you’re sober. You start to enjoy the feeling you get and don like the sober feeling quite as much.”
41.	Y	“I think that it can be addictive which I don’t think is good and can be harmful in the long run. Also, can’t it cause lung problems?”
42.	Y	“Yes. I think frequent use can result in laziness, less ambition, and affect situations like the work place. I don’t know about physical damage, but obviously there has to be some result of smoke in the lungs.”
43.	U	“I wouldn’t say harm but it does cause physical sometimes psychological change. By how frequent people use marijuana they can get really skinny or fat because being high causes the munchies. Also, some people who use marijuana so frequently will get so used to it that when they don’t use it will act weird.”
44.	U	“Psychologically yes but no physically because it messes with the mind’s dominance not the body system. It’s natural and was naturally get work of body’s system.”
45.	N	“No it doesn’t casus physical or psychological harm. They might think they need it to be calm or to sleep better but it doesn’t show in the body that anything is affected.”
46.	Y	“I think frequent use of marijuana causes psychological harm because of all the dopamine that’s released. You will stop feeling certain emotions unless you take that drug more often.”
47.	Y	“It does. Many people I hang out with cannot function well without smoking in the morning, at lunch, or before sleeping, so I know it does affect them.”
48.	Y	“Yes because smoking ruins your lungs, and the high can cause lower intelligence rates over time.”
49.	U	“Depends. I believe how a person chooses to make use of their time away from marijuana varies from person to person. Personally, I spend most of my time after school doing homework or smoking marijuana. I am also involved in an internship at a local hospital, and am in several college preparatory programs. I

		manage my time well enough around the time that I spend smoking that I live the same way that those who don't smoke do."
50.	Y	"Yes, frequent use of marijuana causes maybe not physical quite nearly as fast – massive psychological harm to the user. Imagine being given \$500,000 every time you blinked. You would keep blinking wouldn't you? People, I believe, generally think that the drug is not harming them because it makes them feel good. But they must be shown the _____. The thrill of being free to create anything, express anything, see everything. They have to learn that it isn't the only drug that makes a person feel good – that a free will can be the most powerful of all things – the will power to look above the drug."
51.	Y	"Yes. I have personally seen my father struggle with depression, and I believe that this has to do with his history of using drugs like marijuana and cocaine. Also, I know a friend who consumed too much marijuana when eating a pot brownie, and she started shaking uncontrollably, so much so that she went to the emergency room."
52.	U	"It probably does lead to loosing lots of brain cells. I don't think it will cause psychological harm if it's natural, unless it's laced or people add more chemicals to them."
53.	U	"It can cause harm to the user, but I don't know to what extent. I only have experience with occasional use and nothing has happened to anyone. The only thing I have noticed is they get a little out of it."
54.	Y	"I think it causes both physical and psychological harm because it harms the body and gives it negative energy and psychological disorders."
55.	Y	"Yes, I think it does. From what I've heard, though it is less harmful than alcohol or other substances, it still kills brain cells. I have also met/known people who smoke marijuana, and some seem to speak slowly, etc."
56.	N	"No, I've seen many people higher than the Empire State Building and are honestly just lazy or sleepy most of the time."
57.	N	"I don't think it cause any harm. One of the people I know is a frequent marijuana user and he is one of the smartest people at his school."
58.	U	"It's possible. I feel people who more frequently use marijuana depend on it more and get in the habit of using it all the time. I do not believe it causes physical harm."
59.	U	"Depends. I think it can cause a dependency, which isn't good. I think it causes people to not be able to do anything until they've smoked. For example, some people get so dependent they can't have fun without it and I feel like it could cause problems with the people in their life. Physical- no. psychological-some."

