

SOCIAL COGNITIVE PROCESSES AND ATTITUDES TOWARD LEGAL ACTIONS: DOES RECEIVING INFORMATION AFFECT COMMUNITY SENTIMENT?

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Voters influence laws, often without being fully informed. Justice Thurgood Marshall proposed that, if American citizens were fully informed of the goals and consequences of the death penalty, they would not support its use. The present studies demonstrated -this principle applied to laws other than the death penalty, specifically, laws regulating the behavior of pregnant women (e.g., drug use, cesarean section). Four studies expanded existing attitude change research and determined whether support for such laws was related to: 1) “first thoughts” about the laws; 2) information received about the laws; 3) valence of information; and 4) source of information (i.e., self, peers, researcher). In the first experiment, receiving information produced more negative attitudes than a no-information, control group, perhaps because most participants’ first thoughts about the laws concerned the health of the fetus (rather than the mother’s rights). The second study confirmed this through factor analysis of responses to a thought-listing task and determined that type of first thought (e.g., about the fetus, mother) predicted attitude. In a third study, a mixed method design, attitudes changed based on the type of information (e.g., negative, positive) given by the *researcher*, though a fourth study indicated that attitudes did not change after debate with *peers*. Finally, Need for Cognition and Legal Authoritarianism related to support for the laws. Results have implications for community sentiment research, policy regarding the health and behavior of pregnant women, and psychology research on social cognitive processes and attitude theory.

Keywords: Marshall hypothesis; attitude change; information processing; women’s health; health policy

Community sentiment can affect public policy (Lambert & Clarke, 2001; Miller, Blumenthal, & Chamberlain, 2015). Opinion polls measure citizens’ support for candidates and laws, and these opinions influence policymakers and, more directly, citizens express sentiments through voting. Both poll responses and voting decisions can be made using various amounts and types of information, which influence respondents’ answers (Finkel,

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2001; Kwiatowski & Miller, 2015); this could reflect the distinction between an opinion and a reaction. An opinion requires thoughtful, effortful processing (which requires information), while a reaction is an instant evaluation or transitory (rather than stable) sentiment (Finkel, 2001; Miller & Chamberlain, 2015). As such, even the most complex and involved polls might incorrectly measure community sentiment if they merely capture reactions.

The “ignorance hypothesis,” or Marshall hypothesis as it also is known, was proposed by Justice Thurgood Marshall about the death penalty in particular. He was convinced that, if people were fully informed, not only would they oppose the penalty, they would find it immoral and unconstitutional (Finkel, 2001, p. 9). Evidence supports the ignorance claim, and some research demonstrates that receiving pertinent information influences one’s attitudes about the death penalty (Bohm, 1987, 1989, 1998; Bohm, Clark, & Aveni, 1991; Lambert & Clarke, 2001). The Marshall hypothesis could be applicable to any number of laws, including those regulating pregnancy behaviors. This topic was chosen because it was expected that many people know little about pregnancy behaviors (especially college students); thus, it is possible to manipulate how much information participants have.

Laws regulating three, pregnancy behaviors were selected because of ongoing debate among experts in law, public health, and medicine (Paltrow & Flavin, 2013). Each law affects the rights of the mother (e.g., bodily autonomy) and the fetus (e.g., to remain free from harm). First, drug use during pregnancy has been a topic of interest since the 1980s War on Drugs. There has been much debate and disagreement among states as to whether mothers should be prosecuted for drug use during pregnancy (see Miller & Thomas, 2015). For example, although women have been prosecuted under laws criminalizing drug use during pregnancy in Tennessee (in 2014) and Utah (in 2012), as reviewed in Miller and Thomas, 2015, the New Jersey Supreme Court has decided illegal drug use during pregnancy does not, on its own, equate to abuse (*New Jersey Division of Youth & Family Services v. A.L.*, 2013). Second, although there are no laws that specifically criminalize behavior that can be harmful to the developing fetus, including refusal to obey doctor’s orders of bedrest or to have a cesarean-section (Brosh & Miller, 2008), women have been charged and prosecuted for criminal child abuse and neglect of their fetus as far back as 1973 (Paltrow & Flavin, 2013; see *Pemberton v. Tallahassee Memorial Regional Center*, 1999). Third, HIV testing and treatment for pregnant women can save money and lives (Udeh, Udeh, & Graves, 2008), but remain controversial because—like all three topics—they involve the possibility of negatively affecting the mother’s rights and well-being in favor of the rights and well-being of the fetus. While these topics are debated among legal and medical experts, the general population might have little knowledge about them, making them ideal topics for use in studying how receipt of information changes attitudes.

The notion that attitudes can be influenced by receipt of information is not new to psychologists. Dual processing theories suggest that a number of factors can lead people to process information either at a surface level or at a much deeper level (Chaiken & Trope, 1999). Theories of attitude change also predict that receiving information about an attitude object (e.g., a legal regulation) can change one’s attitude toward the object (Finkel, 2001;

Kwiatkowski & Miller, 2015; Lambert & Clarke, 2001). The current four studies will determine whether support for such laws was related to: 1) “first thoughts” about the laws; 2) information received about the laws; 3) valence of information; and 4) source of information (i.e., self, peers, researcher).

THEORETICAL BACKGROUND

Social psychological theories and lay hypotheses could explain why receiving information influences one’s attitudes. These include the Marshall hypothesis and theories regarding attitude change and information processing.

The Marshall Hypothesis

The Marshall hypothesis, while not a psychological theory, is one foundation of the current and past research (e.g., Bohm, 1998). Justice Marshall’s “ignorance hypothesis” (Finkel, 2001, p. 9) stated generally that the public is uninformed about important issues and that the amount of information individuals have about an issue influences their attitudes about it (Finkel, 2001; Lambert & Clarke, 2001). These separate but related hypotheses have been tested numerous times over three decades. The literature supports the notion that the public largely is uninformed about the death penalty and whether it achieves its intended outcomes; further, providing information¹ reduces participants’ support of the penalty (Bohm, 1998; Firment & Geiselman, 1997; Lee, Bohm, & Pazzani, 2014; Wright, Bohm, & Jamieson, 1995).

The Marshall hypothesis has been tested in numerous ways, including experimental, quasi-experimental, and pre-test/post-test studies; however, a major limitation to the generalizability of findings is that the hypothesis rarely is tested outside of the death penalty context. Exceptions include studies in which researchers have provided participants with information with the intent of changing attitudes toward people of other races (McClelland & Linnander, 2006); people with HIV/AIDS (Ergene, Cok, Tumer, & Unal, 2005); rape prevention programs (Heppner, Humphrey, Hillenbrand-Gunn, & DeBord, 1995); the AMBER Alert system (Alvarez & Miller, 2016; Sicafuse & Miller, 2012); and laws regulating online student-teacher interactions (Kwiatkowski & Miller, 2015). Generally, these studies find that receiving information can change attitudes. This phenomenon might be explained in a number of ways related to information processing and attitude change.

