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An Ethical Analysis of Incentives as “Nudges” Toward Better Health Outcomes: A Case Study of Seva Mandir’s Immunization Program in Rural Udaipur

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AN ETHICAL ANALYSIS OF INCENTIVES AS
“NUDGES” TOWARD BETTER HEALTH
OUTCOMES: A CASE STUDY OF SEVA MANDIR’S
IMMUNIZATION PROGRAM IN RURAL UDAIPUR

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VOCABULARY AND ABBREVIATIONS

<i>Dal</i>	Lentils
<i>Thali</i>	Steel plate
<i>Bhopa</i>	Traditional healer
<i>Anganwadi centre</i>	Daycare center
GNM	General Nurse Midwife
ANM	Auxiliary Nurse Midwife
TBA	Traditional Birth Attendant
NGO	Non-Governmental Organization
PHC	Primary Health Center

OBJECTIVES

Immunization is a highly cost-effective and beneficial preventative health measure; however, an estimated 27 million children worldwide do not receive the basic vaccination course before age two and 2 to 3 million people die from vaccine-preventable diseases annually. According to World Health Organization standards, children are fully immunized if they have received one BCG injection to protect against tuberculosis, three doses each of DPT (diphtheria, pertussis, tetanus) and polio vaccines, and one measles vaccine (Global Immunization Vision and Strategy 3). The Indian government's third National Family Health Survey reported in 2006 that only 44 percent of children in India between 12 and 23 months of age were fully vaccinated and 5 percent had not received any vaccinations at all, even though immunization services were available for free in public health facilities. However, coverage varied widely in different regions of India: in Goa and Kerala, for example, more than three-quarters of children were fully vaccinated, but in Uttar Pradesh and Rajasthan, less than one-third of children had received the recommended vaccination package (Ministry of Health and Family Welfare 39). In rural Rajasthan, immunization coverage rates are approximately 22 percent among the general population and less than 2 percent among the tribal populations surrounding Udaipur (Banerjee, Duflo, Glennerster, and Kothari 1).

Abhijit Banerjee and Esther Duflo, professors of economics and poverty alleviation at the Massachusetts Institute of Technology, partnered with Seva Mandir, an NGO that serves the tribal populations in rural Udaipur, between 2004 and 2007 to assess the impact of increased reliability of immunization services and small non-monetary incentives on immunization rates. In this study, 134 villages were randomized to one of three groups: a once monthly reliable immunization camp (Intervention A), a once monthly reliable immunization camp with small

incentives (Intervention B), and a control (no intervention). In Intervention B villages, parents received one kilogram of raw lentils (*dal*) for every visit to the camp and a set of metal plates (*thali*) for every child who completed the course. The children who participated in this study received the full package of immunization recommended by UNICEF and the World Health Organization. Seva Mandir ensured regularity of the camps by providing the General Nurse Midwives (GNMs) and their assistants with motorcycles and requiring photographic proof of their attendance at the camps. Traditional Birth Attendants (TBAs) hired by Seva Mandir were responsible for reminding the women in their villages about the date and location of the camps. The following results were collected at the end of the 18-month study: full immunization rates in Intervention A villages (reliable services without incentives) were 18 percent, full immunization rates in Intervention B villages (reliable services with incentives) were 39 percent, and full immunization rates in control villages were 6 percent (Banerjee, Duflo, Glennerster, and Kothari 6). This study demonstrated that small incentives combined with improved reliability of services can have a significant impact on immunization rates.

Although this experiment had a positive impact on immunization rates in rural Udaipur, the use of incentives to encourage the uptake of preventative health services was ethically controversial. Standard ethical analyses suggest that influence by reason and argument is morally favorable because it demonstrates respect for the autonomy and agency of the person being influenced. On the other hand, coercion by force or threats of harm, which bypasses the reasoning capacity of the agent, is considered morally unacceptable in the vast majority of cases. However, the use of incentives, such as a gift of *dal* to encourage parents to have their children immunized, is a form of influence that falls in the ambiguous ethical terrain between rational argument and coercion (Blumenthal-Barby 346). Many philosophers believe that these “nudges”

pose a threat to autonomy by thwarting people's ability to govern their own behavior and direct their own lives (Blumenthal-Barby 352). Some critics in Udaipur supported this argument, insisting that it was immoral to capitalize on the vulnerability of the poor through bribery; they proposed education as a longer-term and less degrading strategy for improving immunization rates (Banerjee and Duflo 63). However, other philosophers are less willing to definitively assert that all forms of nudging are invasive and unethical, and many people in Udaipur adopted this perspective instead (Blumenthal-Barby 353). They claimed that Banerjee and Duflo's study simply demonstrated the local people's need for a well intentioned nudge and promoted incentives as a productive way to encourage good health decisions (Banerjee and Duflo 63).

The present study seeks to address this ethical dilemma through a case study of Seva Mandir's incentive-based immunization program in rural Udaipur. This paper begins with an explanation of the discrepancy in health-seeking behavior that seems to exist among the tribal populations in the Udaipur District. The villagers in this area value health and dedicate a large amount of their time and resources to health care; however, they often pursue traditional or curative forms of treatment rather than taking advantage of the preventative care options that are readily available to them. This paper then presents four hypotheses regarding the low rates of immunization in rural Udaipur and uses data from personal interviews to identify the two most likely causes: first, the natural human inclination to postpone small costs, and second, skepticism about the benefits of immunization. The following section of the paper contains a theoretical assessment that explains why, considering these two factors, it is ethical to nudge the populations in rural Udaipur toward immunization. The final component of this paper uses interviews with women who visited Seva Mandir's immunization camps and observations of the camps to assess whether the program itself meets ethical standards. This practical analysis involves the

consideration of several dimensions within three ethical domains: autonomy, harms and benefits, and awareness. The purpose of these theoretical and practical ethical analyses is to generate an answer to the following question: Is it ethical to use incentive-based systems to encourage the rural poor in Udaipur to seek health care for themselves and their children? Or are these nudges a form of bribery and an infringement on human freedom?

METHODOLOGY

The information presented in this study was collected during six field visits to immunization camps held by Seva Mandir in the Udaipur District of Rajasthan: Bansadiya Village in Jhadol Block on April 17th, Parevi Village in Jhadol Block on April 19th, Dhar Madar Village in Badgaon Block on April 20th, Sagwara Village in Kherwara Block on April 22nd, Helpiya Village in Girwa Block on April 23rd, and Mada Dang Village in Badgaon Block on April 26th (see **Figure 1**). During these field visits, 29 interviews were conducted with pregnant women and mothers of children less than two years of age seeking vaccination. All women who were interviewed received one kilogram of *dal* from the GNM after immunization was complete. The camps were conducted in central locations that were accessible to the majority of the people in the villages, either outside *Anganwadi centres* or in the homes of village residents. They were scheduled to run from 11:00 in the morning until 2:00 in the afternoon, but the GNMs usually arrived after the scheduled starting time and stayed later than the recommended ending time to accommodate the availability of the women in the villages.