60.	U	“Although I think it has addictive qualities, which can definitely be bad, I don’t think the use of marijuana cause any physical or psychological harm to the user.”
61.	Y	“I think the frequent use of marijuana can cause both physical and psychological harm because smoking can get you more tired and out of breath for athletes and cause them to run slower and perform less good. Also psychological ways because you can become paranoid more or addicted.”
62.	Y	“Yes, I think it may harm their lungs but nothing else. Whereas it can psychologically harm a person more because they rather be high all the time than not.”
63.	U	“Not sure because no one has died or overdosed from marijuana but it can change a person’s attitude.”
64.	U	“I don’t think marijuana causes physical harm, but the smoking of it can lead to lung cancer. I think it may cause psychological harm including addiction but not too an extreme where it needs to be illegal.”
65.	U	“I don’t really know because we can help as asthma but I feel like it can also make you lazy.”
66.	Y	“Absolutely, many studies have shown lower IQ and poorer memory with prolonged pot use. Anything that drains your dopamine will make you less able to feel without the drug. It’s addictive and any inhalation of smoke increases cancer risk.”
67.	U	“I think in some cases yes it does. Marijuana is a drug and like all drugs it will make you addicted to it.”
68.	Y	“I think it does causes psychological harm due to having your brain not fully developed.”
69.	U	“I think that completely abusing the substace could eventually cause psychological harm but only if it’s done inappropriately. In other words, if the person mixes it or does it so frequently that there is never a time they are sober.”
70.	U	“Depend. I think it varies by person. Some people have addictive personalities. Regardless, someone shouldn’t be smoking daily. In terms of physical, the paper could lead to lung cancer. It’s not addictive in the same ways other drugs are.”
71.	N	“No I don’t. I’ve never head of anyone getting physically or psychologically harmed from marijuana, and it is used more as a relaxer. I don’t think it is addictive. BUT it could be a gateway drug to try other drugs which are potentially harmful.”
72.	Y	“Yes, but only a tiny bit on your memory and cardio. When people smoke (me) I get tired easy and forget things quickly. But it is safe.”

73.	Y	“Yes, I do think it causes harm to the user in some way. Marijuana is one of the least harmful drugs.”
74.	U	“The only way I think it causes harm is if the user accidentally falls or hurts him/herself when high due to the fact they’re probably tripping out.”
75.	U	“I don’t necessarily think it brings “harm” to the user, but if I had to choose it would “harm” you physically causes you can be overweight and it kills brain cells.”
76.	U	“Depends on how much they smoke daily.”
77.	Y	“Yes, I think it could cause psychological harm because you’re not giving your brain cells time to recover.”
78.	Y	“Honestly, I’m not very educated on marijuana. Obviously, there are some effects that occur from frequent use. I think more susceptibly to lung cancer/problems and addiction, but addiction is less likely. I think it does cause harm, but to the same degree as other substances (smokes, crack).”
79.	Y	“Yes, because I think frequent use of anything can cause physical or psychological harm.”
80.	N	“No because it relaxes you mind and body.”
81.	Y	“I say it causes both physical and psychological harm to the user because smoking makes you a slower thinker and an addict to it. Another reason is that you can develop ugly feature by smoking. For example, have really nasty yellow teeth.”
82.	Y	“Yes because it can become addictive and you are consuming carbon, which harms your lungs.”
83.	Y	“I think so. I see some students that have harder time thinking – they are very slow. They talk slow. In addition, a person I know smokes and one of the things he uses is marijuana. When we did the mile, he had a hard time breathing. Smoking can cause harm to your respiratory system.”
84.	N	“I think marijuana used frequently doesn’t do much harm at all. It calms people for the most part and relaxes them. It may effect your lungs and how well you produce oxygen if you smoke extensively for a years and years. It’s a relatively safe drug though.”
85.	N	“It does not because marijuana doesn’t have any addictive qualities, therefore a user cannot physically or psychologically get addicted. Marijuana doesn’t kill any brain cells nor does it impair someone’s sense of judgment to the point where they want to cause harm to themselves.”

86.	Y	“I do believe that the frequent use of marijuana cause physical or psychological harm to the user. The stoners in my grade definitely lack cognitive thinking skills and always smell of marijuana.”
87.	Y	“Yes because it can cause people to become burnouts and not go out and do something productive. It can make a person lazy and just stay at home all day if they become abusers.”
88.	U	“Depends on the situation. If you are using it a lot for reason then yes, it is hurting your lungs and affecting your minds.”
89.	Y	“Absolutely. I have firsthand seen and experienced the physical and psychological harm that it causes. Poor respiration, health, degraded thought processing, impaired judgment – all harmful effects of marijuana use.”
90.	Y	“Yes frequent use can lead to addiction and you may feel like you need to consume marijuana to function and do simple tasks. It can ruin both your health and your brain.”
91.	U	“I believe that it depends on the person using the marijuana. Some people are extremely motivated while others get sleepy. It also depends on the strain of the marijuana.”
92.	Y	“It can cause psychological harm because people who feel depressed use it constantly and have the need to keep using it. They part is that it kills brain cells.”
93.	Y	“Yes because I have seen the people who have used marijuana and they aren’t acting their usual self.”
94.	Y	“Yes because people can become addicted to it, which can cause major problems in their life.”
95.	U	“Even though my beliefs are strong. I do also believe that it could (not so much physical), but psychologically it could cause harm. Only because there are some types of marijuana that would give you bad trips.”
96.	U	“Depends. It seems pointless when someone is high all the time and has less of a good/bad judgment. I think it could have psychological harm.”
97.	U	“I don’t think it causes physical harm but I do think eventually users become addicted to doing it or the feeling.”
98.	U	“I think taking sleeping pills every night is a bigger harm but marijuana does cause some harm, it kills brain cells.”
99.	N	“No I don’t think that marijuana causes physical or psychological stress, it just gives you a high that allows you to release stress. It’s also not like beer where people get beer bellies.”