Information Processing and Attitude Change

A person’s attitudes can change when he receives new information about the attitude object (Eagly, Chaiken, 1993; for review, see Lambert, Camp, Clarke, & Jiang, 2011). This information can originate from an outside source or be self-generated. The current studies investigate whether attitudes about laws regulating pregnancy behaviors change due to receipt of information coming from researchers, peers, or the self.

Dual information processing theories such as the Elaboration Likelihood Model (Petty & Cacioppo, 1986) might help explain why receiving information can affect at-

¹ Either neutral, unbiased information or valenced information.

titudes toward laws. The ELM states that the more willing and able an individual is to assess the central merits of an attitude object (e.g., person, law), the more likely he is to scrutinize *all* information (Petty & Wegener, 1998). Further, as the number of messages increases, information processing becomes more elaborate (Harkins & Petty, 1981a; Moore & Reardon, 1987; Petty, Ostrom, & Brock, 1981), especially when messages are from multiple sources. Thus, when elaboration likelihood is high (i.e., in the presence of information), the individual is more likely to analyze existing knowledge and new information using the central route of processing. When elaboration likelihood is low (i.e., information is unavailable), the likelihood of thorough analysis is also low, and individuals are more likely to rely on heuristic cues (e.g., peripheral route).

In the current studies, when people are not motivated or able to elaborately process information (i.e., because of lack of information), they may rely on heuristics such as their first thoughts to develop their attitude. These first thoughts are likely to be positive based on the psychological principle that, unless disagreeable information is provided, individuals typically assume unfamiliar objects are good (Gilbert, 1991). A person's first thought when considering the issue of drug use during pregnancy might be that laws criminalizing drug use during pregnancy are good because they protect a fetus. But, receiving information could encourage individuals to think more elaborately about the issue. For instance, they might think about the costs of implementing the law and the possibility that expecting mothers who use drugs might avoid prenatal care to avoid incarceration.

While receiving information could affect processing level and change attitudes (as predicted by the ELM), this could depend on the valence and content of the information. Theories of biased information processing predict that individuals might discount new information that is inconsistent with their initial heuristic (e.g., the first thought), leading to resistance to attitude change (Ellsworth & Ross, 1983). By actively resisting more elaborate information processing, individuals can maintain their initial attitudes. However, if the information supports the initial heuristic, the attitude could be strengthened or polarized as a result of receiving information (Kuhn & Lao, 1996). Accordingly, the Marshall hypothesis, which proposes that receiving *any* information will decrease support, might be only partially correct. Rather, the valence of information might create resistance to attitude change or polarization of attitudes.

Taken together, theory and past research suggest that attitudes could be influenced by the amount and valence of information available. Receipt of information might provide individuals with the ability and motivation to process information at a higher level—thus changing their attitudes. Even so, some individuals might resist attitude change even when provided with more information. The current studies investigate these possibilities.

OVERVIEW OF STUDY 1

This online experiment tested the hypothesis that participants who receive neutral information about legal actions regarding pregnancy behaviors (including forced C-sections, use of legal or illegal drugs, use of drugs to prevent prenatal transmission of

HIV, and refusal to follow doctor's orders) would have less positive attitudes toward the regulations compared to participants who receive no information about the legal actions.

METHOD

Participants

Community members ($N = 204$) completed the online study without compensation. Participants ranged in age from 18 to 89 years ($M = 24.18$; $SD = 12.4$); 55% were female.

Procedure, Design, and Materials

Participants were recruited using snowball sampling through online postings (e.g., Craigslist) and word of mouth. One randomly assigned group of participants received informational narrative about laws regulating pregnancy behaviors ($n = 101$), while the other did not ($n = 103$). Each 56-104 word narrative described an issue (i.e., illegal or legal drug use during pregnancy, C-section, refusal to follow doctor's orders [e.g., bed rest], drugs used to prevent transmission of HIV to the fetus) and provided unbiased, statistics-based information describing the issue in a neutral manner (e.g., providing roughly the same amount of negative and positive information; see Appendix A). After reading the narratives, participants indicated whether they agree that a woman should be held criminally liable for doing the behavior described. After the narrative about HIV transmission, participants indicated if the woman should be legally required to receive treatment. Questions were answered on a 5-point, Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). All participants rated agreement for all five behaviors. In the no information condition, participants were asked the same questions but without reading the narratives.

RESULTS AND DISCUSSION

Support for Legal Regulation

Overall, participants were supportive of the legal regulations. Except for the regulation of C-sections, means for dependent variables were at or above the mid-point (3.0). Support for HIV treatment and punishment for illegal drug use was the highest—over 4.0 (see Table 1).

As expected, the group that received information was less supportive of each of the legal regulations than the group given no information. This effect was significant for the C-section question, $F(1, 199) = 4.98, p = .027, \eta_p^2 = .024$; the *illegal* drug use question, $F(1, 198) = 8.85, p = .003, \eta_p^2 = .043$; the *legal* drug use question, $F(1, 198) = 10.23, p = .002, \eta_p^2 = .049$; the refusal to follow doctor's orders question, $F(1, 198) = 16.03, p < .001, \eta_p^2 = .075$; and the HIV treatment question, $F(1, 198) = 29.71, p < .001, \eta_p^2 = .131$.

Table 1. Study 1 Comparison of Information and No information Participants

		<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI	
					Lower	Upper
Cesarean Section	No Information	2.33	1.14	0.112	2.11	2.55
	Information	1.98	1.08	0.109	1.76	2.2
Illegal drugs	No Information	4.12	1	0.099	3.93	4.31
	Information	3.7	0.97	0.098	3.5	3.9
Legal drugs	No Information	3.78	1.12	0.111	3.56	3.99
	Information	3.27	1.14	0.115	3.04	3.49
Refuse doctor's orders	No Information	3.03	1.06	0.105	2.82	3.24
	Information	2.43	1.07	0.108	2.22	2.64
HIV treatment	No Information	4.27	0.95	0.094	4.05	4.49
	Information	3.4	1.28	0.13	3.17	3.62

This study assessed whether receiving information regarding legal regulation of pregnancy behaviors would lead to lower support for the regulations. For each of the five topics, the group given no information supported the regulations more than the group that received information. Interestingly, effect sizes were largest for the refusal to follow doctor's orders and HIV transmission questions. Although participants presumably knew less about HIV transmission (as compared to C-sections and drug use), they were presumed to know more about refusal to follow doctor's orders. Thus, initial knowledge might not have influenced responses.²

Results of this study, taken together with the results of public opinion polls that differ depending on the amount of information provided (Finkel, 2001), suggest that uninformed voters might vote differently than informed voters (though neither this study or many opinion polls measure voting). When considering a specific law, voters given no information likely think only of the law's benefits because they assume there is a positive purpose for the law (see generally, Gilbert, 1991). They may be more likely to rely on their first thoughts about the law to guide their voting behavior because they are given no information. In the case of laws that criminalize behavior during pregnancy, one of the first thoughts voters may have is the protection of the fetus, which would lead to general support of the law. However, interesting, it remains unclear whether the difference in support between the groups actually occurred as a result of participants' first thoughts, or whether participants' first thoughts actually affected their decisions. Study 2 addresses these issues.