Interviews lasted between fifteen and twenty minutes and were conducted in Hindi, Marwari, or Vagri and translated to English with the help of a Seva Mandir translator. Due to limited time, the interviews were conducted immediately after each other, and due to limited

Figure 1: Field visit schedule

Date	Block	Village	Total interviews	Interviews with mothers	Interviews with pregnant women
April 17	Jhadol	Bansadiya	0	0	0
April 19	Jhadol	Parevi	5	4	1
April 20	Badgaon	Dhar Madar	10	8	2
April 22	Kherwara	Sagwara	3	3	0
April 23	Girwa	Helpiya	9	7	2
April 26	Badgaon	Mada Dang	2	2	0

space, the interviews were held in close proximity to the women waiting for vaccinations, the GNMs, and the TBAs. Some of the women left the camps before they were interviewed, but interviews were conducted with the majority of the women who visited the camps. Several of the participants who agreed to be interviewed requested that their interviews not be recorded, but a recording device was utilized when permitted. A printed copy of the questionnaire was filled out during each interview and all recorded interviews were transcribed. Interviews were conducted until saturation, or repetition in expressed themes, was reached.

The interviews were conducted using a structured format because many of the women who were interviewed were hesitant to share their opinions without direct guidance. Each interview had two open-ended qualitative components, a Health Perceptions Survey to assess the interview subjects' knowledge regarding immunization and a questionnaire to determine the participants' reasons for visiting Seva Mandir's immunization camps. The interviews also contained one quantitative component, a Perceived Coercion Scale that used multiple-choice questions to measure the Awareness, Choice, Priorities, and Freedom of the women who participated in the immunization program (see Appendix). The GNMs, TBAs, and interview participants were not warned ahead of time that there would be a visitor at the camp, but all interview subjects gave verbal consent before the interviews took place. For purposes of privacy and protection, respondent names are not included in this paper.

ATTITUDES TOWARD HEALTH: A DISCREPANCY

Udaipur is among the poorest districts in India: more than 40 percent of the households in rural Udaipur live below the poverty line and the average per capita household expenditure is 470 rupees per month. In this region, 46 percent of adult males and 11 percent of adult females are literate and only 27 percent of adults have any degree of formal education at all (Banerjee, Deaton, and Duflo 945). Health indicators in rural Udaipur are extremely poor, with high rates of malnourishment, respiratory disease, anemia, and disease symptoms such as fever, fatigue, headache, abdominal pain, and chest pain (Banerjee, Deaton, and Duflo 946). These low health indicators are due to the widespread poverty and low levels of literacy in the area, but they are also the result of a discrepancy that seems to exist between the beliefs held by the tribal people living in rural Udaipur about the value of health and their patterns in health-seeking behavior. While the people living in this region dedicate a significant amount of money and time to the pursuit of traditional forms of health care, such as those provided by local spiritual healers known as *bhopas*, they seem less interested in accessing free forms of modern health care made available to them directly by NGOs and the Indian government (Banerjee and Duflo 50).

Appearance

Household surveys conducted in rural Udaipur in 2004 demonstrated that health is important to the tribal populations served by Seva Mandir. Despite the high levels of extreme poverty in the area, the average household spends 7 percent of its monthly budget on health care. Although the poorest families in the region spend less money on health in absolute terms, they spend a greater proportion of their total budget on health than the wealthier populations (Banerjee, Deaton, and Duflo 947). The average household in the region visits a health care

facility 0.54 times per month, while the populations in the upper and lower socioeconomic brackets visit health care facilities 0.55 and 0.43 times per month, respectively (Banerjee, Deaton, and Duflo 946). These providers include government doctors, under-qualified private practitioners known as “quacks” or Bengali doctors, and local traditional healers known as *bhopas*. Poor adults in the area dedicate 13 percent of their total health expenditure to public providers, 64 percent to private practitioners, and 23 percent to *bhopas*. While the wealthier people in the region exhibit similar health spending patterns, they spend 23 percent on public providers and a significantly smaller proportion of their total health expenditure (less than 10 percent) on traditional healers. Families in the middle socioeconomic range spend more than 17 percent of their total health expenditure on *bhopas* and 13 percent on public providers (Banerjee, Deaton, and Duflo 947). These statistics regarding health-seeking behavior among the people in rural Udaipur suggest that these populations view health as a priority and are willing to sacrifice their time and money in order to access health care.

Personal interviews conducted with the mothers and pregnant women who came to Seva Mandir’s immunization camps confirmed that the populations in rural Udaipur value their health. When women were asked about the importance of immunization, 90 percent of respondents indicated that immunization was important to them and 10 percent of respondents said they felt neutral about immunization, but none of the respondents said immunization was unimportant to them. All of the women who were interviewed responded positively when asked whether they would recommend immunization to others and many claimed they had already advertised the benefits of immunization to their friends and neighbors in the village. Finally, when the women at the camps were asked whether they had any suggestions to improve the provision of health care services in the area, six women insisted that their villages needed better health infrastructure

and two women said they wanted to have a hospital closer to their villages. Although the sample included in this survey reflects the opinions of women who have chosen to visit Seva Mandir's immunization camps and does not accurately represent the rural population in the Udaipur District as a whole, these responses do indicate that people in the region value their health and the health services that are provided to them.

Reality

Despite this apparent interest in promoting good health and using the services provided by health care facilities, the rural poor in Udaipur do not consistently pursue high quality preventative health care options, even when these services are free and close to their homes. In 2003, Seva Mandir began holding monthly immunization camps in the villages; these camps were advertised well, held regularly on the same day every month, and consistently attended by a trained GNM. However, only 77 percent of the eligible women in the community brought their children to the camp to begin the immunization course and far fewer (only 17 percent) completed the course, leaving eight out of every ten children without full immunization (Banerjee and Duflo 56). The percentage of fully immunized children in these communities following Seva Mandir's intervention was far from the amount of coverage needed to reach "herd immunity," the point at which enough of the population is immunized to protect the entire community, and far from the 90 percent coverage recommended by the World Health Organization for the basic immunization package (Banerjee and Duflo 63).

Interviews conducted with the mothers who attended Seva Mandir's immunization camps also revealed a certain degree of indifference regarding immunization. Completion of Seva Mandir's basic immunization course requires five visits to the camps and covers BCG, hepatitis, DPT, polio, and measles (see **Figure 2**). However, most of the children at the immunization

Figure 2: Recommended immunization timeline

Vaccination	Birth	6 weeks	10 weeks	14 weeks	9 months
BCG	X				
Hepatitis		X	X	X	
DPT		X	X	X	
Polio		X	X	X	
Measles					X

camps were not following this timeline properly, including the mothers who work for Seva Mandir, because they had missed several camp dates. When asked why their children were not following the recommended immunization schedule, several women responded that they had to travel very far to reach government health facilities before Seva Mandir began holding camps in their villages. Only 28 percent of the women who were interviewed brought the immunization history card provided by Seva Mandir with them to the camp; most explained that they had lost the card, forgotten it at home, or never received one. These responses indicate that, despite their apparent interest in their own health and the health of their children, the tribal populations in rural Udaipur often seem indifferent toward life-saving forms of preventative health care such as immunization.

