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CIDE

EFFECTS OF EMOTIONAL AND UTILITARIAN APPEALS ON ATTITUDE CHANGE TOWARDS FORCED REHABILITATION FOR DRUG ABUSE

TESINA

QUE PARA OBTENER EL GRADO DE

MAESTRO EN MÉTODOS PARA EL ANÁLISIS DE POLÍTICAS PÚBLICAS

PRESENTA

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Para todas las personas cuyo derecho a la autonomía es sistemáticamente violentado.

Espero que esta pequeña contribución ayude a abrir el camino para hacer justicia.

Abstract

A well-established literature in the field of political psychology has studied the determinants of support for Human Rights. To contribute to the literature focused on support for rights, I study the effects of emotional and utilitarian appeals on attitude change towards Forced Rehabilitation (FR) for drug abuse through a survey experiment. In this paper, I argue that it is possible to modify the attitudes towards FR by appealing to the public's emotions ($d = 0.28$ for hypothesis H1) and utilitarian values ($d = 0.23$ for hypothesis H2). By changing citizen's attitudes towards FR, people who use drugs might benefit from 1) obtaining a lower probability of being forced into rehabilitation by family members or judiciary authorities and 2) less resistance from the public to the promotion and implementation of non-coercive drug treatment policies.

Content table

Figures index

Tables index

Effects of Emotional and Utilitarian Appeals on Attitude Change Towards Forced Rehabilitation for Drug Abuse

Drug abuse in Mexico is considered an important social (Puyana et al., 2017; Zedillo Ponce de León et al., 2019) and health problem (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, 2017) for which specialized treatment is required. Nevertheless, the Mexican government has not been able to respond efficiently to this issue. According to reports from the World Health Organization (2010), one of the biggest problems of drug abuse in Mexico is that there is not enough capacity in the health system to care for all patients that need treatment. From 2006 to 2012 in Mexico, while only 2.91% of drug policy budget was assigned to treatment and prevention programs, 97.07% was assigned to law enforcement (Purón-Cid, 2014). Furthermore, public records indicate that there were only 43 public residential treatment centers in Mexico, yet 1984 private ones, from which 89% were based on mutual-aid models rather than on professional services (Martín del Campo Sánchez, 2013). Given this lack of supply of public drug treatment services, private organizations have stepped in, emerging from Alcoholics Anonymous (AA), an old tradition of mutual aid, into the informal treatment centers known as *annexes.*[1] These centers provide a relatively inexpensive treatment option for individuals who use drugs, whose families cannot afford to send them to professional residential treatment centers. Data from Mexico indicate that, from people who use drugs that have received treatment, 42.6% received treatment at an *annex* at least once (Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, 2017).

Conventional wisdom leads many citizens to believe that the treatment provided at *annex* is helpful in the recovery of the individuals who are interned there. Yet the public is not fully aware that most *annexes* operate beyond regulations and are known to be problematic and dangerous. Annexes tend to have inadequate facilities, tend to treat patients abusively (López de Lara, 2020; Pérez, 2019; Saucier, 2016), and tend to be exposed to narco-violence (Espinosa, 2020). Furthermore, annexes typically practice Forced Rehabilitation (FR). That is, they force individuals to receive treatment for drug abuse without asking for their consent or even against

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[1] Colloquially known as "*anexos"* in Spanish. These centers are not recognized by the Mexican Association of Alcoholics Anonymous (García de León, 2011).

their expressed refusal. Unsurprisingly, evidence suggests that treatment provided at annexes has a noxious effect on individuals with a problematic use of substances (Rafful et al., 2020; Werb et al., 2016). Yet, professionals, politicians, policymakers, and citizens frequently endorse FR. Is it possible to dissuade them from supporting this practice?

I argue that it is. Specifically, I contend that by appealing to utilitarian and emotional arguments, activists and policymakers can persuade the public to abandon their support for FR and to even oppose the practice. To test this hypothesis experimentally, I developed an experiment in which individuals are exposed to arguments for and against FR.

The results of the experiment confirm that it is possible to persuade proponents of FR by appealing to reason and emotions. These findings contribute to the literature in political psychology by explaining the effects of emotional (Gross, 2008; Lang & Yegiyan, 2008; Ridout & Searles, 2011) and utilitarian appeals (Chaudhuri et al., 2010; Everett et al., 2020) on attitude change (Bohner & Dickel, 2011; Holbrook, 2011; R. E. Petty et al., 1997; R. E. Petty & Briñol, 2010) towards forced rehabilitation, and how this knowledge can be applied in shaping policy attitudes and preferences. Literature from public policy studies and political science suggests that policy is strongly linked to public opinion (Burstein, 2010; Page & Shapiro, 1983; Wlezien & Soroka, 2016), even for issues as morally charged as drug treatment (Matheson et al., 2014).

In the next section, I briefly review some concepts and theories of attitudes and attitude change. Then, I present the two types of appeals evaluated in this thesis: utilitarian and emotional. Afterward, I provide a theoretical rationale about why they can help promote attitude change. Later, I present a set of hypotheses[2] and test them empirically. Finally, I present my conclusions and discuss the implications of my results for public policy.

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[2] Readers might notice that hypotheses are not presented in this paper in ascending order from H1 to H7. My hypotheses are preregistered (Martinez-Velasco & Zizumbo-Colunga, 2019). Since I respect the numbering that was given to them in the preregistration, I present them in a different order in this article.

The Influence of Attitudes on Policy Preferences

It is our nature as humans to continuously evaluate the stimuli that surrounds us. Individuals often make judgements about their peers, based on their traits, habits or even their appearance. Individuals will also judge objects, groups, situations, places, and behaviors based on affect and beliefs (Albarracín et al., 2005). Most researchers agree that an attitude is "an evaluation of an object of thought. Attitude objects comprise anything a person may hold in mind, ranging from the mundane to the abstract, including things, people, groups, and ideas" (Bohner & Dickel, 2011, p. 392).

On the one hand, attitudes have driven our understanding of the social world for quite some time. Since the beginning of the subfield, social psychologists have been concerned with the determinants and consequences of attitudes (Thomas & Znaniecki, 1918). They have noted that attitudes have important effects on individuals' willingness to participate in social activities, expressing support and opposition to other people's rights, and honoring the rights of their employees (Ajzen & Fishbein, 2005). Political scientists have also investigated citizens' attitudes as they relate to their support for democracy (Almond & Verba, 2015; Welzel, 2007), the rule of law (Malone, 2010), and the implementation of policies that violate individual and human rights (Dasandi et al., 2021; Krause, 2014; Moghaddam & Vuksanovic, 1990).

Why are attitudes important? Attitudes are determinants of the demand for a service. For example, if individuals hold positive attitudes towards FR, it will be more likely for them to request such services for their family members, therefore increasing the supply of FR (Gale, 1955). Another example of a policy that has its roots on negative attitudes is punitive populism. For example, if individuals believe that undesirable behaviors (such as crime or drug abuse) can be reduced by implementing harsher punishments (or treatments, such as FR at annexes), they will be more supportive of such measures, regardless of their effectiveness (Wood, 2014). Further, we study attitudes because they are strong predictors of behaviors under the right circumstances. While studies have found some limitations in the capacity of attitudes to predict many forms of behavior, psychological research has also found attitudes towards specific behavior to be highly predictive (Ajzen & Fishbein, 2005). For example, individual's negative attitudes towards people smoking in closed areas should be a good predictor of individual's reluctance to smoke indoors. Furthermore, studying attitudes is relevant because they shape

policies by legitimizing them (or questioning them) through social discourse in democratic regimes (Staerklé, 2009). For example, citizens that have negative attitudes towards abortion might be more inclined to lobby their representative to block initiatives that allow women to get free abortions at public hospitals, while citizens that have positive attitudes towards abortions might be more propense to request public education officers to implement educative programs to teach schoolgirls about their sexual rights.

Changing attitudes through moral appeals

Contemporary scholars have studied how communication can shape attitudes. For example, in the seminal Yale Communication and Attitude Change Program, researchers investigated how to persuade U.S. soldiers to support certain measures or orders by manipulating different aspects of a message's source or content (B. T. Johnson et al., 2005). This project resulted in an extensive research agenda on the influence of communication on attitudes. Deriving from it, we have learned that warnings (Papageorgis, 1968; van der Linden et al., 2020), corrections (Brashier et al., 2021), guilt & shame frames (Baek & Yoon, 2017), rational frames (Burlone & Richmond, 2018), positive & negative frames (Maheswaran & Meyers-Levy, 1990), humor (Feldman & Chattoo, 2019), and lying (Petrocelli, 2021) can propel citizens to change their attitudes.

For thousands of years, scholars and rhetoricians have contended that attitudes can be changed by arguing how behaviors and policies are right or wrong, virtuous or vicious. Some have come to call this as moral argumentation (Strandberg, 2012, p. 89). Previous research on this area has shown that moral argumentation can be used to frame political events and public issues in terms of right and wrong, from presidential speeches (Shogan, 2007), diplomatic stalemates (Boyd-Judson, 2005), gambling policy (Euchner et al., 2013; Ferraiolo, 2013), abortion (Roh & Berry, 2008), end-of-life care policy (Burlone & Richmond, 2018), prostitution (Schmitt et al., 2013) LGBT rights (Mucciaroni, 2011; Schmitt et al., 2013), and of course, drug policy (Euchner et al., 2013; Meier, 1999). Moral arguments are used to prime the values and emotions of citizens efficiently, since this kind of information is processed through automatic moral "intuitions" that allow individuals to make judgements on the fly, through "quick and automatic" evaluations (Haidt, 2001, p. 823).

Back in the day, Plato, one of the most prominent philosophers, proposed the myth of the chariot, in which he said that souls were like a chariot pulled by two horses, one of them docile and obedient and the second one unruly (Belfiore, 2006). Of course, the first horse was an analogy of reason, and the second one of emotions. Perhaps they constitute the two most classic, common, and effective types of moral argumentation (i.e., Adler et al., 2016; Harrison & Michelson, 2017; Lindauer et al., 2020). I argue that studying the effects of utilitarian and emotional appeals on attitude change is important, given the pervasiveness of these types of

rhetoric. The former indicate actions or policies are right if they maximize social utility (or wrong if they minimize it). The latter communicate the morality of policies based on the emotional effect that thinking about their consequences can trigger in the audience. In the following two subsections, I present how both types of arguments can be used to change the attitudes of individuals towards FR.