OVERVIEW OF STUDY 2

Study 1 results suggested that individuals who had no information thought immediately about the law's beneficial implications for the fetus. In a way, these first thoughts might act as heuristics that guide initial reactions when individuals think shallowly (e.g., low elaboration). Presumably, these first thoughts led to mostly favorable attitudes for par-

2 This is speculation, as participants were not asked about their familiarity with these topics.

ticipants who had no other information. In contrast, those who received more information were able to engage in higher elaboration and consider not only the law's benefits, but also the costs and negative implications. Thus, these individuals' attitudes were less favorable. Study 2 tested this assumption by asking participants to report their first thoughts about these same five laws.

It was hypothesized that many first thoughts would be about the well-being of the fetus. It also was expected that the content of the first thoughts would predict support, such that participants whose first thoughts were about the fetus would be more supportive than those whose first thoughts were about the mother's rights or other topics. Additionally, two research questions asked: What are the common thoughts about these issues? What do the thoughts suggest about participants' depth of processing?

METHOD

Participants

Community members ($N = 100$) participated without compensation. Participants ranged in age from 20 to 61 years ($M = 32.8$; $SD = 12.3$), and 73% were female.

Procedure, Design, and Materials

Participants were recruited for this online survey using snowball sampling through online posts (e.g., Craigslist) and word of mouth. Participants were first given a general description of the five regulations, then listed their thoughts through a thought-listing task (e.g., "Please discuss your thoughts on the law requiring (this law).") Finally, participants indicated agreement with the laws using measures identical to Study 1.

Coding Scheme

Of the 100 participants, 86 offered at least one comment (i.e., a thought), defined as a remark that expressed an opinion or thought; 14 declined to complete the thought-listing activity. Comment size ranged from four words (e.g., "to protect the fetus") to several sentences. Because participants were allowed to make unlimited comments, the total number of comments was 225. Of those who offered comments, participants averaged 2.62 comments ($SD = 1.36$).

Two coders read the comments and jointly identified 10 themes. A participant's response could contain multiple comments which reflected multiple themes (e.g., "if a woman takes drugs...while she knows she is pregnant, she should be punished because those drugs ...have effects on the child" would be categorized as both "mother responsibility" and "harm to fetus"). Following a procedure used by McAdams, Reynolds, Lewis, Patten, and Bowman (2001), the coders then independently coded the entire sample and compared answers. Holsti's coefficient of inter-coder reliability was .884, which indicates a fairly high rate of agreement. The raters discussed discrepancies in categorization in order to establish the final coding.

STUDY 2 RESULTS AND DISCUSSION

Content of Thoughts

The most common theme, by a large margin, was concern for the fetus (e.g., health effects), which was mentioned 72 times. The second most common theme was legal rights (e.g., mothers' right to autonomy), mentioned 35 times. The third most common theme, mentioned 27 times, was concern for the mother (e.g., health risk). The fourth most common theme involved the mother's responsibility, mentioned 22 times. Other themes included: concerns about the medical profession's ability to address the issue (mentioned 14 times), enforcement issues (mentioned 8 times), external factors such as addiction, religious factors, or inability of mother to follow doctor's orders (mentioned 8 times each), trust in doctors (mentioned 7 times), and concern for society/taxpayers (mentioned 4 times).

Interestingly, 16 comments mentioned a weighing of the interests of the baby against that of the mother, suggesting that some participants had substantial depth of thought. Similarly, most participants listed multiple thoughts, and many of these were contradictory, such as "A woman should be able to do what she wants with her body... there is a huge risk factor involved for ...[her health] and her baby. A doctor is trained to determine this... law that could potentially save lives is a good one." This response illustrates a comment in favor of mothers' rights and health, a comment about the fetus' health, and a comment about trust in doctors. The variety of thoughts coming from the same participant could demonstrate elaborate processing, even without additional information. On the other hand, of the 100 participants, 14 did not complete the thought-listing activity, and 12 specifically stated that they needed more information. This could suggest that these participants—over a quarter of the total number of participants—demonstrated a possible lack of thought about the issue due to unwillingness or inability.

Importantly, 72 comments regarded the fetus's health and safety. This is more than twice the number of the next comment category (legal rights), which confirms that many of the participants' first thoughts were about the fetus and helps explain high support for the regulations. Participants might use their first thoughts as heuristics to form their attitudes, which for most participants would involve protecting the fetus. It is only after receiving more information (and more elaborated processing) that support lessens.

Content of First Thoughts

Many participants had multiple thoughts (86 participants listed 225 comments). In order to test the idea that the *first* thought is predictive of attitude, researchers coded the first comment for each participant as either 1) about the fetus (e.g., fetus wellbeing), 2) about the mother (e.g., her health or rights), or 3) other. The Holsti coefficient of inter-coder reliability for categorization of first thoughts was .927.

Of the 86 *first* thoughts, 31 were about the fetus, 23 were about the mother, and 32 were about another topic. This categorization of first thoughts was used as the independent variable in a MANCOVA; the dependent variables were each of the five support measures. The first thought significantly predicted support, Pillai's Trace = .433, $F(10, 154) = 4.26$, $p < .001$, $\eta^2 = .23$. Univariate comparisons demonstrated that the first thought type sig-

nificantly affected the support scores for C-section, $F(2, 80) = 14.13, p < .001, \eta^2 = .26$; doctor's orders, $F(2, 80) = 8.51, p < .001, \eta^2 = .18$; illegal drugs, $F(2, 80) = 3.32, p = .04, \eta^2 = .08$; legal drugs, $F(2, 80) = 9.55, p < .001, \eta^2 = .19$; and HIV treatment, $F(2, 80) = 8.65, p < .001, \eta^2 = .18$. Means are reported in Table 2 and reveal that, for all five dependent variables, those participants who had a first thought about the fetus were more supportive compared to those whose first thought was about the mother or another topic (although post-hoc tests were not always significant).