HYPOTHESES REGARDING LOW IMMUNIZATION RATES

The previous section suggested that the people in rural Udaipur are not taking full advantage of free preventative health services such as immunization despite their availability. There are several possible explanations for this trend in health-seeking behavior among the tribal populations in the Udaipur District. One hypothesis, known as the psychological sunk cost effect, proposes that people often believe, whether consciously or subconsciously, that there is a relationship between price and quality and are therefore skeptical of goods and services that are offered for free. It is also possible that difficulty in accessing preventative health services, due to either distance from home or absenteeism among staff members, contributes to the apparent low interest levels among the villagers in Udaipur. A third option is that the villagers in rural Udaipur simply have the natural human inclination to postpone small costs until a later point when they seem more urgent or necessary. Finally, it is possible that the people living in the areas served by Seva Mandir are not fully convinced of the benefits of immunization or allopathic health care in general and feel more comfortable and confident using traditional healing techniques. An analysis of these four hypotheses will demonstrate that the latter two options are the most likely explanations for why the tribal populations in Udaipur do not take full advantage of the cheap forms of preventative care that are available to them.

The Psychological Sunk Cost Effect

A theory in economics known as the “psychological sunk cost effect” suggests that the cost and amount of effort exerted in acquiring certain goods and services influence the appreciation people have for them. William Easterly’s *The White Man’s Burden* presents evidence supporting the claim that people are less likely to value products or services they have received easily or for

free than those that have cost them a significant amount of time or money (Banerjee and Duflo 57). According to this hypothesis, assigning small costs to certain goods can actually help people appreciate them. The psychological sunk cost effect might apply to Seva Mandir's immunization program because the women who come to the camps do not have to travel far from their homes or pay to receive vaccinations. Based on this theory, it is possible that the tribal populations in rural Udaipur do not actively seek immunization for themselves and their children because they assume that these services, which are provided for free by NGOs and the government, are not particularly important or valuable.

However, interviews conducted with the women who visited Seva Mandir's immunization camps did not support the psychological sunk cost effect hypothesis. Instead, they suggested that many of the women in rural Udaipur actively seek cheap or free forms of health care: 34 percent of the women who were interviewed at the camps claimed that they visited the nearest government health facility before pursuing other treatment options when their children were ill because the services and medications provided by public facilities are free of charge. When asked why they chose to come to Seva Mandir's immunization camp instead of seeking immunization at a government facility, 20 percent of the women responded that they would rather walk to Seva Mandir's camp than pay for a taxi ride to a government health center. The vast majority of the women who were interviewed (93 percent) said they valued the vaccinations provided by Seva Mandir, even though they are given away for free. These interview results suggest that the tribal populations served by Seva Mandir are interested in spending their money wisely and are willing to take advantage of services that are free if they consider these services to be valuable. Therefore, the psychological sunk cost effect does not seem to be responsible for the low uptake of preventative care measures in this region.

Accessibility

India's three-tiered health care system, which includes subcentres and primary health centers (PHCs) at the first level, community health centres and district hospitals at the second level, and medical colleges and advanced medical research institutes at the third level, is designed to be accessible to all people throughout India. Subcentres are the most peripheral branch of the public health care system and often serve as the first point of contact for villagers; these facilities cover an average population of 3,600 and are staffed by one Auxiliary Nurse Midwife. Subcentres and PHCs are required to provide six hours of routine outpatient services per day for six days every week (Banerjee, Deaton, and Duflo 947). However, despite this extensive health care network, people living in remote areas in India still face many challenges in accessing the public health care system. Absenteeism among government health workers is extremely high: 45 percent of subcentre personnel and 36 percent of PHC workers on average are absent on any given day. Subcentres rely on the presence of a single ANM in order to function, but due to low attendance rates, these facilities are closed about 56 percent of the time (Banerjee, Deaton, and Duflo 948). In addition, systems of public transportation in rural Udaipur are extremely underdeveloped and costly for the poor, making access to government health facilities even more challenging for the tribal populations served by Seva Mandir.

Despite these shortcomings in India's public health system, accessibility does not seem to be responsible for the low immunization rates among the rural populations in the Udaipur District. During the immunization experiment conducted by Seva Mandir and researchers Banerjee and Duflo between 2004 and 2007, 379 children from 30 villages were selected to participate in an intervention that simply involved Seva Mandir providing a fully staffed, once monthly reliable immunization camp near the villagers' homes. Absenteeism rates among the

GNMs who staffed these camps were extremely low because they were paired with assistants who brought them to the camps by motorcycle. In addition, the GNMs were paid according to their performance, which was monitored through the use of cameras showing the date and time; this system both improved attendance and increased the quality of care provided to the women at the camps. After the eighteen-month study was complete, immunization rates had more than doubled in these villages, but only 18 percent of the children in the intervention villages were fully immunized (Banerjee, Duflo, Glennerster, and Kothari 6). The results of this study suggest that accessibility and reliability do impact immunization rates, but reliable services alone are not enough to persuade most parents to bring their children to the camps for vaccinations.

Time Inconsistency

It is highly likely that the tribal populations in rural Udaipur, like most other people, have the tendency to postpone small costs until a later date when they seem more urgent and less inconvenient; this might explain why the tribal people in the Udaipur District do not actively and regularly seek immunization for their children. Researchers in psychology have identified a phenomenon known as “time inconsistency” that explains why people often decide to delay a decision or activity until a later date rather than addressing it in the present. According to this theory, in the present, people are “governed in large part by emotions and immediate desire” and would prefer to postpone small costs such as walking to the immunization camps and waiting in line to have their children vaccinated (Banerjee and Duflo 64). This phenomenon is particularly relevant to immunization because the benefits of preventative health care address a risk that may or may not present itself in the future and often does not seem crucial or pressing. Time inconsistency also explains why initial vaccination rates in Seva Mandir’s intervention villages are high, but begin to drop rapidly as the course progresses: “It makes sense, from today’s

perspective, to wait for tomorrow. Unfortunately, when tomorrow becomes today, the same logic applies” (Banerjee and Duflo 65). Therefore, even if the tribal people in the Udaipur District are aware of the benefits of immunization and are interested in having their children vaccinated, the immunization rates in this area may still be low due to time inconsistency.

The information collected during interviews with the women at Seva Mandir’s immunization camps supports the time inconsistency hypothesis. When the mothers at the camps were explaining why their children were not following the immunization timeline recommended by Seva Mandir and the World Health Organization, many said their children had started the course later than they should have because local health facilities were far from their homes before the Seva Mandir immunization program began. This explanation validates the time inconsistency hypothesis: it appears that a small cost such as traveling to a local health facility was at least partially responsible for preventing the women from seeking immunization before the Seva Mandir nurses began coming directly to their villages. The women also explained that most of them (79 percent) had to leave work behind in order to come to the camp, either housework, farm work, or, in one case, paid labor work. Many of the women in rural Udaipur might justify their delays in visiting the camps by telling themselves that they should earn their daily wage or finish work at home instead of wasting an afternoon traveling to the clinic. Finally, when asked who influenced their decision to come to the camp, all of the women who were interviewed mentioned the Traditional Birth Attendant in their villages, who is hired by Seva Mandir to remind the women about the camps the day before they take place. The TBA explains to the women in her village why immunization is important during these visits; it is possible that this gently persuasive reminder, which the women who were interviewed cited as an important part of the reason why they decided to come, helps counteract the small costs that seem to

prevent the women from visiting the camps every month.