Appealing to utilitarianism

> *"All social inequalities which have ceased to be considered expedient, assume the character not of simple inexpediency, but of injustice, and appear so tyrannical, that people are apt to wonder how they ever could have. been tolerated; forgetful that they themselves perhaps tolerate other inequalities under an equally mistaken notion of expediency, the correction of which would make that which they approve seem quite as monstrous as what they have at last learnt to condemn."*
>
> ~ John Stuart Mill (1863)

There are several types of strategies that are used to persuade individuals regarding certain topics. One of the most common types is argumentation, in which individuals present claims and supporting premises to make an audience accept the proponent's position (Besnard & Hunter, 2008). Arguments depend on the presentation of facts and warrants; therefore, argumentation is an approach to persuasion that is based on reason, logic, and evidence.

Argumentative approaches are often utilitarian[3] in nature, that is, they are targeted towards reason and are typically used by academics and activists, perhaps because they assume that their audiences are rational agents that want to maximize social utility. In fact, the justification for this paper is framed under utilitarian arguments: I contend that FR is undesirable because it minimizes the well-being of people who use drugs and does not yield the social benefits it promotes.

I argue that utilitarian arguments can be persuasive because of several reasons. First, utilitarian arguments might trigger utilitarian values which are widespread across our culture, even if citizens are not formally educated about them. Thus, by appealing to values that individuals already embrace, arguments of this kind, by their very structure, may trigger attitudinal change (Honkanen & Verplanken, 2004).

Second, utilitarian arguments may reveal mechanisms by which individuals directly and indirectly benefit with policy. Rational choice theory suggests that individuals try maximizing their gains while minimizing their losses, guided by a cost–benefit analysis (Boudon, 2003). To the extent that this type of argumentation makes evident the social utility of FR it might, indirectly, also unveils the ways in which individuals can personally benefit from this policy (Paternoster et al., 2017).

A third possible explanation is that, to produce any kind of moral judgments, which can result in attitude change, it is first necessary for individuals to notice that there is a moral dilemma (C. E. Johnson, 2018). Individuals might change their attitudes simply by being provided with any kind of motive (i.e., an utilitarian appeal), not because of the persuasiveness of the argument, but because individuals were not aware of the existence of a moral dilemma. As John Stuart Mill (1863) said, sometimes individuals assume that certain immoral actions are rather righteous because they are expedient, but then something happens that makes them reevaluate their attitudes and determine that they were tolerating or even doing an injustice. Therefore, since I

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[3] Utilitarianism posits that morally right actions are those that maximize the good consequences and/or minimizes the negative consequences that are produced by those actions (Driver, 2014; Knapp, 1999).

am interested in finding out if by presenting utilitarian appeals to citizens they would change their original attitudes towards FR, I propose the following hypothesis: [4]

- H2 (directional). Utilitarian appeals produce will generate a short-term attitude change.

Appealing to emotions

"If it ain't got emotion, it ain't got moral swing. Emotional conflict provides the telltale signature of a moral dilemma."

~ Marc Hauser (2007, p. 223)

"The heart has its reasons, which reason does not know"

~ Blaise Pascal

There is a popular story from the oral tradition[5] in which a young boy wants to buy one puppy from a farmer, who has four of them up for sale. The boy observes a fifth, smaller, limping puppy that tries to run towards the rest, and asks the farmer if he can buy that one. The farmer tells him no, because that one would not be able to run and play with him as the others would.

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[4] I also present two specific sub-hypotheses:
- H3 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing respect towards drug abusers' rights will reduce support for FR in comparison to the control group.
- H4 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing that the state should protect drug abusers' health will increase support for FR in comparison to the control group.

Hypotheses are numbered according to the original numbers that were assigned to them in the preregistration (Martinez-Velasco & Zizumbo-Colunga, 2019).

[5] There are several versions of this story. The author is unknown. The version that I cite comes from the following blog: https://www.reshareworthy.com/boy-surprises-farmer/

The boy then rolls up one leg of his trousers, revealing a steel brace, telling the farmer that neither he can run. The farmer then begins to cry, giving the boy the puppy that he wanted and refusing to charge him for it, telling him that he cannot charge for love. Emotionally charged stories like this one are typically deployed by those seeking to persuade the public of a specific course of action, whether this implies buying a product, voting for a specific candidate, supporting a particular public policy, or simply changing their opinion regarding a particular matter.

Emotions are episodes of "interrelated, synchronized changes in the states of all or most of the five organismic subsystems in response to the evaluation of an external or internal stimulus event as relevant to major concerns of the organism" (Scherer, 1987, p. 7, 2005, p. 697). That means, from an evolutionary perspective, that emotional responses allow individuals to adapt to their environments during their own lifespans, since those responses help them resolve the problems that evoked them in the first place (Lench & Carpenter, 2018). Emotions play an important role in attitude formation and change, driving most social attitudes (Zajonc, 1980). Studies have found that mood affects attitudes: individuals who were manipulated into a happy mood had more positive attitudes towards a fictional character than those who were manipulated into a sad mood (Forgas & Bower, 1987). Another study found that transient moods can also impact attitudes towards politics, life expectations, and moral and quality-of-life judgements (Forgas & Moylan, 1987). Emotions do not only affect attitudes, but they are also relevant for the development of moral behavior (Hoffman, 2000; Spinrad & Eisenberg, 2014).

I argue that emotional appeals can be as persuasive or even more so than utilitarian appeals for several reasons. One possible explanation comes from empathy, which is defined as a set of emotional responses towards a situation a third party is in, in which an individual either begins sharing the observed emotional state (Eisenberg & Strayer, 1987), or experiences some other emotional state in response, such as vicarious joy (Batson et al., 1991; Smith et al., 1989). Emotional appeals produce attitude change through altruistic motivation. That is, emotional appeals produce altruistic motivation because individuals that have the capability of empathizing (that is, they are not psychopaths) will typically respond with the objective of increasing the welfare of a third party when noticing that they are in jeopardy (Batson, 2014). In turn, individuals who are experiencing altruistic motivation might respond by changing their

attitudes towards the jeopardizing situation because they want the third party to stop suffering from it (Smith et al., 1989). Therefore, to the extent that emotional appeals trigger empathic motivation from individuals by communicating that a person is suffering because of FR, individuals will change their attitudes towards FR because they will not want people who use drugs to suffer because of being forced into an annex.

Another possible explanation comes from acknowledging that, to change their attitudes towards an issue, individuals must morally judge them; yet, to produce this judgement, it is first necessary for individuals to notice that there is a moral dilemma (C. E. Johnson, 2018). One of the best ways in which it is possible for an individual to notice a moral dilemma is by triggering an emotional response (Hauser, 2007). Therefore, I argue that, to the extent that emotional appeals trigger an emotional response from individuals, individuals will notice a moral dilemma which should in turn result in attitude change towards FR due to the moral judgment process.

This is where the design of carefully crafted scenarios comes in. Researchers (or politicians, marketers, etc.) can craft scenarios where they provide information to individuals about a situation where someone is suffering or in danger to induce altruistic motivation or a more general process of moral judgement. This mechanism might be particularly effective because it reframes the problem under a visual image, priming those automatic moral intuitions as an effective mean of persuasion (Haidt, 2001). Having discussed this, I argue that it is possible to promote attitude change by inviting citizens to picture the situation of a person who uses drugs being forced to receive treatment or, alternatively, the situation of a family member who does not know how to help a family member who suffers from drug abuse. Therefore, I propose the following hypothesis:[6]

- H1 (directional). Emotional appeals produce will generate a short-term attitude change.

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[6] I also present two specific sub-hypotheses:
- H5 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that addicts suffer because of forced rehabilitation programs will reduce support for FR in comparison to the control group.
- H6 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that families of addicts also suffer because of their family member's addiction will increase support for FR in comparison to the control group.

Hypotheses are numbered according to the original numbers that were assigned to them in the preregistration (Martinez-Velasco & Zizumbo-Colunga, 2019).

Reason vs. Emotion: Which type of appeal comes out on top in the battle for persuasion?

There are reasons to believe that the effects of utilitarian and emotional appeals might be different from each other. Why would emotional appeals be more effective than rational appeals? One reason is that, when individuals are exposed to emotional appeals, they tend to pay more attention to the message even if the content is not directly relevant to them (Gong & Cummins, 2020). Individuals need to be motivated and capable of processing the information that is provided to them to change their attitudes towards an attitude object when exposed to rational appeals (Dainton & Zelley, 2005). That is, emotional appeals are more salient and more easily recalled than rational appeals (Harry C. Zinn, 2000). An explanation for this would be that affective states such as sadness, anxiety or fear usually increase systematic processing of information while decreasing heuristic processing (Isbell et al., 2006). That is, individuals will process a more thoughtful analysis of situations when experiencing this type of emotions. Therefore, if individuals empathize with the negative emotions of people who use drugs that are forced into treatment, they will give a more extensive reconsideration of their stance towards FR than individuals who receive utilitarian appeals.

Regarding rational appeals, individuals might be more persuaded by these because by receiving cognitive inputs, they have more available information to make informed decisions. Individuals process this type of information through a central route, which has an increased capacity to persuade individuals for longer periods of time (R. Petty & Cacioppo, 1986). Further, rational appeals can be more effective than emotional appeals when an audience has a predisposition to this kind of argument, cases in which emotional appeals might backfire, reinforcing attitudes rather than changing them (Rocklage et al., 2018).

Nonetheless, it is also possible to argue that content-based elaborations are responsible in determining attitude change for both emotional and rational appeals, therefore, we should not expect effects to be different, even if the former is determined by affective responses and the latter by cognitive responses (Rosselli et al., 1995). In fact, previous empirical evidence has shown that rational and emotional effects on attitudes are not always different (Gong & Cummins, 2020). However, I argue that even from an appeal-agnostic stance, it is important to provide more evidence on this regard to contribute to the literature on the "reason vs. emotion" debate. Therefore, I propose the following hypothesis:

- H7 (non-directional). Emotional and utilitarian appeals will have a different impact on support for FR.

In summary, in this section I explained how appealing to reason or to emotions can promote attitude change towards FR through different causal mechanisms (such as moral judgement processes or utility maximizing behaviors such as cost-benefit analyses), proposing a set of seven falsifiable hypotheses. In the following sections, I will first discuss the methods that I deployed, then I present my data analyses where I test my hypotheses. Finally, I present my conclusions.

Methods

To test the hypotheses presented before, I conducted a laboratory experiment in which individuals were randomly exposed to different types of arguments in favor/against FR. In this section, I present the standards and rationale for all data collection and analyses. I divided the section into three subsections. First, I broadly describe the laboratory's procedures for data collection and the sampling design. Then, I describe the research design and its merits. Finally, I describe the analytical strategy.