Table 2. *Study 2, Comparison of First Thoughts*

		<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI	
					Lower	Upper
Cesarean section	Fetus	2.97	1.03	0.177	2.61	3.32
	Mother	1.87	1.01	0.202	1.47	2.27
	Other	1.73	0.87	0.177	1.38	2.09
Legal drugs	Fetus	3.97	1.07	0.227	3.52	4.42
	Mother	3.35	1.5	0.259	2.83	3.86
	Other	2.57	1.19	0.227	2.15	3.02
Illegal drugs	Fetus	4.27	0.91	0.239	3.79	4.74
	Mother	3.74	1.57	0.273	3.2	4.28
	Other	3.4	1.43	0.239	2.92	3.88
Refuse doctor's orders	Fetus	3.1	0.85	0.177	2.75	3.45
	Mother	2.17	1.15	0.202	1.77	2.58
	Other	2.2	0.93	0.177	1.85	2.55
HIV treatment	Fetus	4.47	0.63	0.204	4.06	4.87
	Mother	3.87	1.46	0.233	3.41	4.33
	Other	3.27	1.2	0.204	2.86	3.67

Post hoc tests revealed that, in the C-section and doctor's orders analyses, participants whose first thought was about the fetus differed from those whose first thought was about either the mother or some other topic, but the mother and other topic groups did not differ. In the HIV treatment analysis, the legal drug analysis, and the illegal drug analysis, participants whose first thought was about the mother did not differ from either those whose first thoughts were about the fetus or some other topic; the fetus and other groups did not differ.

On one hand, findings that participants' thoughts were related to their support is not surprising. But, note that most participants listed multiple thoughts, and many of these were contradictory. Thus, the thought that was listed *first* might be the first that came to mind—and the most significant in predicting support. This suggests the importance of first thoughts in the expression of attitudes.

OVERVIEW OF STUDY 3

Study 3 addressed two issues remaining after Studies 1 and 2 and expanded on these studies by considering the effects of additional factors, like participants' attitudes toward the legal system. Study 1 compared a group that received information with a group that did not receive information, but did not directly assess whether any particular participant's attitudes changed after receiving information. Thus, Study 3 measured change in attitudes using a pre-test/post-test design, which complemented the between-groups experimental design of Study 1.

Further, the Marshall hypothesis states that accurate, *unbiased* information should lead to decreased support for a law, but does not mention the potential effect of *biased* information. Study 3 addressed these issues by examining whether valenced information (i.e., favoring one position) leads to decreased support, or if participants' initial attitudes remain after they receive information (a possible resistance effect; Ellsworth & Ross, 1983) or even become polarized/strengthened (Kuhn & Lao, 1996).

In addition, Study 3 considered participants' certainty in *voting* for a law, whereas Studies 1 and 2 measured agreement that legal actions should be taken. One purpose of the study of attitudes is to predict behavior (Eagly & Chaiken, 2005). Although this link historically has been difficult to establish, some connections do exist between attitudinal and behavioral measures elicited at the same level of specificity or within a certain context (Ajzen & Fishbein, 2005). Asking participants if they would vote for a law may activate an attitude-behavior link such that participants would think not only of their opinions, which inherently carry no consequences, but also would think of the implications of their opinion. This presumably would affect participants' responses and provide a more realistic depiction of voting behavior.

Next, Study 3 assessed relationships between individual difference variables and vote certainty. Considerable attention has been paid to individual differences that predict legal decisions (for review, see Chomos & Miller, 2015), including attitudes toward the legal system (i.e., legal authoritarianism; Kravitz, Cutler, & Brock, 1993). Participants who score high on the Revised Legal Attitudes Questionnaire (RLAQ; Kravitz, et al., 1993) generally support laws simply because they believe that laws are necessary and positive.

Finally, this study measured information processing by using processing measures developed from Cognitive-Experiential Self Theory (CEST; Epstein, 1994). CEST is a broad theory of personality that incorporates preference for either rational or experiential information processing styles (Epstein, 1994, 2003). The Rational-Experiential Inventory (REI) consists of the Need for Cognition (NFC) and the Faith in Intuition (FI) scales. Individuals who prefer rational processing tend to rely on the rules and evidence to make decisions and tend to score higher on NFC (Epstein, 2003). In the context of this study, participants high in NFC were assumed to have considered the information presented more carefully and, as a result, would be less likely to vote in support of these laws (according to the Marshall hypothesis). In contrast, individuals who prefer experiential processing tend to make decisions based on emotion and experience and tend to score higher on FI

(Epstein, 2003). These participants were expected to vote in support of the laws as a result of low-elaboration information processing which relies on their positive first thoughts.

Study 3 was designed to test each of these notions. The first research question assessed whether participants who receive no information would differ in their voting certainty compared to participants who receive positive, negative, or control/unbiased information. Additionally, this study tested whether voting certainty would change after receiving information (i.e., a comparison of pre-information and post-information voting certainty); whether there is a difference in post-information certainty ratings based on the information valence; and whether changes in vote certainty occur equally for all types of information (i.e., positive, negative, or unbiased). Lastly, it was expected that participants would report greater voting certainty as scores on FI and RLAQ increased and as scores on NFC decreased.

METHOD

Participants

The 165 students from a mid-sized university in the western United States received partial course credit. Participants ranged in age from 18 to 55 years ($M = 23.41$ years); 77.0% were female; and 19 (11.5%) were parents. Participants were 76.0 % White, 9.2% Hispanic, and 4.9% Other.

Procedure, Design, and Materials

Participants completed an online survey. Participants indicated initial voting certainty for each of the laws using a 5-point scale (1 = *I am certain I would not vote for this law* to 5 = *I am certain I would vote for this law*), with an additional option to check *I do not have an opinion about this law* (these participants were excluded). Participants randomly were assigned to one of four groups, which varied by the valence of information the participant received. Participants in the positive information group ($n = 33$) read a narrative (289 words) in support of the proposed laws, emphasizing the importance of protecting the health of the fetus. Participants in the negative information group ($n = 34$) read a narrative (280 words) in opposition to the proposed laws, focusing on the difficulties pregnant mothers face and the difficulty in enforcing these laws. Participants in the control/unbiased information group ($n = 43$) read a narrative (299 words) that described pregnancy in general without mentioning any of the behaviors addressed in the survey.³ Finally, participants in the no information condition ($n = 55$) simply completed the initial assessment of their attitudes without reading additional information; the remainder of the survey was identical to other conditions (see Appendix B for all narratives). Finally, attitudes were assessed with a post-information measure, identical to the pre-information measure (except in the no

3 All narratives were tested prior to use. Participants rated one of the three conditions (positive, negative, neutral; $n_s = 22, 18, 19$, respectively) using a 7-point Likert-type scale from 1 = negative to 7 = positive. Those who rated the positive information indicated that the information was significantly more positive than that in the negative or neutral condition ($p < .05$); negative and neutral information conditions were marginally significant different ($p = .063$), with the negative information seen as slightly more negative than the neutral information.

information condition). Following the pre- and post-information vote certainty measures, participants completed the following measures.

Manipulation check questions. All participants except those in the no information group completed a single manipulation check item indicating whether the information provided was unbiased, in opposition to, or in support of the law proposed.