Skepticism and Doubt

One of the reasons why the tribal populations in rural Udaipur do not actively and consistently seek preventative health care services is probably that, due to a lack of information, they are skeptical about the benefits of immunization. Understanding the purpose of immunization is particularly challenging because its benefits are invisible: it is impossible to prove that a child would have fallen ill if he or she had not been vaccinated and it is difficult to see when a chain of disease transmission is broken. Immunization does not fix an existing problem, but rather protects against problems that may or many not arise in the future, and it is difficult to establish a clear causal link between an event (immunization) and the absence of a future problem (disease) (Banerjee and Duflo 60). The women who visited Seva Mandir's immunization camps could not accurately select the specific illnesses covered by the immunization course from a list: many believed that their children would be protected from diarrhea, fever, and malaria after receiving the vaccinations. When these children experience a minor fever as a side effect in response to the injection or fall sick with diarrhea or malaria, their mothers are likely to believe that the immunization process has failed. As a result of this, they may lose faith in the benefits of immunization, and in some cases, modern medicine as a whole, and spread false information about immunization to others.

The presence of conflicting traditional beliefs about health among the tribal populations in Udaipur may also contribute to their doubt regarding the benefits of modern medicine. Many of the populations in rural Udaipur believe that their children will catch "the evil eye" and die if they are brought outside during their first year of life (Banerjee and Duflo 62). Most of the children who were immunized at Seva Mandir's camps during the course of this study had black

smudges on their faces or strings tied around their waists. According to traditional beliefs in the area, the evil eye preys upon children who are physically perfect or unprotected by clothing; the black smudges prevent the child from appearing flawless and the waist strings ensure that the child is wearing some form of clothing. Out of the 29 women who were interviewed, only five claimed that they never visited the *bhopa* in their village when their child was ill. The other women visited the *bhopa* as either their first or second treatment option, often explaining that he handles small ailments well and specializes in treating spiritual diseases that cannot be cured at the hospital. Reliance on the *bhopa* did not correlate with distance from a government health facility among the women who were interviewed, indicating that these women were not simply visiting the *bhopa* because there were no other treatment options available nearby. It is likely that traditional beliefs about health increase skepticism about modern medical techniques and result in lower immunization rates among the tribal populations in rural Udaipur.

THEORETICAL ETHICAL ANALYSIS

The previous section identified time inconsistency and skepticism about the benefits of immunization as the most likely reasons why immunization rates are low among the rural populations in Udaipur. This section seeks to determine whether it is theoretically ethical to use a nudge such as a kilogram of *dal* to encourage the people served by Seva Mandir in rural Udaipur to seek preventative health care for themselves and their children. In “Nudge: Improving Decisions About Health, Wealth, and Happiness,” University of Chicago professors Richard Thaler and Cass Sunstein define nudges as interventions that alter people’s behavior in predictable ways without forbidding any particular options (Thaler and Sunstein 6). The goal of a nudge is to help people avoid poor decisions that they would not have made if they had “possessed complete information, unlimited cognitive abilities, and complete self-control” (Thaler and Sunstein 5). Thaler and Sunstein identify the circumstances in which it is appropriate and even recommended to use a nudge to influence people to make the decisions that are best for them. For example, due to the fallibility of human decision-making and the difficulty people face in making good choices about complicated issues such as preventative health care, a nudge toward immunization may qualify as an ethical use of this tool. Based on these factors and the information collected during interviews with the women who visited Seva Mandir’s immunization camps, it appears that an incentive-based immunization program is an example of an ethical use of the nudge.

Time Inconsistency

Research by social scientists about the science of choice has demonstrated that humans make decisions that are systematically wrong in predictable ways (Thaler and Sunstein 25).

According to Thaler and Sunstein, a nudge to help people overcome their natural inclination to postpone small costs is justified when the subjects of the nudge are failing to take advantage of a beneficial opportunity due to errors in decision-making. The women who were interviewed at Seva Mandir's immunization camps demonstrated several biases and blunders in decision-making and may therefore be appropriate candidates for a nudge. For example, based on statistics about the likelihood of dropout from Seva Mandir's immunization course, most of the women had an unrealistic degree of optimism about their ability to bring their children back to the camp in future months to complete the course: out of the 29 women who were interviewed, 28 responded "Yes" to the question "Will you bring your child back to this camp to complete the immunization course?" and only one said she was unsure. In addition, when asked why they had come to Seva Mandir's immunization camp, several of the women who were interviewed reported that they had come either because the TBA told them to come or because all the other women in the village were coming, indicating that their decision to visit the camp was not based on a rational consideration of the benefits of immunization. These trends in decision-making indicate that, like all other people, the women who come to Seva Mandir's immunization camps do not always use perfect reasoning techniques when making decisions; therefore, they might benefit from a certain degree of guidance when making important choices.

According to Thaler and Sunstein, people are most likely to benefit from a nudge when they are facing difficult decisions that do not provide prompt feedback and when they have trouble translating their options into real experiences (Thaler and Sunstein 72). As stated previously, decisions regarding immunization and, more generally, decisions regarding preventative health care as a whole, are particularly difficult because the benefits often seem distant and abstract. Informed decisions about immunization require a significant amount of

background information, which the women who come to Seva Mandir's immunization camps do not possess. Several inconsistencies that arose during interviews with the women at the immunization camps suggested that these women, like many other people, including those who are highly educated, have trouble forming reliable and consistent beliefs about health. For example, although 90 percent of the women who were interviewed claimed that immunization was important to them and 100 percent said they would recommend it to others, only 66 percent of the women said they felt informed about immunization. When asked to explain the purpose of immunization, 41 percent of women responded correctly that it prevents disease, while others stated that it cures disease (14 percent), reduces the effects of disease (10 percent), or produces disease (3 percent), suggesting that many of these women claim to value immunization without truly understanding its purpose. Immunization does not provide any prompt feedback other than the pain felt by the children during the injection and the fever and swelling that sometimes follow it; Thaler and Sunstein argue that decisions about preventative health care, which often lack a clear relationship between cause and effect, are particularly challenging. These responses indicate that informed decisions regarding preventative health and immunization are difficult to make, providing further support for the use of a nudge to encourage positive health-seeking behavior among the women in rural Udaipur.

Finally, traveling to Seva Mandir's immunization camps requires a certain degree of self-sacrifice on the part of the villagers, and an incentive might be a fair way to provide compensation for the opportunities they have left behind. The women who were interviewed at Seva Mandir's camps spent an average of 40 minutes traveling to and from the clinic, with some dedicating over two hours to travel time, and 30 minutes waiting in line to receive vaccinations. In addition, 59 percent of the women who were interviewed said they came to Seva Mandir's

immunization camp instead of going to the closest government facility because the former was closer, indicating that time is valuable to the women who come to the camps. Out of all the women who were interviewed, only 21 percent said they did not leave any important work behind when they came to the camp; 62 percent of the women said they would have to catch up on housework when they returned, 21 percent said they would be doing agricultural work if they had stayed at home, and one woman said she had sacrificed a daily wage of 200 rupees to bring her child to the camp. According to Seva Mandir, the value of one kilogram of *dal* (40 rupees) is equivalent to three-quarters of one day's average wage in the area and therefore compensates fairly for the opportunity cost of visiting the camp during working hours (Banerjee, Duflo, Glennerster, and Kothari 2). Seva Mandir's nudge may simply counterbalance the costs associated with traveling to the camp, which suggests that the kilogram of *dal* is ethically justifiable because it helps overcome the natural human inclination to postpone small costs.