Sampling and laboratory procedures

The main objective of the study is to produce an internally valid test of the hypotheses shown before. To achieve this objective, I participated in the 2019 CIDE-UECS Omnibus Study. The Omnibus is an Open Study in which CIDE's Social Science Experimentation Unit (UECS) recruits a sample of voluntary university students who participate in several experimental studies designed by global academics. The study promotes and introduces experimental social research to students while allowing researchers to collect valuable data. Studies that are included in the Omnibus must commit to the protection of human subjects by adhering to rigorous standards. This is guaranteed in part thanks to the reviewal and approval of research projects by authorities from CIDE and Vanderbilt University's Institutional Review Board (No. 190684).

To collect data for the Omnibus Study, UECS' staff goes through several steps. First, the director meets with academic officials from universities to explain that the project has the goal of 1) promoting the interest in scientific research in social sciences among students and 2) to nurture worldwide collaboration between social scientists. The Omnibus study typically includes around 12 studies per round. After persuading officials to participate in the study, collaboration is secured through the signature of participation agreements between officials from both CIDE and participant universities.

After this procedure, staff from the UECS contacts a list of professors that are provided by each university, where they receive information about the purpose of the study and where they are requested to voluntarily provide an incentive for their students to participate in the study, such as extra-credit for their class. Afterward, the staff visits previously authorized classrooms to explain the purpose and dynamics of the study and to invite them to participate, reminding them

that they might be eligible to receive academic incentives from some of their professors if they choose to participate. Once this recruitment phase is finished, the data collection begins. First, staff from the UECS sets up the mobile laboratory. To do this, the staff installs desk dividers to assure that participants cannot see the screens of other participants. They also set up Dooblo's SurveyToGo Surveyor software, which is used to display the surveys and upload results to the server. Posters inviting participants to remain seated and in silence during their participation in the study are set up in the laboratories' walls. If the computer laboratory has windows, the staff also blinds them so that participants are not exposed to distractions from the outside. Finally, the staff sets up a laboratory reception with computers, where students are once again explained the purpose of the study and the procedures that they must follow.

Participants register their participation at the reception, and after this they are asked to wait to be seated. Before entering the laboratory, participants must turn off their phones and to leave their belongings in a locker. They are seated at a station afterward, where they are asked to wear a headset to reduce noise distractions. They are then presented with an informed consent form. They can choose to proceed with the study, do an alternative activity (reading a text about research methods) or leave the laboratory at this point. If they choose to proceed with the study, they are presented with all applicable studies in a random order after being shown a set of pre–treatment items, that includes measurements of attitudes, values, preferences, and psychological dispositions. Before finishing the survey, participants are debriefed, that is, they are explained some details about the treatments they were exposed to. Finally, when they finish the study, participants are asked to raise their hand, after which a staffer approaches them, escorts them out of the laboratory and provides them with some candy, and a note with an acknowledgment for their participation, which also includes information to contact any researcher from the study.

For this round of the Omnibus study, we obtained a sample size of 1018 participants thanks to the support from contributing universities, professors, and students. After the Omnibus' data collection was finalized, the UECS sent a list of participants to professors, so they were able to provide the extra-credits that were offered. Participation data were not linked to the studies data, to assure privacy. Participants came from a convenience sample of students from 4 universities, including both CIDE's campuses, Universidad Cuauhtémoc Plantel Aguascalientes (UCA), Instituto Tecnológico de Pabellón de Arteaga (TecNM Pabellón), and Universidad de Monterrey

(UDEM). While this sample is not necessarily statistically representative of the Mexican population, I argue that it might not be very different from it. Most participants come from TecNM Pabellón, whose campus is in a rural area. It typically recruits students from impoverished localities, providing them with a technical background, rather than a more normative-oriented education that typically occurs when studying humanities or social sciences. Nonetheless, even if the sample is not representative, it still is a robust sample that allows for testing the effects of moral appeals on attitude change, given the fact that attitudes towards FR were diverse and widespread.

I removed three participants from the original sample of 1018 due to a programing error that caused them to be exposed to items from both the dissuasive and persuasive studies. I also removed another 4 participants who met the exclusion criteria (their total response time was 2.5 standard errors below the mean). Therefore, the final sample size includes 1011 participants.

Research Design

Causal inference is an essential issue in social science, since researchers are concerned not only with describing social phenomena but also with explaining, predicting, and controlling those very same phenomena (Coon & Mitterer, 2013). Nonetheless, to achieve adequate causal inferences, proper methods must be used. When recurring to observational designs, research is vulnerable to several biases that lead to biased estimates of effects.

For example, omitted variable bias (Sackett et al., 2003) occurs when we want to model a causal relationship through regression but relevant variables are not available in the dataset or are simply not included in the model, resulting in an error term that is correlated to the regressors, which in turn can bias estimates. It is also possible to find simultaneity bias, that is, when the independent variables determine the dependent variables in a model and vice versa (Wooldridge, 2020), usually finding that, not unlike in omitted variable bias, regressors are correlated with the error term. Researchers can also find dynamic endogeneity, that is, when a dependent variable level in the past has determined the independent variable in the present (Li et al., 2021; Nickell, 1981). Selection bias occurs when subjects from the study sample are systematically different from the target population, that is, the represented population is distorted because of a

sampling rule that can be either (or both) a decision from researchers or (and) studied subjects (Heckman, 1990).

While several econometric techniques help in attenuating these problems, it is not always possible or adequate to deploy them. For example, instrumental variables regression methods should allow for the unbiased estimation of causal effects, yet this method can be troublesome for several reasons: 1) instrumental variables are hard to find, 2) if available, weak instruments[7] result in biased estimations, and 3) in many cases, instrumental variables do not even exist at all (Martens et al., 2006; Murray, 2006). Other techniques such as Propensity Score Matching and Difference-In-Difference models are also usually available and can allow for unbiased estimations under certain conditions, but they have their own set of problems and assumptions (Caliendo & Kopeinig, 2008; Wing et al., 2018).

Therefore, to avoid these methodological problems, several researchers interested in extracting valid causal inferences recur to experimental methods (Arceneaux, 2010; Druckman et al., 2011). Social experiments allow researchers to select on independent variables and to assign them randomly (therefore, exogenously) to participants. This procedure guarantees that the data meet the conditional independence assumption (when paired with the recruitment of large samples), allowing researchers to extract valid causal inferences. That is, properly designed experimental methods solve the problems of endogeneity, selection, and omitted variable biases (King et al., 1994). Experimental researchers are typically concerned with producing results that are internally valid, that is, they measure what they are supposed to measure, and reliable, they can be replicated by any researchers (Field & Hole, 2003). Further, experimental survey research is typically used to research the causal effects of manipulating political preferences and public opinion. There are three types of survey designs: permissive designs simply aim to allow participants to provide answers according to their predispositions (without any kind of encouragement); manipulative designs, whose objective is to induce individuals into acting against their predispositions; and facilitative designs, in which researchers "push" individuals into doing what they are already predisposed to do. One form of facilitative design can be deployed using arguments and counterarguments. In this type of research, participants are

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[7] Weak instruments are those instruments that are weakly correlated to endogenous regressors (Andrews et al., 2019).

requested to take a stance on a particular issue, then they are given a reason (or none) to reconsider their stance (Sniderman, 2011).

Social psychologists typically measure attitudes by capturing ordinal data from Likert-scales or similar constructs (Norman, 2010). When a pretreatment response is not extreme (for example, is neither 1 nor 7 in a seven-point scale), a posttreatment measurement will behave in one of the following fashions: a) the measurement will move in the opposite direction, that is, towards the farthest extreme, b) the measurement will move in the previous direction, that is, towards the closest extreme, and c) the measurement will not change. When pretreatment measurements are extreme, the only two available options will be a) and c). While it is possible for individuals to strengthen their original attitudes toward an attitude object, the main goal of my research is to discover if it is possible to dissuade them from their original positions. Therefore, for this paper, I define attitude change as the change in a measured attitude in the opposite direction of the original measurement.[8]

Therefore, for this study, I decided to use a between-subjects, facilitative, experimental design. First, I took a pre-treatment measurement of attitude towards forced drug rehabilitation, collecting a numeric rating through a slider that had a 0-100 scale in which 0 meant absolute opposition to FR and 100 absolute support for FR (the question asked: *How much do you agree with the next phrase: Sometimes it is justifiable to intern people who use drugs at "annexes" even against their will. ["Annex": hospital where people who use drugs are treated]*).[9] According to their response, I assigned subjects to participate in the persuasive study or in the dissuasive study. I assigned subjects whose response indicated preference towards forced rehabilitation (supporters, n=433) to (dissuasive) study #1, where the survey would randomly show an emotional, utilitarian, or neutral (control) appeal intended to dissuade the subjects from endorsing forced rehabilitation. At the same time, I randomly assigned those who indicated rejection towards forced rehabilitation (opposers, n=326) to (persuasive) study #2 where I also

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[8] Moreover, I believe it is important to state that the purpose of my research is not only to study how attitude change towards FR can be promoted, but to do so in an ethical manner. Therefore, I adhere to Messina's (2007, p. 33) ethical persuasion, which he defines as "An attempt through communication to influence knowledge, attitude or behavior of an audience through presentation of a view that addresses and allows the audience to make voluntary, informed, rational and reflective judgements."

[9] The original wording in Spanish is available at appendix 3.

exposed subjects to emotional, utilitarian, or neutral (control) appeals intended to persuade them from endorsing forced rehabilitation. Finally, I randomly assigned subjects whose response was neutral (indecisives, those whose response value was between 40 and 60, n=256) to either the dissuasive or the persuasive study. Finally, after finishing with the experimental tasks, I took another measurement of support towards forced rehabilitation. In the end, 559 participants were assigned to dissuasive study #1 and 456 participants were assigned to persuasive study #2. Figure 1 shows an experimental design flowchart so that the reader can observe the design more clearly.