Rational Experiential Inventory (REI). The REI (Norris, Pacini, & Epstein, 1998) measured individual difference in Need for Cognition (NFC; 5 items, Cronbach's alpha = .63; e.g., "I would prefer complex to simple problems") and Faith in Intuition (FI; 5 items, Cronbach's alpha = .83; e.g., "I trust my initial feelings about people"). Both were measured on a 5-point Likert-type scale (1 = *extremely uncharacteristic* to 5 = *extremely characteristic*).

Revised Legal Attitudes Questionnaire (RLAQ). Kravitz et al.'s (1993) Revised Legal Attitudes Questionnaire included 23 items (Cronbach's alpha = .73), such as "Unfair treatment of underprivileged groups and classes is the chief cause of crime," using a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*).

Demographics. Participants indicated their student status, race, gender, and age.

RESULTS

Manipulation Check Questions

Chi-square analysis revealed a significant difference between participants in the positive, negative, and control/unbiased information groups on the manipulation check question ($\chi^2 = 22.582, p < .001$). Participants provided with negative information were more likely to indicate that the information was in opposition to the law compared to those in the control/unbiased group, while participants provided with positive information were more likely to indicate that the information was in support of the law compared to the control/unbiased group.

Voting certainty for Proposed Legislation

Overall, participants indicated high certainty that they would vote for these laws. With the exception of C-sections, the means (taken before being given information) for voting certainty was at or above the mid-point (3.0). Voting certainty for HIV treatment and penalization for illegal drug use laws were the highest—near or above 4.0 (See Table 3).

Table 3. *Study 3 Comparison of Information Valence*

		<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI	
					Lower	Upper
Cesarean Section	Control/Unbiased Information	2.24	1.67	0.26	1.72	2.77
	Positive Information	2.13	1.04	0.18	1.75	2.50
	Negative Information	2.31	1.33	0.24	1.83	2.79
	No Information	2.15	1.18	0.16	1.82	2.48
Illegal drugs	Control/Unbiased Information	4.24	1.20	0.19	3.84	4.63
	Positive Information	4.00	0.95	0.17	3.66	4.34
	Negative Information	4.13	1.04	0.18	3.75	4.50
	No Information	4.19	1.10	0.15	3.89	4.50
Legal drugs	Control/Unbiased Information	3.80	1.38	0.22	3.36	4.24
	Positive Information	3.75	1.11	0.20	3.35	4.15
	Negative Information	3.66	1.12	0.20	3.25	4.06
	No Information	3.79	1.25	0.17	3.45	4.14
Refuse doctor's orders	Control/Unbiased Information	2.71	1.54	0.24	2.22	3.19
	Positive Information	2.72	1.02	0.18	2.35	3.09
	Negative Information	2.16	0.85	0.15	1.85	2.46
	No Information	2.45	1.26	0.17	2.10	2.80
HIV treatment	Control/Unbiased Information	4.22	1.21	0.19	3.84	4.60
	Positive Information	4.06	1.01	0.18	3.70	4.43
	Negative Information	3.84	1.24	0.22	3.38	4.29
	No Information	3.96	1.02	0.14	3.68	4.24

Between-subjects analysis. A one-way MANOVA was conducted to test the difference between post-information certainty ratings (DVs) in the negative, positive, and control/unbiased information conditions and the scores in the no-information condition. No significant effects emerged when all valence conditions were included ($ps > .05$). To directly test the Marshall hypothesis, which considers only the difference in support between those who received *unbiased* information and those who received no information, an ANOVA revealed significant effects for laws penalizing pregnant women for using legal drugs, $F(1, 84) = 7.657, p < .01, \eta^2 p = .085$ and for those penalizing women who refuse HIV treatment, $F(1, 84) = 15.357, p < .001, \eta^2 p = .158$.

Within-subjects analysis. Repeated measures MANOVA with time (pre- or post-information scores) as the within-subjects variable and information valence as the between-subjects variable was conducted. Voting certainty was the dependent variable. The no information group was excluded in the analyses as these participants only provided one set of certainty ratings.

There was a main effect for change in voting certainty between pre- and post-information ratings, $F(5, 93) = 5.797, p < .001, \eta^2 p = .238$. Univariate analysis indicated that this main effect was driven by the HIV treatment dependent variable; voting certainty decreased significantly from pre- to post-information certainty ratings, $F(1, 97) = 10.818, p < .01, \eta^2 p = .10$.

There was also a main effect for information valence condition on post-information voting certainty, $F(5, 94) = 2.483, p < .05, \eta^2 p = .117$. For laws regarding HIV treatment, post-information voting certainty for those in the control/unbiased information group were significantly higher than for those in the negative information group, $F(1, 101) = 1534.08, p < .001, \eta^2 p = .94$. Additionally, voting certainty for laws penalizing women who refuse to follow doctor's orders were significantly higher for those in the positive information condition than for those in the negative information condition, $F(2, 102) = 2.86, p < .05, \eta^2 p = .071$.

Interaction effects between information valence condition and time (pre-information and post-information) emerged for all laws with the exception of refusal to follow doctor's orders. Voting certainty decreased significantly from pre- to post-information, but only for those in the negative information condition; this pattern occurred for the DVs regarding HIV treatment, $F(2, 101) = 11.77, p < .001, \eta^2 p = .101$; illegal drug use, $F(2, 99) = 4.67, p < .05, \eta^2 p = .087$ and legal drug use, $F(2, 101) = 5.48, p < .01, \eta^2 p = .098$. Unlike the interaction effects that emerged for other laws, voting certainty for laws penalizing women for refusing C-sections increased significantly from pre- to post-information for participants in the positive information condition, $F(2, 102) = 6.57, p < .01, \eta^2 p = .011$. No other relationships in the interaction were significant.

Individual Differences

Multivariate multiple regression assessed the impact of a number of individual difference factors on post-information certainty ratings for each law.⁴ The first step of each regression contained the predictor variable (all four information valence conditions); the second step contained this and individual difference predictors (i.e., NFC, FI, RLAQ scores).

Scores on RLAQ significantly predicted voting certainty for all laws. Regardless of information valence condition, as scores on the RLAQ increased, vote certainty ratings increased for laws regarding HIV treatment, $R^2 = .343, F(4, 155) = 5.05, p < .001, B = .700, p < .001$; refusal to follow doctor's orders, $R^2 = .422, F(4, 155) = 8.17, p < .001, B = .864, p < .001$; illegal drug use, $R^2 = .492, F(4, 154) = 11.952, p < .001, B = 1.280, p < .001$; legal drug use, $R^2 = .320, F(4, 155) = 4.304, p < .001, B = .987, p < .001$; and refusal of C-sections, $R^2 = .337, F(4, 155) = 4.83, p < .001, B = .764, p < .01$.

Certainty ratings significantly decreased as scores on NFC increased for laws regarding refusing doctor's orders, $B = -.103, p < .001$ and refusing C-sections, $B = -.060, p < .05$. Scores on FI did not relate to voting certainty for any law.