Skepticism and Doubt

The use of an incentive to nudge people who are not fully convinced of the benefits of immunization can only be ethical if it does not pressure them to sacrifice their deeply held traditional beliefs about health. However, there is reason to believe that the traditional beliefs held by the women who are responding to Seva Mandir's incentive-based immunization program are simply the result of a need for hope during difficult times. Studies suggest that the primary reason why people in rural Udaipur rely on the services of traditional healers is that they seek the comfort of some form of affordable care: a Bengali doctor who was interviewed in the area during Banerjee and Duflo's study said, "The poor cannot really afford to get treated for anything major, because that involves expensive things like tests and hospitalization, which is why they come to me with their minor ailments, and I give them some little medicines which

make them feel better” (Banerjee and Duflo 61). In fact, the poor in rural Udaipur probably visit *bhopas* for dangerous conditions such as chest pain or bloody urine that typically require hospitalization, which they deem “*bhopa* diseases,” for this reason. This artificial division between “*bhopa* diseases” and medical diseases was mentioned several times during interviews with the women who came to Seva Mandir’s immunization camps. When asked why they visited the *bhopa* when their children were ill, 25 percent of the women who used the services of the *bhopa* explained that he specializes in certain kinds of spiritual diseases. However, one of the women admitted that she stopped visiting the *bhopa* as soon as the government started providing more health facilities. This false dichotomy between “*bhopa* diseases” and other diseases indicates that many of the people who visit *bhopas* are simply seeking an affordable form of psychological consolation (Banerjee and Duflo 61).

There is also reason to believe that the women who visit Seva Mandir’s immunization camps do not have strong feelings about which belief system about health, traditional or modern, has more merit. Many of the children who received vaccinations at the camps had black smears on their faces and strings around their waists, indicating that their families believe in the evil eye and its ability to cause unprotected children to fall ill. However, in an apparent contradiction, their mothers chose to bring them to Seva Mandir’s camps in order to take advantage of the benefits of immunization, a modern form of medical care. More than 80 percent of the women who were interviewed at the camps said they visit both the *bhopa* and the government hospital when their children are ill without acknowledging that “these represent two entirely different and mutually inconsistent belief systems” about health (Banerjee and Duflo 62). If the tribal populations in rural Udaipur had strong beliefs about the danger of the evil eye, they would probably not risk their children’s safety by bringing them outside in order to access a form of

medical care that does not even align with their other beliefs about health. The use of a weak nudge such as one kilogram of *dal* does not seem capable of coercing a group of people to sacrifice an entire belief system or overcome significant ideological and cultural objections to immunization. In addition, during Seva Mandir's experiment in 2004, many mothers were willing to start the immunization process without incentives, suggesting that their resistance to immunization is probably not due to deeply held traditional beliefs.

Conclusion

The previous analysis demonstrated that the use of *dal* to encourage the tribal women in rural Udaipur to seek preventative health care services is theoretically ethical because it helps them overcome their natural inclination to postpone small costs and is not substantial enough to coerce them into abandoning their traditional beliefs about health. According to Thaler and Sunstein, incentives are most useful when the subjects of a nudge demonstrate characteristic biases and blunders during the decision-making process that prevent them from making the choices that are best for themselves or when the decisions they face are particularly challenging because the benefits are distant or abstract; both of these factors apply to Seva Mandir's immunization case. In addition, a nudge as small as Seva Mandir's kilogram of *dal* does not seem significant enough to trigger the abandonment of an entire belief system. Therefore, the use of an incentive in these circumstances does not violate the tribal populations' right to hold their own beliefs. Based on the assumption that time inconsistency and skepticism about the benefits of immunization are the main factors preventing people in rural Udaipur from seeking immunization, the use of a nudge seems ethical in these circumstances.

PRACTICAL ETHICAL ANALYSIS

The previous section argued that, considering the main factors that prevent the tribal populations in rural Udaipur from seeking immunization, the use of a nudge by Seva Mandir is theoretically acceptable. This section evaluates whether Seva Mandir's immunization program is ethical in its implementation based on observations of the camps themselves and the feedback provided by the women who were interviewed at the camps. The three primary ethical domains that are relevant to Seva Mandir's incentive-based immunization based program are autonomy, harms and benefits, and awareness. Several specific ethical dimensions relevant to autonomy can help determine whether Seva Mandir's use of an incentive to nudge people toward immunization is ethical in practice: the nature of the incentive, the vulnerability of the recipients, and the representation of the incentive to the community. The harms and benefits ethical domain considers the relationship between the party offering the incentive and the party receiving the incentive as well as the viability of alternative methods of promoting immunization, such as educational empowerment. The primary ethical dimensions related to awareness are informed consent, which requires the subjects of the nudge to be knowledgeable enough to make informed decisions about immunization, and salience, which involves the program participants' level of awareness regarding the nudge's mechanism of influence. An analysis of these specific dimensions will help identify the successes and failures of Seva Mandir's immunization program within these three ethical domains.

Ethical Domain: Autonomy

This section considers the three ethical dimensions relevant to autonomy and assesses whether Seva Mandir's immunization program operates in a way that satisfies ethical standards

regarding each of these dimensions. The nature of the incentive chosen for this program, which includes the amount and kind of incentive offered, is ethical primarily because the value of the *dal* provided to the women who come to the camps is not large enough to be coercive. The second dimension, the vulnerability of the recipients, is ethically controversial because many of the people who participated in the immunization program asserted that they did not consistently have enough food to feed their families. However, the vast majority of the women who came to the camps indicated that the *dal* was not the primary factor influencing their decision to attend, which suggests that the vulnerability of the recipients is not directly correlated to their desire to receive the incentive. The representation of the incentive to the communities by local TBAs meets ethical standards because the methods used to persuade women to come to the camps fall under the realm of rational argument. Seva Mandir's incentive-based immunization program seems to satisfy these three ethical dimensions, suggesting that this initiative does not violate the autonomy of the women participating in the program.

Before analyzing this domain, it is necessary to identify the philosophical model of autonomy that is most relevant to Seva Mandir's immunization case. The personal model of autonomy, which evolved from the ancient Greek definition of self-governance, self-determination, and personal sovereignty, is the framework used most frequently during standard ethical assessments (Mackenzie 523). However, a relational model of autonomy is more applicable in the context of Seva Mandir's immunization program because, due to the nature of the local culture, other parties such as family members, friends, and neighbors heavily influence the judgments made by the women who participate in the program. For example, when asked whose decision it was to come to the camp, the women who were interviewed consistently mentioned their husbands, mothers-in-law, and other family members. Therefore, this analysis of

autonomy adopts a relational approach in order to acknowledge the inescapable role these relationships play in the decision-making process among the populations in rural Udaipur (Mackenzie 512).

Nature of the Incentive

The nature of the incentive refers to the kind of incentive used and the amount or value of the incentive: in this case, the incentive is one kilogram of *dal* worth 40 rupees. Scholars in behavioral ethics recommend providing “in kind” incentives, such as exercise equipment or discounted gym memberships to promote healthy lifestyles, rather than monetary incentives in order to decrease the probability of coercion (Blumenthal-Barby and Burroughs 2). Seva Mandir follows this recommendation by providing high quality *dal*, a culturally appropriate food item that has immediate nutritional value, instead of cash, to the women who come to the camps. The value of the incentive is equivalent to three-quarters of a day’s wage in the area, which is not large enough to interfere with the women’s ability to make an autonomous decision about attending the immunization camps (Banerjee, Duflo, Glennerster, and Kothari 2). Finally, the value of the incentive should not be unnecessarily high: resources are not being used effectively if a less costly incentive could have achieved the same effect (Blumenthal-Barby and Burroughs 2). The average cost of fully immunizing a child is in fact cheaper when incentives are used (1102 rupees per child) than when they are not used (2202 rupees per child) because the higher demand for immunization in camps with incentives spreads the daily fixed cost of the camp over more children (Banerjee, Duflo, and Glennerster 6). Based on these considerations, one kilogram of *dal* is an ethical choice of incentive because it nudges the target population toward immunization efficiently without creating a sense of compulsion.