Figure 1. Experimental design flowchart.
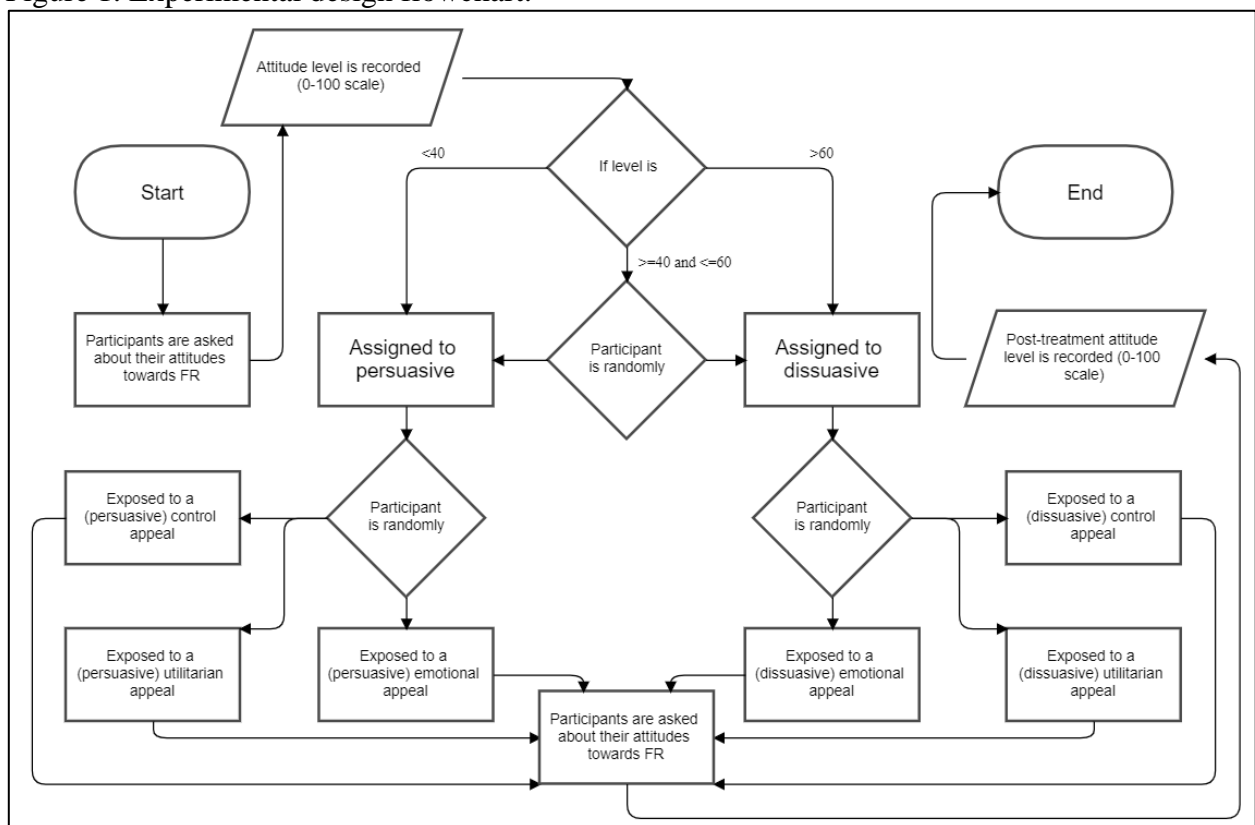
Source: Own elaboration.

Figure 1 clearly describes the data collection process, as I previously described. Also, table 1 shows the translated wording from the experimental tasks that I deployed in both studies:

Table 1. Experimental tasks' translated wording.[10]

Phase	Persuasive study		Dissuasive study	
Beginning of the experimental task's text	Some experts say that it is never justified to intern people who use drugs against their will at "annexes". Other experts *disagree.* They say that treating addicts is a complex issue.		Some experts say that sometimes it is justified to intern people who use drugs even against their will at "annexes". Other experts *disagree.* They say treating addicts is a complex issue.	
Treatments	**Controls**	**Utilitarian appeal**	**Emotional appeal**	**Utilitarian appeal**	**Emotional appeal**
	Participants are not shown any text in the treatment section if they are assigned to either control group.	Severe addicts often cannot see the long-term benefits of treatment and can happily use drugs until their death. Therefore, these campaigns end up with few real results. The government needs to nudge addicts to help them get out of trouble.	Many families suffer greatly from having a family member with addictions. Imagine a mother's crying, suffering and despair at having a child who does not want to give up drugs. People say we need to be more human and recognize that people who live near addicts also have feelings and suffer.	Severe addicts often fake progress to get out of forced treatment and then they go back to their old habits. Therefore, these campaigns end up with few real results. The government needs to persuade addicts if it wants to see effective results.	Many addicts suffer greatly from being locked up against their will. Imagine a person's crying, suffering and despair as they are locked up and are not able to leave an annex. They say we must be more human and recognize that addicts also have feelings and suffer.
End of the experimental task's text	How much do you agree with the following sentence? Sometimes it is justified to intern at "annexes" people who use drugs, even against their will. [Annex: hospital where people who use drugs are treated]			

Source: Own elaboration

Table 1 shows how participants can be assigned to three conditions in both the dissuasive and the persuasive studies: they are either assigned to a control, an emotional appeal, or a utilitarian appeal. The table also includes the question that I used to measure the participants' attitudes towards FR.

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[10] Appendix 3 records the original Spanish wordings that I used in the survey.

Good Research Practices

It is possible to achieve progress in science when scientists reduce uncertainty in their models, which are simplifications of nature, designed to understand phenomena better (Nosek et al., 2018). By improving the quality of their models, scientists can apply their scientific knowledge to increase the accuracy of their predictions. Nonetheless, for scientists to improve their models, they must use the best available scientific practices, while avoiding Questionable Research Practices (QRPs). QRPs have not only hampered scientists' ability to make accurate predictions of social phenomena, but they have damaged confidence and credibility in psychological science (Pashler & Wagenmakers, 2012), while laying the foundations for the infamous "replication crisis" (Open Science Collaboration, 2015). Scientists must be able to distinguish between predictions, which involve the process of collecting of data to test associations between variables, and postdictions, which involve the process of generating hypothesis from the analysis of available data. This is relevant because post-hoc explanations involve a process of circular reasoning, where exploring the data allow for generating hypotheses, while the same data are used to validate those hypotheses (Nosek et al., 2018). Moreover, this process is usually associated with hindsight bias (Roese & Vohs, 2012), in which researchers perceive, after observing their results from data analyses, that they had an ex ante explanation. That is, researchers perceive that they "knew it all along", even if they did not.

Further complicating matters, researchers are also affected by confirmation bias, which is defined as "selective attention to the evidence that may confirm the hypothesis and neglect of the data that may refute it" (Lewicka, 1998, p. 235). This bias is problematic for scientific development because researchers can interpret ambiguous information in a way that makes it compatible with previous beliefs, and because they might look for information that supports their preconceptions rather than defy them (Roese & Vohs, 2012; Wagenmakers et al., 2012). Researchers concerned with replicability and open science have also noted that since there is an incentive in academia to maximize the number of publications, researchers are more likely to use QRPs. For example, practices such as underpowering are more prone to provide significant results when performing hypothesis-testing (Bakker et al., 2012). Some researchers believe that underpowering is incentivized by publication bias, which is defined as "withholding negative results from publication" (Joober et al., 2012, p. 149). Further, there is an ethical argument against publication bias, since it distorts scientific knowledge, preventing other researchers to

be aware of possibly fruitless research projects and dishonoring the consent that participants provide to improve science (Joober et al., 2012). However, it is important to nuance that publication bias is not necessarily due to editors' preferences towards positive results (Olson, 2002), but it can occur due to researchers themselves: fear of rejection, lack of time, among other reasons can motivate such behavior (Mlinarić et al., 2017). Publication bias is closely related to selective reporting bias, with the latter being defined "as the selection on the basis of the results of a subset of the original variables recorded for inclusion in a publication" (Dwan et al., 2008, p. 1).

To minimize the noxious effects of these biases on research quality, methodologists have suggested that scientists should preregister their studies. Preregistration is the process of describing "hypotheses, methods, and analyses before a piece of research is conducted, in a way that can be externally verified" (van 't Veer & Giner-Sorolla, 2016, p. 2). That is, a preregistration is a declaration of all planned research procedures in a public document that should occur before data collection or at least before even auditing the data. Preregistration of research plans promotes intellectual humility, which in turn improves how credible research is, allowing researchers to recognize possible shortcomings and areas of opportunity (Nosek et al., 2019). Further, preregistration improves science because it allows researchers to prioritize theoretical and methodological developments over positive results; it makes it possible to discriminate between confirmatory and exploratory research; and it reduces publication and reporting bias (van 't Veer & Giner-Sorolla, 2016). Finally, preregistration is necessary because null hypothesis significance testing is intended to predict outcomes rather than generating new hypotheses, therefore allowing to distinguish predictions from postdictions by declaring hypotheses and data analysis plans ex ante (Nosek et al., 2018). Therefore, to prevent those biases, we preregistered my hypotheses and design at the Open Science Framework site (Martinez-Velasco & Zizumbo-Colunga, 2019).

Confirmatory Data Analyses

In this section, I report statistical findings in the following order. First, I present results from both general hypotheses (H1 and H2). Second, I present results from two groups of specific hypotheses: those from the dissuasive study (H3 and H5) and those from the persuasive study (H4 and H6). Third, I report findings from hypothesis 7, in which I compare the effects from both types of treatment: emotional and utilitarian. Finally, I discuss limitations. I performed all data analyses from this section using Stata version 15.1 (StataCorp, 2017), unless stated otherwise.

General Hypotheses Report

Both general hypotheses (H1 and H2) are meant to test whether emotional and utilitarian appeals can change attitudes towards FR, either to dissuade or to persuade individuals:

- H1 (directional). Emotional appeals produce will generate a short-term attitude change.
- H2 (directional). Utilitarian appeals produce will generate a short-term attitude change.

To test these hypotheses, I first had to calculate the difference between pre- and post-treatment attitudes towards FR and store results in a new variable named $\Delta\ attitudes$:

$$\Delta\ attitudes\ =\ post\_treat\_attitudes\ -\ pre\_treat\_attitudes$$

Also, to be able to test hypotheses H1 and H2, I had to make data from both the dissuasive and the persuasive studies comparable. Therefore, I inverted the sign of the data in Δ attitudes from the dissuasive study (without altering the sign of the data from participants assigned to the persuasive study) and stored the data in a new variable called $Attitude\ Change$.