100. N “No I don’t think it affects you unless you become an addict and let it affect you.”

Item 5a: Suppose that scientists were able to conclude without a doubt that marijuana use is safe or harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? Why or why not?

Item 5b: Suppose that scientists were able to conclude without a doubt that marijuana use is NOT safe or NOT harmless to the user. In that case, do you think it would be all right or not all right to use marijuana? Why or why not?

Survey	Item 5a response	Item 5a response	Justification
1.	A		All right because it's safe and not hurting anyone
2.		A	If taken in moderation it's ok; compared it to alcohol and cigarettes
3.		U	"I would be less likely to use it. But since there is no study I have come across that has these health effects I don't see much of a problem using it"
4.	A		"If it does not cause harm in any way then it would all right because it would like any other substance, like food."
5.		A	"Right or wrong does not change that no one has ever died because of marijuana and because the government could not tax it; the medical use has vanished though marijuana does serve as efficient medication."
6.	N		"Even if the drug were safe for the user, it would still make them high and they could make stupid decisions that could affect other people, so I would still say it's not ok."
7.	A		Still all right but would increase the number of those who didn't use marijuana because of what scientists said
8.	A		"Yes, it would be okay to use. however, marijuana does have some harmful effects after a long time."
9.	A		"Yes it would be all right. It's not harming us so why would it be bad." "People would still use it. You don't see people not doing heroin or other things when they clearly know it's bad, so they're gonna smoke marijuana no matter what."
10.	A		"Yes it would be okay because it isn't causing harm, so you would just use it to relax, which is ok."

11.	A	“Yes, if marijuana is proved to be safe, it would obviously be all right for use. Refer to my comments about alcohol.”
12.	N	“It would not be all right because it will be a huge danger to society.”
13.	A	“In that case marijuana should be totally legal and using it is all right. This is because it’s safe and has medical benefits as well as it is rather entertaining.”
14.	N	“Still no. What are the upsides of marijuana? They are still getting high and it is still a drug and using a drug is still not worth it because what is the point of it. It maybe harmless but it’s not doing anything for you at all.”
15.	N	“No because although it may be sage, the use of marijuana distracts the user from being focused (ex. School) and they look foolish. Morally, I do not believe it is okay.”
16.	U	“In that case it would come down to are the negatives bigger than the positives? If it was a beneficial medicine, but gave you lung cancer, then it would not be all right. If the death rates were higher than the success rates it would not be all right.”
17.	A	“I think it would be OK as long as the harm only happened after serious long-term use because, let’s face it, in today’s day and age. even a potato chip is deadly after continually being used for an extended amount of time.”
18.	N	“If it’s not safe for us to use then it wouldn’t be all right to use. the reason for this is because it would end up hurting our brains in the later future.”
19.	U	“I think people shouldn’t be getting high every day just like I don’t think people should drink every day. Its all right to use marijuana still, but, I still wouldn’t think it’s all right to use every day.”
20.	A	“...Without the harmful effects of marijuana individuals would be free to use marijuana in their lives.”
21.	U	“It depends. If there is no danger then using it is all right with me if it is also still allowed (by the law and by the policy of the area). I believe, though, that some social harm can happen with the usage. If you’re high, in euphoria, you wouldn’t be trying your hardest in work.”
22.	U	Depends. Human health is only one of the many troubles that marijuana may provide. What if a hard-working middle class family spends all its money on the addicting marijuana. If solid yet