Vulnerability of the Recipient

According to Jennifer Blumenthal-Barby, Baylor College of Medicine Assistant Professor of Medical Ethics, an ethical nudge should not negatively affect the target population's ability to discern their options, consider them, and act in accordance with their own preferences. This dimension of autonomy is controversial in the context of Seva Mandir's nudge because, out of the 29 women who were interviewed at Seva Mandir's immunization camps, only 45 percent said they always have enough food to feed their families. Another 45 percent of the women who were interviewed said they sometimes have enough food in their homes and 10 percent said they rarely or never have enough food. This suggests that some of these women might have a need and not simply a desire for the kilogram of *dal* provided by Seva Mandir, which could indicate a violation of their autonomy and freedom of choice. However, when asked whether they would have come to the camp if Seva Mandir did not provide *dal*, 93 percent of the women who were interviewed responded affirmatively, which indicates that the women probably do not view the *dal* as a substantial supplement to their household food supply. The two women who said they would not have come if they did not receive *dal* explained that their husbands would shout at them if they came home without food after spending an entire afternoon away from work. This suggests that it might actually be necessary for Seva Mandir to provide some form of incentive to the women who come to the camps to prevent their families from criticizing their absence.

An ethical incentive should also not cause the target population to act for reasons for which they would not act if the incentive had not been offered. In the context of Seva Mandir's immunization program, this means that the women who come to the immunization camps should value immunization in itself and be willing, in the right circumstances, to immunize their children even if they do not receive *dal*. When asked why they came to Seva Mandir's

immunization camps instead of seeking immunization at a government health facility, 59 percent of women said the Seva Mandir camp was closer to their homes; none of the respondents mentioned the offering of free *dal* as a determining factor. One of the women even remarked that she regularly visits the closest government facility in addition to Seva Mandir's immunization camps, showing that the *dal* plays no role in influencing her decision. When asked whether they value immunization, the *dal*, or both, 93 percent of the women who were interviewed at the camps responded confidently that they value the immunization. The remaining 7 percent admitted that they value both, but none of the respondents claimed that only the *dal* was valuable to them. In response to this question, three women defensively stated that they only accept the *dal* out of courtesy because Seva Mandir offers it to them and would not mind if Seva Mandir did not provide *dal*. These statements suggest that the women who come to the camps make the choice to pursue immunization independently of Seva Mandir's gift of free *dal*.

Finally, an ethical nudge should ensure that the recipients have the freedom to navigate between multiple options (Blumenthal-Barby 356). This stipulation has two components in the context of Seva Mandir's immunization program, both of which are satisfied: the recipients should have options in terms of where they can seek immunization and whether or not they want their children to receive vaccinations at all. The women who come to Seva Mandir's camps also have the option to seek immunization at a government facility; there are public health facilities that provide free immunization services three kilometers away from Dhar Madar Village, twelve kilometers from Parevi Village, eight kilometers from Sagwara Village, fourteen kilometers from Helpiya Village, and sixteen kilometers from Mada Dang Village. Although these facilities are all farther away from the villages than Seva Mandir's immunization camps, the women in rural Udaipur do have the option to visit these facilities instead. In addition, the choice to avoid

immunization entirely is not significantly burdensome or impossible for women in the villages served by Seva Mandir. The Traditional Birth Attendant in Helpiya Village mentioned that she knows several women in her village with young children who know about the camps and choose not to come; she reminds them about the benefits of immunization and the date and time of the camp, but does not pressure them to attend.

Representation of the Incentive

A Traditional Birth Attendant hired by Seva Mandir is responsible for reminding community members about the immunization camps the day before they take place. The techniques used by the TBA to inform the women in the villages about Seva Mandir's immunization camps could violate the autonomy of the participants if these techniques were coercive or manipulative in any way; however, based on the information collected during interviews with the women at the camps, the TBA seems to use ethically acceptable forms of rational argument when she informs the villagers. The women in each village were asked during interviews how the TBA influenced their decision to come to the camp: in the Dhar Madar and Mada Dang Villages, the TBA only told the women about the date and time of the camp, but in the Parevi, Sagwara, and Helpiya Villages, she informed the women about the benefits of vaccination and encouraged them to visit the camps in addition to mentioning the date and time of the camps. The TBAs placed more emphasis on the value of immunization than on the gift of free lentils provided by Seva Mandir during their reminders and did not make use of persuasive techniques such as exaggeration or reference to norms in order to convince the women to attend the camps. In some instances, women's husbands or mothers-in-law were hesitant to allow them to attend the camp, but the TBA was able to persuade them by listing the benefits of immunization. In addition, out of the 29 participants who were interviewed, 100 percent of the

women claimed they were not hesitant to come to the camp for any reason and did not feel any pressure from either the TBA or their families to visit the camp.

Ethical Domain: Harms and Benefits

This section analyzes two ethical dimensions relevant to the harms and benefits domain: the relationship between the party providing the incentive and the party receiving it and the viability of using alternative methods to achieve the same ends. The relationship between the providers and recipients of the nudge is important because the degree of trust between parties can promote or discourage exploitation. Seva Mandir's immunization program satisfies the ethical demands of this dimension because a high degree of trust and respect exists between Seva Mandir and the villagers participating in the immunization program; neither party is suspicious of the other party's intentions or motives. The second dimension, the viability of alternative methods, is ethically relevant because the party providing the incentive has an obligation to ensure that, out of all feasible options, they are making use of the method that is causing the least amount of harm and satisfies the highest ethical standards. The ethically ideal alternative arrangement to Seva Mandir's incentive-based immunization program is widespread educational empowerment of all participants; however, this option would probably prove less effective than the use of incentives, suggesting that Seva Mandir's program is currently the most viable option for encouraging the uptake of preventative health services among the tribal populations in rural Udaipur.

Relationship Between Parties

In "Nudge: Improving Decisions About Health, Wealth, and Happiness," Thaler and Sunstein introduce the following question set as a mechanism for assessing the relationship

between a choice architect, or a person who is responsible for designing the context in which people make decisions, and the subject of a nudge: “Who uses? Who chooses? Who pays? Who profits?” (Thaler and Sunstein 97). An ethical incentive is one in which the provider of the nudge does not benefit more than the recipient and the benefits of the nudge outweigh the costs for the recipient. The users of the incentive are the families of the women who receive the kilogram of *dal* at Seva Mandir’s immunization camps. The issue of choice is more complicated because it requires the consideration of subtle forms of influence, but the previous assessment of autonomy confirmed that the women in rural Udaipur are able to choose freely whether or not they want to participate in the immunization program. While the Indian government provides vaccinations for free, Seva Mandir is responsible for paying over 3,500 rupees per month to fund each camp; however, it is the villagers who are profiting in terms of both the *dal* and the health benefits of immunization (Glennester and Khetan 10). This series of questions demonstrates that Seva Mandir’s immunization program favors the recipients of the nudge, not the providers, which facilitates a reduced risk of coercion and exploitation.