It is possible to observe how the data behaves as predicted in figure 2, which shows the general mean attitude change by group assignment:

Figure 2. General distribution of mean attitude changes, by treatment groups.
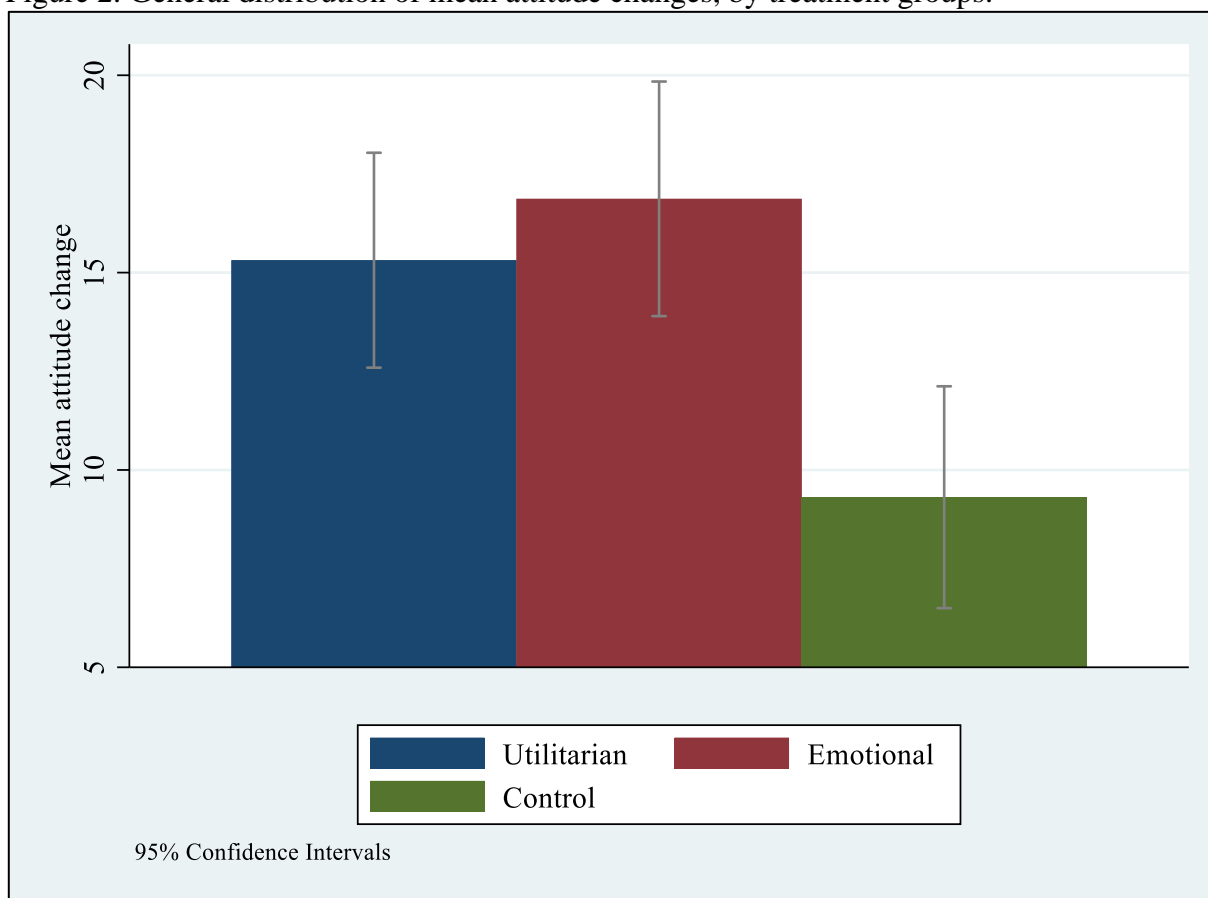
Source: Own elaboration.

In figure 2, it is possible to observe how while the control's mean attitude change (Standard Error) was 9.3 (25.1), it was considerably larger for both treatment groups, being 15.3 (26.3) for the utilitarian condition and 16.8 (28.1) for the emotional condition. But are these levels statistically distinguishable from each other? To evaluate whether this the case and provide evidence por hypotheses H1 and H2, I specified an Ordinary Least Squares (OLS) model, according to the following equation, where utilitarian and emotional conditions are dummy variables that indicates that a participant was assigned to either the utilitarian or the emotional treatment conditions:

$$Attitude\ Change = \beta_0 + \beta_1\ Utilitarian + \beta_2\ Emotional + u$$

It is possible to observe the results from model 1 in table 2:

Table 2. Change in attitude, model (1).

VARIABLES	Change in Attitude
	6.004***
	(1.994)
Utilitarian vs. Control	[1.952, 10.05]
	7.560***
	(2.084)
Emotional vs. Control	[3.46, 11.65]
	9.309***
	(1.432)
Constant	[6.33, 12.28]
Observations	1,011
R-squared	0.014

OLS regression coefficients with standard errors in parentheses
95% Confidence intervals in square brackets
*** $p<0.01$, ** $p<0.05$, * $p<0.1$ One-tailed t-test.*

Source: Own elaboration.

According to the regression coefficients[11] from table 2, I found that, in comparison with the control, participants' mean attitude change was 6.004 points greater than the control when assigned to the utilitarian condition and 7.56 points greater than the control when assigned to the emotional condition.[12] Hypothesis tests from both coefficients resulted statistically significant with confidence levels of 99%. In summary, these results reject the nulls for both hypotheses H1 and H2.

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[11] Since I found outliers in the dependent variable's distribution (which is non-normal), I included a quantile regression model in appendix 4 to increase estimator robustness (cf. Yu et al., 2003).

[12] Additionally, I calculated Cohen's d for both conditions, estimating an effect size for the utilitarian condition of $d = 0.23$ and an effect size for the emotional condition of $d = 0.28$. Both effects are larger than my estimated minimum detectable effects (with power p=0.8 and 95% confidence level). Power analyses can be found in appendix 1.

Specific Hypotheses Report

In this subsection, I first report the distribution of the means of all treatment groups for both the dissuasive and the persuasive studies. Then, I report results from statistical models from both studies.

Hypotheses H3 and H5 were meant to test whether exposure to emotional or utilitarian appeals can dissuade supporters from endorsing FR:

- H3 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing respect towards drug abusers' rights will reduce support for FR in comparison to the control group.

- H5 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that addicts suffer because of forced rehabilitation programs will reduce support for FR in comparison to the control group.

It is possible to observe how the data behaves as predicted by hypotheses H3 and H5 in figure 3, which shows the mean attitude decrease by treatment group:

Figure 3. Mean decrease in support for FR, by treatment group.
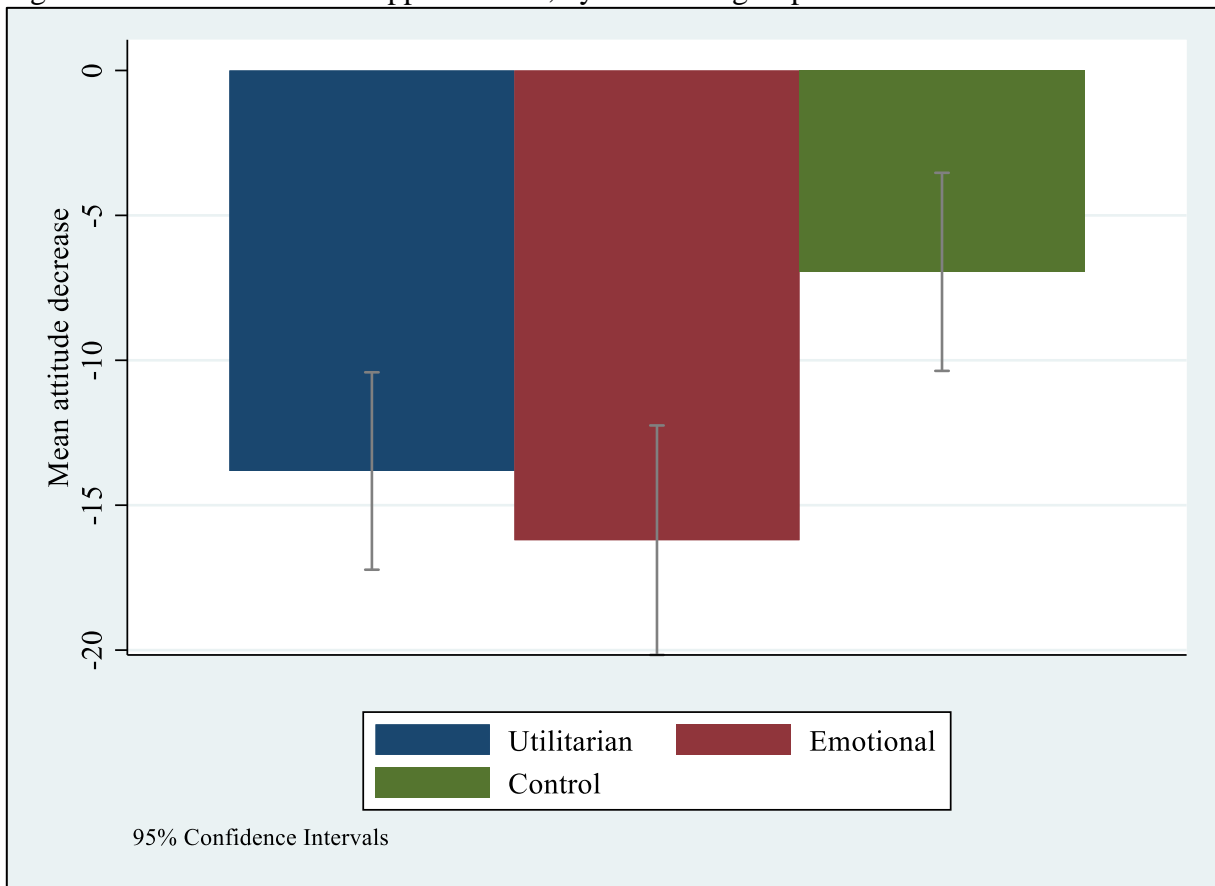
Source: Own elaboration.

According to figure 3, it is possible to observe how while the control's mean attitude decrease (Standard Errors) was -6.9 (23.01), it was considerably larger for both treatment groups, being -13.8 (24.2) for the utilitarian condition and -16.2 (27.5) for the emotional condition.

Hypotheses H4 and H6 were meant to test whether exposure to emotional or utilitarian appeals can persuade opposers to endorse FR:

- H4 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing that the state should protect drug abusers' health will increase support for FR in comparison to the control group.

- H6 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that families of addicts also suffer because

of their family member's addiction will increase support for FR in comparison to the control group.