4 The no information group only gave one response.

STUDY 3 DISCUSSION

The Marshall hypothesis states only that accurate, unbiased information is likely to lead to decreased voting certainty for laws, but does not mention the effect of biased (valenced) information. In the between-subjects analysis, the Marshall hypothesis stands; when compared to those with no information at all, only unbiased information led to decreased support among participants for laws regarding legal drug use and the refusal of HIV treatment.

Effect sizes for the post-information certainty ratings for the law regarding refusal of HIV treatment in this study remain the largest for all of the laws. In other words, receiving unbiased information accounts for more variance in voting certainty for laws regarding refusal of HIV treatment than for any other laws discussed here. Presumably, participants were the least familiar with laws regarding refusal of HIV treatment, so it should follow that providing any information at all would affect support the greatest for this law. This lends some support to the Marshall hypothesis' claim that the public is largely uninformed about certain laws and receiving unbiased information on unfamiliar topics influences attitudes toward that law.

Interestingly, participants provided with unbiased information (i.e., control condition) indicated greater certainty that they would vote for these laws compared to those provided with no information for laws regarding the use of legal drugs and laws regarding refusal of HIV treatment. This might be because the unbiased information condition provided participants with information about pregnancy in general, which prompted them to think of the fetus first. As a result, they indicated they would vote in support of these laws likely in order to safeguard the fetus. As found in Study 2, those who think of the health of the fetus first are more likely to support laws that prosecute pregnant women for behaviors that might harm the fetus.

The within-groups analysis extended the experimental results of Study 1, confirming that certainty ratings change after participants receive information, which also lends support to the Marshall hypothesis. However, a closer look reveals that this effect is carried by the HIV treatment variable. For all laws except those regarding refusal of C-sections and refusal to follow doctor's orders, an interaction effect indicated that information describing *negative* aspects of the law led to a significant decrease in certainty from pre-information to post-information. However, for laws regarding C-sections, voting certainty significantly increased when participants were presented with *positive* information. Interestingly, a review of the means shows that C-sections received the lowest pre-information scores by far. Thus, the initial first attitudes were quite negative, allowing positive information to significantly increase voting certainty. In contrast, the means for the other three laws (refusal of HIV treatment, use of legal and illegal drugs) were quite favorable, allowing negative information to decrease voting certainty. This does not support the notion that information leads to a polarization of attitudes (Kuhn & Lao, 1996), according to which high certainty should increase, and low certainty should decrease. While research is mixed, the current findings support Kuhn and Lao (1996) who proposed that polarization occurs as a result of

cognitive engagement, not merely receiving new information. These findings also do not indicate any resistance effect such that participants refuse to allow new information to affect their attitudes (Ellsworth & Ross, 1983).

Further, participants' level of processing was related to their scores on some measures. As predicted, participants' need for cognition (NFC) was related negatively to certainty scores for laws regarding refusal to follow doctor's orders and C-sections. Scores on FI did not predict support for any laws, suggesting that FI and NFC are related but separate constructs (see Miller, Wood, & Chomos, 2014). Participants' scores on the RLAQ significantly and positively were related to certainty ratings on all laws, as predicted.

OVERVIEW OF STUDY 4

Each of the previous studies found at least moderate support for the Marshall hypothesis in general: That the receipt of information can 1) *predict* attitudes toward at least some of the five laws, like in Studies 1 and 3, or 2) *change* attitudes toward the laws, like in Study 3. In the previous studies, information either was provided by the researcher (Studies 1 and 3) or self-generated (as in Study 2, when participants listed their own thoughts). However, these are not the only avenues through which individuals could receive information. Study 4 extended these findings by testing whether information generated by similar others, through debate with peers, leads to a change in attitudes toward each of the five laws. An expert source (e.g., an eminent legal scholar) might influence a target person's attitudes more than non-expert source (e.g., a freshman student from another university), even when the target has pre-existing attitudes on the topic (Mackie & Worth, 1989; Sicafuse & Miller, 2012). As such, debate with peers (other student participants) could influence participants' attitudes differently than receiving information from the researcher, a more credible source. However, some research has been less conclusive and suggests that source credibility has no effect on attitude change when the target has pre-existing attitudes (Kumkale, Albaraccin, & Seignourel, 2010).

Additionally, Study 4 replicated Study 2 thought listing tasks. This determined what participants first thought of when reading about the laws. Study 4 analyzed first thoughts to determine whether they predicted attitudes toward the legal regulations.

METHOD

Participants

Participants were 41 students in a statistics class from a mid-sized university. No demographics or other information were collected due to time constraints.

Procedure, Design, and Materials

Participants indicated initial voting certainty for each law on a 5-point scale ranging from 1 (*I am certain I would not vote for this law*) to 5 (*I am certain I would vote for this law*). Participants were instructed to list their first, three thoughts about the laws, and

then to debate the laws in groups of 2-4 participants for 15 minutes. Participants indicated post-debate voting certainty for each law on the same scale.

Coding Scheme for Thought Listing

All participants provided their first thoughts, which ranged from two words to several sentences. Based on discussion and analysis of thoughts, researchers categorized each first thought as 1) concern for the fetus' health; 2) concern for the mother's rights; 3) balanced view weighing the interests of the fetus against the interests of the mother (e.g., "Where do we draw the line between personal rights and the good of the child?"); and 4) other/unrelated.

STUDY 4 RESULTS AND DISCUSSION

Content of Thoughts

Like in Study 2, the most common theme was concern for the health of the fetus, mentioned by 16 participants, followed closely by legal rights of the mother, mentioned by 14 participants. Repeated measures MANOVA tested the effect of participants' first thoughts on pre- and post-information certainty ratings for all laws.

There was no main effect for time on pre- and post-debate certainty scores and no interaction effect between time and first thought category ($ps > .05$). There was a main effect for first thought category, however, $F(15, 90) = 2.308, p < .01, \eta^2 p = .278$. Post-debate certainty scores for participants who thought of the fetus first were significantly higher than post-debate certainty scores for participants who thought of mothers first for laws regarding C-sections, $F(3, 32) = 8.314, p < .001, \eta^2 p = .438$, and use of legal drugs, $F(3, 32) = 4.085, p < .05, \eta^2 p = .277$. For laws regarding the refusal to follow doctor's orders, $F(3, 32) = 7.522, p < .01, \eta^2 p = .414$; post-information certainty scores were significantly higher for those who thought of unrelated topics first than for those who thought of mothers first (see Table 4 for descriptive statistics).

Study 4 provides additional confirmation (even from a small sample) that first thoughts most often concern the health of the fetus, and these thoughts lead to increased willingness to vote for these laws. Debate with peers did not affect attitudes, perhaps because information provided by peers was discounted if it did not align with initial attitudes. This is similar to findings, which suggest that, in the presence of prior attitudes, source credibility has no effect on attitude change (Kumkale et al., 2010).