Seva Mandir’s incentive-based immunization program would be ethically controversial if it caused any damage to the relationship between Seva Mandir and the women participating in the program. The relationship between the two parties could suffer, for example, if the women coming to the immunization camps felt that Seva Mandir was exploiting their weaknesses or dismissing their views by offering them an incentive (Blumenthal-Barby 358). However, when asked to describe their impression of Seva Mandir as an organization, all of the women who were interviewed made positive comments about Seva Mandir’s impact on their communities and said they trusted the organization. Many of the women simply stated that they believe Seva Mandir is a good organization, but others explained more elaborately that they think Seva

Mandir's initiatives are working well, are happy with Seva Mandir's presence in their communities, and spend time talking to other people in their villages about the work Seva Mandir is doing to improve the lives of the people in the area. Although these responses may have been biased by the proximity of Seva Mandir employees during the interviews, it is likely that the women would have been less specific about the appreciation they felt toward the organization if they were not truly convinced that their communities are benefitting from Seva Mandir's interventions. The positive relationship that exists between Seva Mandir and the women who were interviewed at the camps suggests that this dimension of Seva Mandir's immunization program is ethical.

Viability of Alternatives

The most ethically favorable alternative to Seva Mandir's incentive-based immunization program is the use of health education to empower the villagers in the Udaipur District to make their own decisions about preventative care. However, this option is not ideal because educational empowerment is a long-term solution that would not benefit the women who currently have young children. In addition, it is likely that high levels of health education would still not result in widespread immunization among the tribal people in rural Udaipur. Health education would address the skepticism these populations feel regarding the benefits of immunization, but not their natural inclination to postpone small costs. People living in developed countries are surrounded by invisible nudges, such as the requirement that their children be immunized before they enroll in school, which makes them less susceptible to their tendency to procrastinate; however, the poor in rural Udaipur do not have the same advantage. Banerjee and Duflo argue that "the primary goal of health care policy in poor countries should be to make it as easy as possible for the poor to obtain preventative care, while at the same time

regulating the quality of treatment that people can get,” and the use of incentives might be the most effective way to do so (Banerjee and Duflo 69). This argument does not suggest that the poor do not deserve or should not receive education about the benefits of immunization; it simply asserts that information alone will probably not have a significant impact on immunization rates in an environment where people are not aided by invisible nudges.

Ethical Domain: Awareness

This section will assess the final relevant domain, awareness, by considering two ethical dimensions: informed consent and the saliency of the incentive. Seva Mandir’s immunization program does not satisfy ethical standards in terms of informed consent because the women who visit the camps do not have a basic understanding of the purpose of immunization or the diseases covered by Seva Mandir’s basic immunization course. In addition, the counseling provided to the women after immunization during this study was severely inadequate; when counseling did occur, it was not comprehensive. These low standards of counseling probably exist because the women often forget the information shared with them during counseling sessions, which makes the GNMs question the purpose of informing the women. This explanation does not excuse poor counseling, but it might help improve the quality of counseling in the future. The second dimension of this domain, the salience of the incentive, satisfies ethical standards because the respondents are able to consciously understand the mechanism of influence involved. Some forms of influence are manipulative simply because they are invisible, but Seva Mandir’s gift of *dal* is clearly advertised as a reward for immunization and is unmistakable as a form of influence. Therefore, this dimension is ethically acceptable, but the first dimension of the awareness domain, informed consent among the program participants, requires significant improvement before it meets ethical standards.

Informed Consent

The primary ethical question related to consent is whether the program participants were able to make fully informed decisions about responding to the nudge. Seva Mandir's immunization program does not satisfy this ethical dimension because the women who were interviewed at Seva Mandir's camps did not possess basic knowledge about immunization. For example, when the women at the camps were asked to explain the purpose of immunization, only 41 percent responded correctly that it prevents disease, while others replied that it reduces the effects of disease, eliminates existing diseases, facilitates a proper delivery, promotes the health of the brain, or even produces disease. Although most participants said they believe immunization is beneficial, some claimed it is harmful because the injection is painful and often results in swelling and a fever. In addition, when asked to select the diseases covered by the immunization course from a list, none of the women who came to the camps, including the village women who work for Seva Mandir, were able to choose correctly, even though the names of the illnesses were translated into the local language and the symptoms were described. Many of the women thought the course would protect their children from fever, which is particularly problematic because a small fever is often a side effect of immunization; therefore, these women might inaccurately conclude that the vaccinations have failed when their children develop fevers. This limited knowledge is ethically unacceptable because it suggests that the women coming to Seva Mandir's camps are exposing their children to vaccinations without being able to explain what immunization is or why it is desirable.

In addition, the counseling provided to the women at the camps after immunization was neither consistent nor comprehensive, revealing a further ethical complication. According to an employee in Seva Mandir's Health Unit, the GNMs are supposed to provide information about

nutrition, birth spacing, and the potential side effects of immunization to all the women who come to the camps. However, when asked whether they had received any form of counseling from the nurse, only 62 percent of the women responded affirmatively, and many of these women only began receiving counseling after the GNM heard that the interviewer was interested in documenting this information. Even when the women did receive counseling, the information provided by the GNM was not comprehensive: birth spacing was never mentioned, nutrition was only mentioned twice, and the side effects of immunization were only mentioned several times. The GNMs often gave the women medication to reduce side effects without explaining the purpose of the tablets. Sometimes the GNMs tried to describe the purpose of immunization to the women during interviews, but this counseling would probably not have taken place if the interviewer had not been present. These low standards of counseling do not ensure that the women who come to Seva Mandir's camps for immunization are fully informed participants, which is ethically problematic because it does not promote true freedom of choice.

There are several possible explanations for these low counseling standards; although these explanations do not excuse poor counseling, they do highlight some of the challenges faced by both the GNMs and the women during the counseling process. When asked how knowledgeable they felt about immunization, 66 percent of the women who were interviewed said they felt fully informed about immunization; this false confidence might have prevented the women from recognizing the importance of the information shared with them during counseling. In addition, the GNMs might have lost confidence in the efficacy of their counseling because the women are often unable to recall the information that was shared with them during counseling sessions. For example, when the GNMs gave counseling immediately following immunization, the women could often not remember anything the GNM had told them several minutes later

during their interviews. Regardless of these challenges, the GNMs have an ethical obligation to ensure that the women who visit the camps have at least a basic understanding of immunization before administering vaccinations to their children. Seva Mandir can begin addressing the difficulties faced during the counseling process by improving the training provided to the GNMs and TBAs and holding awareness camps for mothers in the villages.