It is possible to observe how the data behaves in figure 4, which shows the mean attitude increase by treatment group:

Figure 4. Mean increase in support for FR, by treatment group.
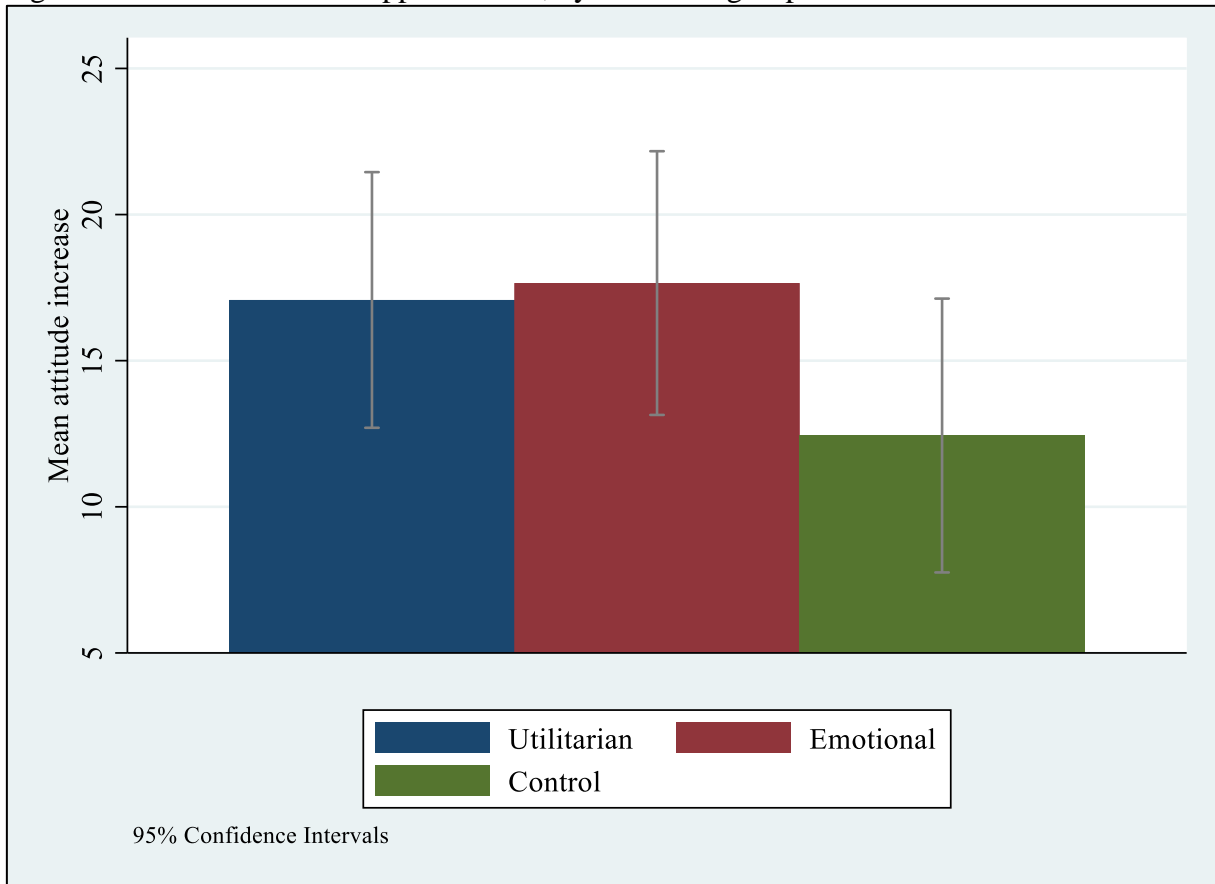
Source: Own elaboration.

According to figure 4, it is possible to observe how while the control's mean attitude increase (SE) was 12.4 (27.4), it increased further in both treatment groups, being 17 (28.6) for the utilitarian condition and 17.6 (28.8) for the emotional condition.

Results from both the dissuasive and the persuasive studies are consistent with my predictions. But are these levels statistically distinguishable from each other? To evaluate whether this the

case and provide evidence for hypotheses H3 through H6, I specified two Ordinary Least Squares (OLS) models, according to the following equation, where utilitarian and emotional conditions are dummy variables that represent whereas a participant was assigned to either the utilitarian or the emotional treatment conditions, and i is a dummy variable representing whether the model belongs to the dissuasive study (i=1) or to the persuasive study (i=0):

$$\Delta\ attitudes_i = \beta_{i0} + \beta_{i1} Utilitarian + \beta_{i2}\ Emotional\ +\ u_i$$

It is possible to observe results from models 2 and 3 in table 3:

Table 3. Change in attitude models, dissuasive (2) and persuasive (3).

Variables	Δ attitudes$_1$	Δ attitudes$_0$
	(Dissuasive) Attitude decrease	
	[Robust Errors][13]	(Persuasive) Attitude increase
	-6.872***	4.639
	(2.457)	(3.306)
Utilitarian vs. Control	[-11.7, -2.047]	[-1.858, 11.14]
	-9.260***	5.217
	(2.663)	(3.343)
Emotional vs. Control	[-14.49, -4.029]	[-1.353, 11.79]
	-6.949***	12.44***
	(1.740)	(2.464)
Constant	[-10.37, -3.531]	[7.597, 17.28]
Observations	557	454
R-squared	0.023	0.006

OLS regression coefficients with standard errors in parentheses

95% Confidence intervals in square brackets

*** *p<0.01, ** p<0.05, * p<0.1 One-tailed t-test.*

Source: Own elaboration.

According to the regression coefficients[14] from table 3, for the dissuasive study (model 2), I found that, in comparison with the control, participants' mean attitudes towards FR reduced by 6.872 points when assigned to the utilitarian condition and by 9.26 points when assigned to the

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[13] I ran a Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, rejecting the constant variance hypothesis. Therefore, I specified this model with robust errors.

[14] Since I found outliers in the dependent variable's distribution (which is non-normal), I included a quantile regression model in appendix 4 to increase estimator robustness (Yu et al., 2003).

emotional condition.[15] Hypothesis tests for both coefficients resulted statistically significant with confidence levels of 99%. In summary, |these results reject the nulls for both hypotheses H3 and H5, providing evidence in their favor. Regarding results from the persuasive study (model 3),[16] I found that, in comparison with the control, participants' mean attitudes towards FR increased by 4.639 points when assigned to the utilitarian condition and by 5.217 points when assigned to the emotional condition.[17] Nonetheless, hypothesis tests for both coefficients were not statistically significant with confidence levels of 95%, therefore failing to reject both null hypotheses H4 and H6.

The last hypothesis is intended to test whether there is a different impact of the treatments on the endorsement for FR:

- H7 (non-directional). Emotional and utilitarian appeals will have a different impact on support for FR.

Figures 2, 3 and 4 show how confidence intervals for emotional and utilitarian condition means overlap, indicating that there are no differences between their effects. Hypothesis tests comparing the coefficients for the emotional and the utilitarian conditions in all three models failed to reject the null hypotheses. That is, evidence does not suggest that the effects from both types of appeal are different from each other.

Results

In summary, data analyses presented in this section support general hypotheses H1 & H2, while also supporting specific hypotheses H3 & H5. Nonetheless, results neither support hypotheses

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[15] Additionally, I calculated Cohen's d for both conditions, finding that the effect size of the utilitarian condition is $|d| = 0.29$, while the effect size of the emotional condition is $|d| = 0.36$. Both effects are larger than my estimated minimum detectable effects (with power $p = 0.8$ and 95% confidence level). Power analyses can be found in appendix 1.

[16] Since I found outliers in the dependent variable's distribution (which is non-normal), I included a quantile regression model in appendix 4 to increase estimator robustness (Yu et al., 2003).

[17] Additionally, I calculated Cohen's d for both conditions, finding that the effect size of the utilitarian condition is $|d| = 0.16$, while the effect size of the emotional condition is $|d| = 0.18$. Both effects are smaller than my estimated minimum detectable effects (with power $p = 0.8$ and 95% confidence level). Power analyses can be found in appendix 1.

H4, H6, nor H7. I argue that these are good news. First, it is important to emphasize that, even if not all hypothesis tests were statistically significant, all point estimates behave as predicted. Results from the dissuasive study (model 2) have the greatest effects from all models, showing that, by deploying emotional appeals, it is possible to reduce support for FR by approximately 9%, while utilitarian appeals reduce it by approximately 7%. However, neither type of appeal was statistically different to the control in the persuasive study. This suggests two possible scenarios: 1) either both types of appeal can persuade individuals into endorsing FR, but to a considerably lesser extent than they can dissuade them from endorsing it, or 2) emotional and/or utilitarian appeals are not able to persuade individuals to endorse FR. Given the fact that hypothesis tests from the general model were significant, I am inclined to favor the first scenario, however, more data would be necessary to test this assertion.[18] Regarding hypothesis H7, which posits that the effects of both types of appeals are different from each other, statistical analyses from the three models consistently suggest a difference in approximately the same magnitude and direction (in favor of emotional conditions). However, such differences are not significant in either case. In fact, while it should be possible to find statistically significant differences between the effect sizes by dramatically increasing the sample size, estimated differences are tiny, suggesting that the difference between effects would not be relevant in this case, even if they were significant.[19] Nonetheless, theoretically speaking, it is important to test if both effects are different from each other in different contexts, or if differences would remain negligible when studying the effects of both types of appeal on attitude change towards other issues, and when replicating the studies in different populations.

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[18] Power calculations indicate that I could not find statistical differences from the control, suggesting I needed a larger sample. However, this is since standardized effect sizes for the persuasive study are very small, not because the study is underpowered to find typical effect sizes. Refer to appendix 1 for details.

[19] The difference between estimated general effects from the pooled data is $d = 0.05$, therefore, to find a statistical difference I would need a sample size of 9894 participants. I ran this calculation using G*Power 3.1, specifying an alpha of 0.05 and power of 0.8.

Conclusions

One of the most important roles of communication in our society is persuasion. Individuals have different values and goals, and they often want other individuals and organizations to get aligned behind the same values and goals. This is often the case when dealing with social and policy issues. One way in which individuals and organizations attempt to deliver more persuasive messages is by morally framing them. Moral frames appeal to different values, ideologies, or emotions to achieve persuasion. For example, anti-abortion activists usually appeal to emotions when they suggest that fetuses feel pain, they also appeal to utilitarian values when they suggest that reducing access to abortions decrease demand for abortions, therefore arguing that abortion is wrong and should be banned (Grimes, 2015). Ecologists usually appeal to utilitarian values when arguing that humans benefit from natural processes such as water regulation or pollination, among others, therefore society should conserve it (Pearson, 2016). Anti-feminists appeal to worse problems when they say that legislating for women rights is less important than solving world hunger, arguing that society should focus on solving only "the most serious problems", as if it were reasonable to order problems according to their severity (Pontes, 2016). It is possible to find countless variations of moral appeals targeted against various human and civil rights. However, moral appeals can also be used to promote attitude change in favor of human rights, as I have shown in this paper.