		reasonable regulation of its consumption are in place then it would be all right.”
23.	A	“If scientists were able to prove that marijuana use has no harmful effects using irrefutable, empirical evidence, then my view on marijuana’s effects would change but I would still believe that it’s all right to use marijuana.”
24.	N	“you are still putting substances into your system that you don’t need.”
25.	N	“I feel that marijuana is a gateway drug, and if used recreationally, it could lead to more serious and addictive drugs.”
26.	N	“Marijuana is still a drug. And unless I was in a dying situation where I needed to use it to stay alive, I wouldn’t use it.”
27.	A	“I think marijuana would be the perfect drug if it had no side effects. I would say it would definitely be all right to use the drug but still realizing what it does and that it is not safe to operate any machinery.”
28.	N	“If scientists concluded marijuana isn’t safe I don’t think it would all right to use because it’s harmful.”
29.	A	“It would be all right, but marijuana use would have to be very monitored due to the effect it has while a person is high. DUI’s are still a very serious issue.”
30.	A	“I think it would be all right to use marijuana as long as there are rules just like alcohol (ex: no drinking and driving).”
31.	A	“If they can be 100% sure there’s no harm being caused and the use of it cant be linked to other things, yes it’s all right.”
32.	A	“If scientists were to conclude that, it may change my opinion. But it should still be the person at risk’s choice to do that to themselves. So for me it would be all right, but I wouldn’t do it.”
33.	A	“All right because many use it for medical purposes.”
34.	A	“In that case I think it would definitely be all right as long as it is used in ways not to harm others. Ex. Smoking in an enclosed environment like a restaurant and making other people breathe in the smoke.”
35.	A	“If it doesn’t harm anyone, what is wrong with it?”

36.	A	“Yes because if you can’t overdose, it doesn’t affect you, and it’s safer than alcohol, so why not.”
37.	A	“It would be all right because if someone liked it and it didn’t harm them in any way there would be no reason not to use it.”
38.	A	“Yes because if the user is getting positive effects only then he/she should be able to use marijuana, it’s their freedom regardless.”
39.	N	“No it would not be all right because would still be acting stupid and high all the time.”
40.	?	?
41.	A	“I think it would be all right because if it is harmless and a choice.”
42.	A	“I still think there is an issue with smoking all the time, but it’s not my life to deal with.”
43.	N	“It would not be all right because it’s not safe. Why would anyone put something in their body if they know proven by scientists that it’s not safe.”
44.	Y	“Even if scientists did a study, it’s that person’s right to do whatever makes them happy.”
45.	Y	“Yes it’s all right because then it would be alike with alcohol which is legal and harmful but still used often.”
46.	A	“All right, because it’s not addictive and it’s a stress reliever.”
47.	A	“It would be all right because it is not alright generally because it is harmful and impairs the user and if that was not the case then what the difference if they do or don’t.”
48.	N	“I still think it is not all right because in my religion the use of drugs or alcohol is not okay.”
49.	U	“Depends. In this case, I think using marijuana would be as acceptable or unacceptable as any other substance concluded unsafe. Nicotine has been concluded to have no health benefits, yet it is used by millions of people every day. Since marijuana IS also known to have health benefits and can be medically prescribed, I believe it would be all right to use as any other prescription medication with both harmful and healing effects s used.”

50.	A	<p>“Sure. Go for it. BUT, if marijuana use was completely safe for the user, and causes no harm at all, then no one would use it, because that assumes that there are no effects at all, because dopamine is harmful to the body, but it only comes in a way that we recognize as “good.” If marijuana was confirmed completely safe, then people would become bored of it, or stop using it entirely, because safe and harmless assumes that the drug does nothing at all.”</p>
51.	A	<p>“All right. I believe it is okay for other people to use marijuana because they should be able to make their own decisions, as long as it doesn’t affect others (family, friends, children, etc.). However, I still believe personally that I should never participate.”</p>
52.	A	<p>“Yes, I think it will be all right because if it’s safe and harmless why would it be a problem.”</p>
53.	A	<p>“All right. If there is no danger or harm, I don’t see why it would be problems besides people’s opinions.”</p>
54.	A	<p>“I think it would be all right because if scientists don’t have experimental evidence, we can’t determine whether it is safe or harmless yet, but anyway, it is all right in this case.”</p>
55.	A	<p>“All right. If it is absolutely harmless, then I don’t see a problem. Marijuana’s harmful effects were my main concern.”</p>
56.	?	(answered wrong follow-up item)
57.	N	<p>“If it did cause harm, then I wouldn’t believe that people should use it. What would be the point of damaging your body for a few minutes of relief.”</p>
58.	N	<p>“If scientists could really prove that marijuana was in fact not safe I think that some people would take that seriously and some would still do it. My opinion is no, I don’t think it would be okay if it was proved to be not safe. If it was proved to be safe on the other hand, I would fully support it.”</p>
59.	A	<p>“All right. If the drug has been proven completely safe, then I think it would be okay to use it. If it were proven completely safe, wouldn’t it be the safest drug anyway.”</p>
60.		<p>“If scientists concluded that marijuana is not safe or harmless, then it’s not all right and it should be used. Even still it’s up to the user though, if you want to use it then do ahead.”</p>