Table 4. *Study 4 Comparison of Information Valence*

	Pre-information		Post-information	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cesarean Section	2.230	1.039	2.250	1.242
Illegal drugs	4.080	1.156	4.110	1.159
Legal drugs	3.530	1.237	3.560	1.288
Refuse doctor's orders	2.560	1.184	2.480	1.280
HIV treatment	3.720	1.195	3.640	1.206

GENERAL DISCUSSION

Attitude measurement and change are long-studied topics in social psychology, and it generally is accepted that having or receiving information about an attitude object influences that attitude (Bohner & Dickel, 2011). Research on the Marshall hypothesis concludes likewise; receiving information about a specific law affects attitudes toward that law. These studies investigated how different aspects of information reception affect attitudes; specifically how attitudes are shaped by: 1) first thoughts about the law; 2) the valence of information received; and 3) the information source: Researchers, self, or peers. The studies determined whether receipt of information affects both attitudes and behavior (e.g., voting). This research is also among the first to investigate whether the Marshall hypothesis, or “ignorance hypothesis” (Finkel, 2001, p. 9), explains support for laws other than death penalty, or whether the receipt of information leads to more negative attitudes or polarized attitudes. Further, little research has investigated people’s thoughts about these laws and whether these thoughts or participants’ individual differences (e.g., NFC, FI, RLAQ) affect attitudes.

Several general conclusions can be made. First, results indicate that, without additional information, people assume unfamiliar objects are good (Gilbert, 1991). Attitudes toward the laws generally were positive across studies before participants received information. However, attitudes toward laws regarding C-sections and doctor’s orders were the least positive, possibly because participants were more familiar with these restrictions.

Second, first thoughts generally predicted attitudes toward the laws, as expected according to information processing theories (Epstein, 1994). Generally, participants were more supportive or willing to vote for these laws when their first thoughts concerned the fetus than when their first thoughts concerned the mother. Participants likely relied on heuristic processing because it is an efficient, low-effort method of decision-making. Thus, their first thoughts likely acted as heuristics that guided their attitudes.

The third general finding concerns the expansion of the Marshall hypothesis to laws other than the death penalty. No previous research has investigated whether the Marshall hypothesis holds true when biased/valenced information is presented, rather than the ac-

curate, unbiased information specified by Justice Marshall. Study 3 confirmed that biased information does predict attitudes, but only for select laws. As expected, support decreased for participants who received negative information, but only for four of the laws. Support increased for participants who received positive information for laws penalizing women for refusing C-sections. Laws regarding C-sections received the lowest pre-information voting certainty when compared to other laws, allowing positive information significantly to increase voting certainty. Meanwhile, voting certainty for the other laws were quite favorable, allowing negative information to decrease voting certainty. We found little evidence of polarization (Kuhn & Lao, 1996) effects.

The death penalty generally is associated with particularly strong opinions and previously formed attitudes, whereas attitudes toward pregnancy behaviors less likely are formed and more fluid. However, the studies as a whole found moderately strong support for the Marshall hypothesis as applied to one context outside of the death penalty, which has not always been the case in past research (Heppner et al., 1995).

Fourth, information processing traits generally relate to support for laws in expected directions, but only for laws that participants were presumably more familiar with initially (i.e., laws regarding C-sections and doctor's orders). Participants may have had easier access to information regarding these laws or more time to process information (because they knew someone who has had a C-section or been on bed rest in the past, prompting thought about the issue). Thus, those who prefer analytical processing are more motivated, able to consider the unintended consequences of laws and, thus, are less supportive of these laws.

Lastly, we make general conclusions about the information source (e.g., researcher, participant, or other participants). While the Marshall hypothesis did not specify how information source affects attitudes, we found evidence that information might be scrutinized differently based on the source of the information (e.g., Mackie & Worth, 1989). When information is provided by an outside, expert source like a researcher (i.e., written information provided in Studies 1 and 3), participants are motivated and able to scrutinize the information, which changes their attitudes. However, when information is provided by peers in a debate setting, attitudes are unaffected. This may be because peers are seen as either competitors in the debate or as non-credible, non-experts and thus the information they provided was rejected. This supports the notion of biased information processing (Ellsworth & Ross, 1983): information that does not align with initial attitudes is discounted. Overall, these studies demonstrate that attitudes and voting behavior can be predicted and manipulated according to theories of information processing.

Implications for Research on Community Sentiment

Many community sentiment studies only use simple, quick surveys (Miller & Chamberlain, 2015) and, thus, are likely only measuring reactions, rather than actual attitudes. This supports Finkel's (2001) assertion that discrepancies between *assessments* of community sentiment and *actual* community sentiment are due to the distinction between reactions and opinions. While reactions are instant evaluations, opinions are much like attitudes: Stable and formed after careful consideration of information (Finkel, 2001; Miller

& Chamberlain, 2015). Measuring true attitudes requires time to allow individuals to process information or recall what they know about the attitude object; otherwise, researchers risk measuring simple reactions. While Justice Thurgood Marshall spoke only of the death penalty, these studies expanded the realm of possible attitude objects about which attitudes may change and discovered factors that influence whether those attitudes will change in a positive or in a negative direction.

Implications for Law

Community sentiment essentially describes what citizens believe the law “ought to be” (Finkel, 2001, p. 2). Accurate assessments of community sentiment are vital in upholding the legitimacy of the legal system. When laws are enacted that are out of line with community sentiment, the legal system is undermined because citizens believe the law should represent their preferences. No previous research assessed community sentiment about laws regarding behaviors of pregnant women. Lawmakers can use the present findings when making decisions about how or when to criminalize pregnant women for engaging in behavior that might harm the fetus. This community sentiment also could influence decisions from arguably the most important force in law, the Supreme Court (Finkel, 2001). Even if decisions at this level contradict existing law, they set a precedent, which lower courts can imitate in their decisions.

Limitations

There are several limitations to these studies. Snowball sampling and student samples can introduce bias in results and explain some differences found between Studies 1, 3, and 4. Snowball samples can produce results that do not generalize beyond the specific sample used because they are composed of individuals who are similar to each other. Although some researchers have discovered differences between student and community samples in legal decision making (Kerr & Bray, 2005; Narby, Cutler, & Moran, 1993; Reichert, Miller, Bornstein, & Shelton, 2011), in general, sample matters little (Bornstein, 2016). However, sample could relate to attitudes regarding some topics (e.g., Chomos & Miller, 2015), including pregnancy, as most college students are not likely parents and have little personal experience with pregnancy. This could explain somewhat different results of Studies 1, 3 and 4.

Additionally, many participants indicated in the thought listing exercises that they would require more information about each of the laws before indicating their support. Participants lacked familiarity with the topic, which was expected, but it was not expected that they would be uncomfortable rating their support without additional information. Future studies could instruct participants to rate their voting certainty for these laws using only information they have.