The fact that violations of human rights are still rampant (Human Rights Watch, 2021) justifies this piece of research. Several groups, organizations, and even individual citizens still manifest varying degrees of opposition towards human rights of different groups, such as Asians, immigrants, LGBTQ+ people, etc. Not only that, but forced treatments are still being practiced even in developed countries such as the US. For example, a prominent case has recently risen to public attention: the Britney Spears' conservatorship case. During 2008, her father was appointed as her conservator, a legal figure that allows him to make personal and financial decisions for her, arguing that she was not fit to make her own decisions at the time because of mental health issues. However, Spears recently presented allegations of having been forced to work, to receive therapies and medical treatments, and to have her personal liberties severely restricted by her father (Levin, 2021). It also came to light that the whole proceeding to restrict her rights and liberties only took less than 10 minutes, no testimonies were taken and she was not even asked for her opinion on it (Farrow & Tolentino, 2021). This type of case, while

prominent, is not quite different from the reality that other groups of people endure, including older adults, individuals with terminal illnesses who are not allowed to practice euthanasia, and, of course, people who use drugs, among many others.

Since morality plays such an important role in attitude formation and change, and moral appeals are so widely used, I wanted to study how moral appeals affect attitudes towards FR. Studying the attitudes of the public towards violations of rights is critical since these attitudes influence not only individual decisions but also political preferences, which in turn impact the design and implementation of relevant policies. In this paper, I provided evidence that it is possible to induce attitude change by appealing to the values and emotions of citizens. To do this, I developed and implemented an experimental set of original survey studies, deployed in a laboratory setting, in a sample of Mexican students from different parts of the country and from public and private institutions.

Most of my findings are congruent with my predictions. I found that emotional and utilitarian appeals are an effective tool to change the attitudes of individuals towards FR. These findings are important because a considerable part of the public endorses this practice, even if evidence has shown that treatment at annexes is not effective and can even be harmful (Rafful et al., 2020; Werb et al., 2016). Therefore, human rights advocacy organizations and HR defense public agencies should be able to benefit from this knowledge by designing advocacy campaigns that deploy emotional or utilitarian appeals to dissuade citizens, including public officers, from supporting FR. Further, I believe that reducing the public's support towards FR could eventually result in reduced demand for treatment at annexes, while increasing demand for private and public treatment options with higher standards of care. If this was the case, even annexes would be incentivized to improve their services and to start to respect the autonomy of the individuals they service.

Finally, I argue that is possible to apply my methodological approach to other rights-related issues. Different groups might react differently to different moral appeals targeted towards different issues; however, I would expect to find some degree of consistency. I argue that my methodological approach is powerful and easily appliable in different contexts. Therefore, I can extend my research by redeploying the method that I used in this paper. With this method, I can study how to promote attitude change towards different behaviors and groups in similar or

different populations. For example, it would be possible to apply this method to study the effects of different moral appeals (including utilitarian and emotional ones) to issues such as support towards animal's rights, ecological conservation, immigrants' rights, workers' rights, women's rights, among many other current rights issues.

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Appendices

Appendix 1. Power analyses

As I discussed in the Good Research Practices subsection, power calculations are necessary procedures that help researchers in analyzing whether their studies are not underpowered. Therefore, I decided to calculate minimum detectable effects to know if I can find statistical differences between treatment conditions, given certain limitations and specifications. Minimum detectable effects (MDE) are defined as the minimum true effects that have a P probability of providing a statistically significant effect estimate at a given α level (Bloom, 1995). I used the G*Power 3.1.9.7 software (Faul et al., 2007, 2009) to calculate MDEs for all my hypotheses. I performed sensitivity calculations for differences between two independent groups as specified in my hypotheses. Calculations provide the minimum detectable effect sizes (measured by their respective Cohen's d), given the available sub-samples for each hypothesis, error probability of $\alpha = 0.05$, and power $p = 0.8$ (cf. Djimeu & Houndolo, 2016). Estimations are found in table 1.1.

Table 1.1. Minimum detectable effects calculations.

H1 (directional). Exposure to an emotional appeal produces a greater attitude change in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)
Analysis: Sensitivity: Compute required effect size
Input: Tail(s)   =   One
             α err prob   =   0.05
             Power (1-β err prob)   =   0.8
             Sample size group 1   =   344
             Sample size group 2   =   307
Output: Noncentrality parameter δ =   2.4890704
             Critical t=   1.6472049
             Df   =   649

| | | **Effect size d** | **=** | **0.1954246** |

H2 (directional). Exposure to a utilitarian appeal produces a greater attitude change in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)
Analysis: Sensitivity: Compute required effect size
Input: Tail(s)   =   One
             α err prob   =   0.05
             Power (1-β err prob)   =   0.8
             Sample size group 1   =   360
             Sample size group 2   =   307
Output: Noncentrality parameter δ =   2.4890079
             Critical t=   1.6471482
             Df   =   665

| | | **Effect size d** | **=** | **0.1933609** |

H3 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing respect towards drug abusers' rights will reduce support for FR in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)			
Analysis:	Sensitivity: Compute required effect size		
Input:	Tail(s) =	One	
	α err prob =	0.05	
	Power (1-β err prob) =	0.8	
	Sample size group 1 =	175	
	Sample size group 2 =	195	
Output:	Noncentrality parameter δ =	2.4910580	
	Critical t=	1.6490048	
	Df =	368	
		Effect size d =	**0.2593871**

H4 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to a utilitarian appeal proposing that the state should protect drug abusers' health will increase support for FR in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)			
Analysis:	Sensitivity: Compute required effect size		
Input:	Tail(s) =	One	
	α err prob =	0.05	
	Power (1-β err prob) =	0.8	
	Sample size group 1 =	132	
	Sample size group 2 =	165	
Output:	Noncentrality parameter δ =	2.4921962	
	Critical t=	1.6500353	
	Df =	295	
		Effect size d =	**0.2910258**

H5 (directional). Among supporters of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that addicts suffer because of forced rehabilitation programs will reduce support for FR in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)			
Analysis:	Sensitivity: Compute required effect size		
Input:	Tail(s) =	One	
	α err prob =	0.05	
	Power (1-β err prob) =	0.8	
	Sample size group 1 =	175	
	Sample size group 2 =	187	
Output:	Noncentrality parameter δ =	2.4911602	
	Critical t=	1.6490973	
	Df =	360	
		Effect size d =	**0.2620089**

H6 (directional). Among opposers of forced rehabilitation and undecided subjects, exposure to an emotional appeal proposing that families of addicts also suffer because of their family member's addiction will increase support for FR in comparison to the control group.

t tests - Means: Difference between two independent means (two groups)		
Analysis:	Sensitivity: Compute required effect size	
Input:	Tail(s) =	One
	α err prob =	0.05
	Power (1-β err prob) =	0.8
	Sample size group 1 =	132
	Sample size group 2 =	157

Output: Noncentrality parameter δ =	2.4923562		
Critical t= 1.6501802			
Df = 287			
	Effect size d	**=**	**0.2943217**

H7 (non-directional). Emotional and utilitarian appeals will have a different impact on support for FR.

t tests - Means: Difference between two independent means (two groups)
Analysis: Sensitivity: Compute required effect size
Input: Tail(s) = Two
α err prob = 0.05
Power (1-β err prob) = 0.8
Sample size group 1 = 360
Sample size group 2 = 344
Output: Noncentrality parameter δ = 2.8054217
Critical t= 1.9633490
Df = 702

|	**Effect size d**	**=**	**0.2115213**

Source: Own elaboration.

Table 1.1 includes results from my sensitivity analyses, showing that my sample sizes allow me to find effects for my seven hypotheses within a minimum range that goes from $d = 0.19$ to $d = 0.29$. Given reviews that suggest typical effect sizes of $d = 0.4$ on social psychology (Brysbaert, 2019) and even typical medium effect sizes of $d = 0.36$ (Lovakov & Agadullina, 2021), I argue that my studies are more than well powered to detect typical effect sizes. Naturally, very small effect sizes will not be detectable given the current sample sizes from my three data subsets (from the dissuasive, persuasive, and general studies), however, I had no reason to expect effect sizes to be so small. Future replication studies should consider the sample limitations from this paper and adjust accordingly.

Appendix 2. Outliers

In this appendix, I study the presence of outliers in my data. I used the box plot method (Sim et al., 2005) to check for outliers in the data distributions of my three subsets, finding outliers in all three cases, as shown in figure 2.1, which shows the dispersion of data in the general data set:

Figure 2.1. General Attitude Change box plot (general data set).
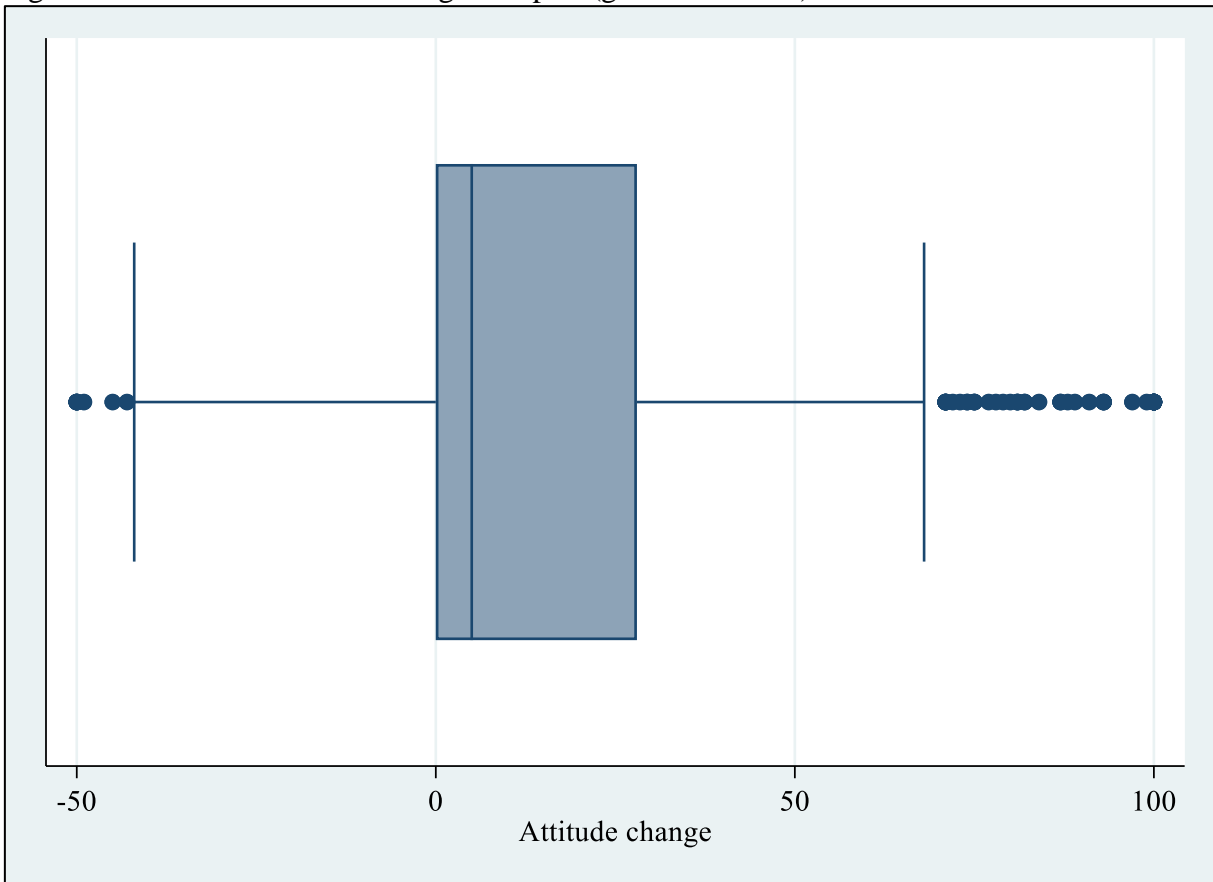
Source: Own elaboration.