61.	“	A	“In this case I think it would be all right to use marijuana because it’s proven to be safe, but if a certain person dos not like its affects they do not have to use it.”
62.		A	“All right. In my experience marijuana can be fun but there’s always a what if but it it’s certified to be safe and harmless then why not?”
63.	“	A	“If you’ll be safe and like smoking marijuana then the consumer would be all right doing it.”
64.		A	“Yes. If it is safe and harmless, I believe it is all right to use. I think we do many other things that are bad for our body. I think it would not hurt us anymore than other things, so yes.”
65.		A	“Yes I do think it would be OK because then people can enjoy what they are doing with weed without harmful side-effects like making you lazier.”
66.		N	“Not all right because the high still impairs you and you could still causes harm to others on the community.”
67.		A	“It would be all right to use it then because scientists found nothing wrong and it was safe to use then what harm would come to you.”
68.		A	“All right because there would scientific evidence.”
69.		A	“I think it would be all right. If anything, scientists have already concluded that it is safe so at this point it’s a matter of convincing the rest of society.”
70.		A	“All right because then it wouldn’t be as big of a deal. There would be no harm in smoking.”
71.		N	“I think it would not be all right to use it then. You shouldn’t put a substance in your body if you know it has harmful effects. It does the person no good, and the cons would outweigh the pros.”
72.		A	“Hell yes. Then it is literally harmless, soda kills more than dank, c’mon. But seriously yes, no bad effects of course it would be all right.”
73.		A	“In my opinion it would be all right but to the law, it wouldn’t be at least that’s what I think.”
74.		N	“If it’s not safe and not harmless the don’t use it.”
75.		?	“It wouldn’t matter because alcohol is the same concept.”

76.	A	“Yes, facts prove what I said in question #2” → in Q2, health benefits, minimal harm to the body compared to other legal vices, it has been known to cure epilepsy, suppress cancer, and help AIDS patients...
77.	A	“All right because it has no bad effect that comes from it and you could use it for some medicines that have risk of causing something bad.”
78.	A	“Yes, I do. Of it is a supported fact then it would be all right. Cigarettes, etc. are legal and while I don’t think those are all right, a safer alternative may be good.”
79.	A	“Yes, it would be all right because it isn’t causing any harm to anyone.”
80.	N	“Not all right because it’s not safe and if the user is not safe that means people around the user won’t be safe either.”
81.	A	“In that case then it would be all right if the drug had no way to affect you in any way.”
82.	A	“All right because it doesn’t harm you at all and you have the freedom to smoke it or not.”
83.	U	“I guess it would be all right; some people enjoy using it. I personally would not use it. I do not like to drink and smoke recreationally, like some seniors at our school. Like I said, I do not want to be in an altered state of consciousness by drugs. I believe they are harmful and bad no matter what.”
84.	N	“If it was harmful to the user, I would say it’s not all right to use because it can put your life at risk and no drug is worth that. It’s like with cigarettes – they are frowned upon in society for their harmful effects.”
85.	N	“Not all right because it would just as bad as alcohol and/or cigs. The high would not be worth the harm that it causes to the user.”
86.	A	“I think in this case it is all right because if it causes no harm to the smoker, or the people around them, then I feel like it would be acceptable.”
87.	A	“It would be all right because it’s not hurting them so who cares how they spend their free time.”
88.	A	“Yes, there wouldn’t be a reason not to.”

89.	U	“Depend on the validity of the research. If it was proved to be completely harmless then sure, it would be all right. Donuts are harmful to our health – yet they’re loved and eaten frequently.”
90.	A	“Yes, because if it does prove that marijuana is safe it should be okay but it should be given to people 21 years of age or older.”
91.	?	“I don’t think people would stop because people still smoke cigarettes and we all know how dangerous those are.”
92.	N	“I still think it would not be all right. People do stupid things such as driving while they’re high. Scientists might supposedly have concluded that it doesn’t cause harm, but the people who are high and driving or operating machinery can harm others.”
93.	A	“All right because it is not harming the person who is using the marijuana.”
94.	U	“I guess all right since it is harmless, but what would be the purpose of it since can still have a happy, fun life without it.”
95.	A	“Again, I don’t see why not if scientists proved that it was safe to use. If it’s harmless, I say go for it, but just be smart on who you smoke with.”
96.	A	“All right. Yes, if someone likes smoking and it’s not harming anyone, let them do what they want.”
97.	A	“In that situation I think it would be all right for people to use because people would know no one is getting harmed.”
98.	A	“It would be all right because what reason is there for not smoking marijuana. People who don’t like it never tried.”
99.	A	“I think it would be all right for people to use it because everyone has a different effect to it.”
100.	A	“All right, I think if nothing is wrong with it, then why not let people consume it.”