A common limitation in psycho-legal research is that participants rate their support or voting preference during a study that they know is not real and does not affect any other person. Such studies lack verisimilitude and might produce very different results if participants assumed their responses would affect real pregnant women (Bornstein & McCabe, 2005). Further, although all participants were 18 years old or older, they were not asked

whether they were eligible to vote (which may depend on issues of residency, identification requirements, etc.). Thus, consequentiality and verisimilitude are limitations of this study.

CONCLUSION

These studies support the notion that receiving information changes attitudes, specifically by demonstrating that attitudes are based on the first thoughts of the individual, whether or not information is received, the valence of information received, the source of the information (researcher, self, or other participant) and individual information processing. The Marshall hypothesis now has been extended to include support for laws regulating pregnancy behavior. This support for laws is referred to in psychology-law research as community sentiment. Researchers must be able to assess community sentiment reliably and accurately in order for the legal system to properly represent the population. Researchers studying community sentiment would be remiss not to consider theories of information processing and attitude change.

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APPENDIX A: STUDY 1 NARRATIVES

C-section: Sometimes doctors tell pregnant women that they should undergo a C-section surgery. Sometimes the fetus is in distress or is in a risky position within the mother's body. A C-section can facilitate delivery and potentially save the lives of the fetus and/or the mother. Women may refuse for many reasons, including: it is against their religion; they do not have insurance and cannot afford surgery; they do not trust their doctor; or they do not want to have a major surgery. C-sections have increased in recent years; this suggests that many lives have been saved, however many of these surgeries may be unnecessary.

Drug use: Officials estimate that between 5-10% of pregnant women use illegal drugs and 10-20% of pregnant women use legal drugs sometime during pregnancy. A child exposed to drugs can have lifelong problems with growth and development, education, social skills, and employment. Such children cost taxpayers money, however sending women to prison also costs taxpayers money. While imprisoning a mother during pregnancy will prevent her from doing drugs, she is unlikely to receive any treatment.

Sometimes doctors order pregnant women to follow medical advice, such as bed rest or avoiding exercise. These measures are necessary to protect the fetus from harm because it would be born too early. Some mothers cannot afford to miss work or have other children. Such situations make it difficult to comply with this advice.

HIV treatment: The chances that an HIV-positive, pregnant woman will transmit HIV to her fetus are about 25%. New experimental treatments are available to help prevent the spread of HIV from the woman to her fetus. These drugs are not always effective and have a risk of serious side effects. These drugs will promote the health of the child and prevent further spread of HIV.

APPENDIX B: STUDY 3 NARRATIVES***Negative Information:***

Sometimes doctors tell pregnant women that they should undergo a C-section surgery. Women may refuse for many reasons, including: it is against their religion; they do not have insurance and cannot afford surgery; they do not trust their doctor; they cannot afford to miss work after surgery; or they do not want to have a major surgery. Critics are concerned about the sharp increase in the number of C-sections performed over the years. They argue that doctors make more money if they perform a C-section as opposed to natural birth. Thus, many of these risky surgeries are unnecessary.

Officials estimate that between 5-10% of pregnant women use illegal drugs and 10-20% of pregnant women use legal drugs sometime during pregnancy. Sending women to prison would cost taxpayers millions of dollars, and it would be unlikely that the woman would receive any drug treatment while imprisoned. Additionally, it is difficult to enforce these laws. Doctors, bartenders, and liquor store employees likely would have to be involved if the justice system is to enforce the law.

Sometimes doctors order pregnant women to follow medical advice, such as bed rest or avoiding exercise. Some mothers cannot afford to miss work for many weeks. Some mothers have other children. Such situations make it difficult to comply with the advice.

The chances that an HIV-positive, pregnant woman will transmit HIV to her fetus are low (about 25%). New experimental treatments are available to help prevent the spread of HIV from the woman to her fetus. These drugs come with a risk of serious side effects for both the mother and the fetus. A study shows that 8% of the women who take the drug still transmit HIV to the fetus.

Positive Information:

Sometimes doctors tell pregnant women that they should undergo a C-section surgery to benefit the fetus. Sometimes a fetus is in distress or is in a risky position within the mother's body. A C-section can facilitate delivery and potentially save the lives of the fetus and/or the mother. Doctors are suggesting C-sections more often, suggesting that it is a safe procedure for both the mother and fetus. Supporters argue that C-sections are often necessary to protect the health of the baby and the mother. Thus, C-sections have saved many lives.

A fetus exposed to either legal or illegal drugs can suffer serious health problems or even death. A child exposed to drugs can have lifelong problems with growth and development, education, social skills, and employment. Many of these children will require foster care because their mothers cannot care for them. Drug-exposed children cost taxpayers millions of dollars in medical, education, housing, and employment services. Imprisoning the mother during pregnancy will prevent her from doing drugs and harming the fetus.

Sometimes doctors order pregnant women to follow medical advice, such as staying on bed rest or avoiding exercise. These measures are necessary to protect the fetus. If

the mother does not follow this advice, the fetus could be born too early and could suffer physical and mental harm that could last a lifetime.

The chances that an HIV-positive pregnant woman will transmit HIV to her fetus are fairly high (about 25%). New experimental treatments are available to help prevent the spread of HIV from the woman to her fetus. It also would prevent the child from further spreading HIV. These innovative drugs will promote the health of the child and society.

Control/Unbiased Information

Pregnancy is the carrying of one or more embryos or fetuses by female mammals, including humans, inside their bodies. In a pregnancy, there can be multiple gestations (for example, in the case of twins or triplets). Human pregnancy is the most studied of all mammalian pregnancies.

Childbirth usually occurs about 38 weeks from fertilization, i.e., approximately 40 weeks from the start of the last menstruation. Thus, pregnancy lasts about nine months, although the exact definition of the English word “pregnancy” is a subject of controversy. The medical term for a pregnant female is *gravida*, although this term is rarely used in common speech. The term *embryo* is used to describe the developing human during the initial weeks, and the term *fetus* is used from about two months of development until birth. A woman who is pregnant for the first time is known as a *primigravida* or “*gravida 1*,” while a woman who has never been pregnant is known as “*gravida 0*.” Similarly, the terms “*para 0*,” “*para 1*,” and so on are used for the number of times a woman has given birth.

Childbirth is the process by which an infant is born. It is considered by many to be the beginning of a person’s life, and age is defined relative to this event in most cultures.

A woman is considered to be in labor when she begins experiencing regular uterine contractions, accompanied by changes of her cervix — primarily effacement and dilation. While childbirth is widely experienced as painful, some women do report painless labors, while others find that concentrating on the birth helps to quicken labor and lessen the sensations. During the time immediately after birth, both baby and mother are hormonally cued to bond, the mother through the release of oxytocin, a hormone also released during breastfeeding.