Figure 2.1 visually shows how there are observations outside the whisker regions. Box plots divide data in quarters, which hold approximately 25% of the observations. Therefore, data inside the box (which is filled in by blue color) represents approximately 50% of observations. It is possible to observe how, in this case, there are scattered points outside the whisker regions, which indicate the presence of outliers. The box plot method allows researchers to graphically observe the presence of outliers, defined in this case as observations that lie below the 25th percentile minus 1.5 times the interquartile range (IQR) and observations that lie above the 75th

percentile plus 1.5 times the IQR. The 25th and the 75th percentiles are represented in box plots with vertical lines at both extremes of the whiskers. Are outliers also present in the dissuasive and persuasive studies data subsets? Figure 2.2 allows me to respond this question:

Figure 2.2. Attitude Change box plot by study (dissuasive and persuasive data subsets).
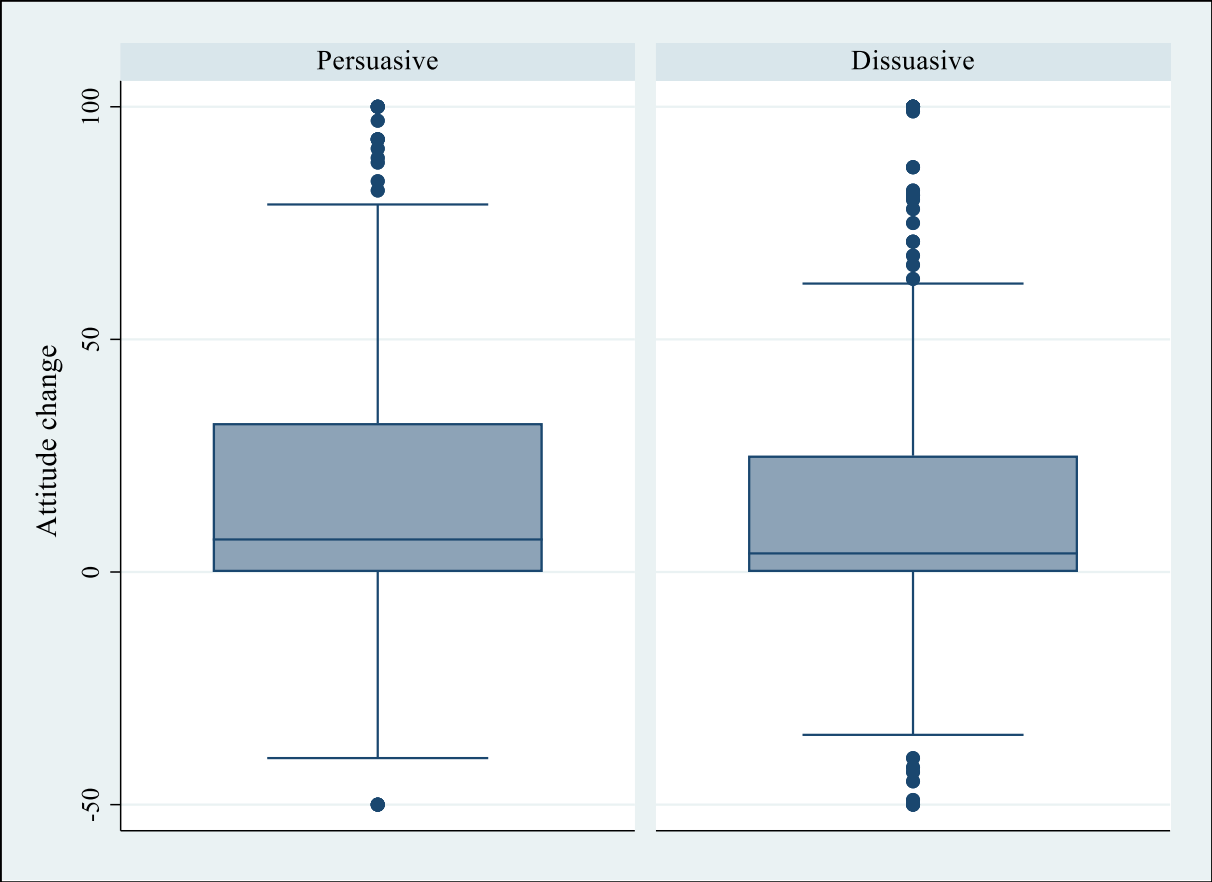
Figure 2.2 shows how, in both subsets, there is also presence of outliers since scatter points can be observed in the regions outside the whiskers.

Appendix 3. Original wording used in the experiment

Table 3.1. Experimental tasks' original wording.

Phase		Persuasive study		Dissuasive study	
Beginning of the experimental task's text		Algunos expertos dicen que nunca se justifica internar en "anexos" a la gente que consume drogas en contra de su voluntad. Otros expertos, *no están de acuerdo.* Dicen que el tratamiento de adictos es un tema complejo.		Algunos expertos dicen que a veces sí se justifica internar en "anexos" a la gente que consume drogas incluso en contra de su voluntad. Otros expertos, *no están de acuerdo.* Dicen que el tratamiento de adictos es un tema complejo.	
Treatments	**Controls**	**Utilitarian appeal**	**Emotional appeal**	**Utilitarian appeal**	**Emotional appeal**
	Participants are not shown any text in the treatment section if they are assigned to either control group.	Los adictos severos muchas veces no pueden ver los beneficios a largo plazo y pueden consumir felizmente hasta su muerte. Por tanto, estas campañas terminan teniendo pocos resultados reales. El gobierno necesita darles un empujón a los adictos para ayudarlos a salir del problema.	Muchas familias sufren muchísimo al tener un miembro con adicciones. Imagina el llanto, el sufrimiento y la desesperación de una madre al tener a un hijo que no quiere dejar las drogas. Dicen que tenemos que ser más humanos y reconocer que la gente que vive cerca de los adictos también sienten y sufren.	Los adictos severos muchas veces fingen progreso para salir del internamiento obligado y luego regresan a lo de siempre. Por tanto, estas campañas terminan teniendo pocos resultados reales. El gobierno necesita convencer a los adictos si quiere ver un resultado real.	Muchos adictos sufren muchísimo al ser encerrados en contra de su voluntad. Imagina el llanto, el sufrimiento y la desesperación de una persona al ser encerrada y no poder salir de un anexo. Dicen que tenemos que ser más humanos y reconocer que los adictos también sienten y sufren.
End of the experimental task's text		Tú, ¿Qué tanto estás de acuerdo con la siguiente frase? A veces se justifica internar a la gente que consume drogas en "anexos" incluso en contra de su voluntad. [Anexo: hospital en donde se trata a los consumidores de drogas]			

Source: Own elaboration

Since I found outliers[20] in all three data subsets, I decided to run additional robustness tests. Outliers are known to bias estimators, especially when data is non-normal, in which case a quantile regression can provide a more robust estimation of effects than Ordinary Least Squares: rather than estimating the conditional mean of Y given X (as OLS does), it estimates the conditional median of Y (or any other specified quantile) given X (Yu et al., 2003). Estimates from quantile regression models can be observed on table 5.1:

Table 4.1. Quantile Regression Models.			
	(1) Model Q1	(2) Model Q2	(3) Model Q3
	Attitude Change	*Δ attitudes$_1$*	*Δ attitudes$_0$*
Models	(General) Attitude change	(Dissuasive) Attitude decrease [Robust SE]	(Persuasive) Attitude increase
Utilitarian vs. Control	7***	-7**	7
	(2.662)	(2.893)	(4.464)
	[1.777, 12.22]	[-12.68, -1.317]	[-1.772, 15.77]
Emotional vs. Control	6**	-4	7
	(2.690)	(2.657)	(4.514)
	[0.721 ,11.28]	[-9.219, 1.219]	[-1.871, 15.87]
Constant	1	-1	1
	(1.956)	(0.960)	(3.327)
	[-2.837, 4.837]	[-2.886, 0.886]	[-5.538, 7.538]
Observations	1,011	557	454

Quantile regression coefficients with standard errors in parentheses

95% Confidence intervals in square brackets

*** p<0.01, ** p<0.05, * p<0.1 One-tailed t-test.

Source: Own elaboration.

Estimates from table 5.1 suggest similar effects as those found in my confirmatory OLS models from the Confirmatory Data Analyses section, particularly when comparing model 1 to model Q1. However, while in model 2 both coefficients are significant, the coefficient for the

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[20] Refer to appendix 2 for descriptive data analyses.

emotional condition is not significant in the Q2 model, suggesting caution while trying to reject hypothesis H5. Regarding model Q3, coefficient estimates are not significant, exactly as what happens in model 3. In general, these results support my results from models 1 and 3. They also partially support results from model 2, however, in this case, model Q2 suggests that emotional appeals are not more dissuasive than the control.

The data that I used in this study is part of the CIDE-UECS' Omnibus Study 2019. Data will be publicly released after the publication of a peer-reviewed article. It will be eventually available for download at https://osf.io/3ayfd/ (DOI 10.17605/OSF.IO/3AYFD).

Figure 5.1. QR Code linking to data download site.

Source: Generated with QR Code Generator.