Salience of the Incentive

In order for an incentive to be ethical, the subjects of the nudge must know they are being influenced and understand the mechanisms of that influence (Blumenthal-Barby 356). Some forms of nudging subtly take advantage of characteristic errors in human decision-making and are therefore more likely to qualify as coercive behavior. People are highly susceptible to framing techniques and will often, for example, make decisions about whether to undergo a given medical procedure based on whether the physician explains the risks of the procedure in terms of successes or failures (Thaler and Sunstein 36). However, Seva Mandir's free gift of *dal* meets ethical standards of saliency: the women who come to the immunization camps are easily able to form a causal relation between the vaccinations their children receive and the *dal* given to them by the GNMs. The conspicuousness of this incentive allows the women who participate in Seva Mandir's immunization program to be fully conscious of the ways in which they are being influenced and use this awareness to make informed decisions about their participation. The women are always informed about the use of an incentive before they arrive at the camp; they usually hear from the TBA that they will receive a kilogram of *dal* if they bring their children for vaccinations. Seva Mandir's incentive is fully transparent, which is ethical because it allows the women who visit the immunization camps to act as conscious agents.

Conclusion

This section presented a practical ethical analysis of Seva Mandir's immunization program through the lens of three ethical domains: autonomy, harms and benefits, and awareness. In terms of relational autonomy, Seva Mandir's immunization program is ethically successful because the nature of the incentive and the representation of the incentive to the community are not forceful or coercive and the recipients are not too vulnerable to make decisions freely about whether or not their children should be immunized. An assessment of harms and benefits as they relate to Seva Mandir's immunization program demonstrated that the relationship between Seva Mandir and the program participants is beneficial for both parties and that the current use of incentives is the least harmful short-term method available for successfully encouraging the uptake of preventative health services. The salience dimension of the awareness domain meets ethical standards, but the informed consent dimension does not: many of the women who visited Seva Mandir's immunization camps were not making a fully informed choice when they decided to have their children immunized. In addition, the counseling provided to the women after immunization was neither regular nor thorough and did not ensure that the women understood the purpose and benefits of immunization. This ethical weakness is partially mitigated by the fact that a high degree of trust exists between Seva Mandir and the villagers who participate in the program. However, Seva Mandir has an obligation to improve awareness among program participants and ensure that mothers are fully informed before the GNMs administer vaccinations to their children.

CONCLUSION

The goal of this study was to conduct an ethical analysis, both theoretical and practical, of Seva Mandir's incentive-based immunization program in rural Udaipur. This paper began by examining the prevalent attitudes toward health among the tribal populations in the regions served by Seva Mandir. This assessment demonstrated that the people living in this area value their health, but generally do not dedicate their time and resources to the pursuit of preventative health care options such as immunization. After four hypotheses regarding the low rates of immunization among the tribal populations in the Udaipur District were considered, the human inclination to postpone small costs and doubt regarding the benefits of immunization were identified as the two most likely reasons why immunization is not a health priority for the people in this region. These two hypotheses were then subjected to a theoretical ethical analysis in order to determine whether it is ethical to use a nudge to encourage the tribal populations in Udaipur to overcome these obstacles and seek immunization. After determining that a nudge would be ethical in these circumstances, Seva Mandir's immunization program itself was assessed to determine whether it meets ethical standards in three major domains: autonomy, harms and benefits, and awareness. This assessment revealed that Seva Mandir's incentive-based immunization program is ethically acceptable in terms of the first two domains, but requires improvement within the awareness domain. This ethical analysis has highlighted the strengths and weaknesses of Seva Mandir's program and provided recommendations to improve its ethical shortcomings.

LIMITATIONS

I. Sample size

The immunization camps included in this study represent only four out of the five rural blocks served by the Seva Mandir Health Division in the Udaipur District and six out of the 115 total camps held by Seva Mandir every month. Although interviews were conducted with program participants until saturation was reached, it is possible that responses would have varied if women from more blocks and camps had been represented.

II. Reliability of responses

The responses given by program participants were influenced by several factors, including the proximity of the GNMs and TBAs to the interview site and the presence of distractions during interviews. The women were often hesitant to speak during interviews, which prompted the GNMs and TBAs to interrupt them and answer questions on their behalf. It is possible that the women who overheard other interviews simply repeated the responses given by other women because they were too anxious to consider the questions themselves. In addition, the women encountered distractions during the interviews that prevented them from reflecting carefully on their responses; for example, they often left to breastfeed or walk around the camps when their children began to cry.

III. Language and cultural barriers

All communication with the women at the immunization camps was transmitted through either one or two translators, which might have influenced both the questions asked and the responses given. It is possible that meaning was lost during this process or that the questions were simply phrased differently than intended. In addition, there were times when the women did not understand or know how to respond to certain interview

questions, perhaps because they were not accustomed to considering some of the ideas addressed in the questionnaire.

IV. Outsider influence

The interviewees' perception of the interviewer as a cultural and linguistic outsider probably made the interview subjects feel intimidated and uncomfortable and may have produced biased responses. In addition, the presence of a male translator might have influenced the subjects' desire to discuss certain topics in depth. The interviewer's status as an outsider also impacted the functioning of the camp, making genuine field observation difficult; for example, the GNMs began giving counseling to the women and making immunization cards for them after they overheard these topics being discussed during interviews.

RECOMMENDATIONS FOR FURTHER STUDY

- I. This study could be improved if different methods of data collection were used to generate responses among the program participants. One of the main weaknesses of this study was that the interviewer had to rely on a heavily structured interview format because the women who were interviewed were hesitant to share their opinions freely. More reliable data could be collected if informal group discussions were used to facilitate open and honest discussion among the program participants.
- II. This study focused on collecting data from positive respondents to Seva Mandir's immunization program. However, this study could also be approached from the point of view of the program's negative respondents, the General Nurse Midwives, the Traditional Birth Attendants, or the families of the positive and negative program respondents. The accumulation of perspectives from all of these parties would facilitate a more comprehensive ethical analysis.
- III. Future investigators could consider a research question related to Seva Mandir's immunization program without taking a philosophical approach. For example, other studies could analyze the demographic and socioeconomic determinants of immunization in rural Udaipur, determine the efficacy of different methods of providing immunization counseling to the people in the community, or examine the discrepancy between immunization rates among the tribal populations and the rural non-tribal poor in India.
- IV. Future studies could apply the same research framework to a wide variety of other programs in India that use monetary or non-monetary incentives to nudge people toward certain health care options. For example, *Janani Suraksha Yojana* is an intervention introduced by the Indian government that aims to reduce maternal and neonatal mortality

among pregnant women by incentivizing institutional deliveries. A modification of the strategies used in this study could be utilized to determine whether the use of an incentive is ethically justifiable in these circumstances.

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Respondent #5. Personal interview. 19 Apr. 2013.

Dhar Madar Village

Respondent #1. Personal interview. 20 Apr. 2013.

Respondent #2. Personal interview. 20 Apr. 2013.

Respondent #3. Personal interview. 20 Apr. 2013.

Respondent #4. Personal interview. 20 Apr. 2013.

Respondent #5. Personal interview. 20 Apr. 2013.

Respondent #6. Personal interview. 20 Apr. 2013.

Respondent #7. Personal interview. 20 Apr. 2013.

Respondent #8. Personal interview. 20 Apr. 2013.

Respondent #9. Personal interview. 20 Apr. 2013.

Respondent #10. Personal interview. 20 Apr. 2013.

Sagwara Village

Respondent #1. Personal interview. 22 Apr. 2013.

Respondent #2. Personal interview. 22 Apr. 2013.

Respondent #3. Personal interview. 22 Apr. 2013.

Helpiya Village

Respondent #1. Personal interview. 23 Apr. 2013.

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APPENDIX

Seva Mandir Immunization Camp Questionnaire

INTERVIEWER: JULIKA KAPLAN

INTERPRETER: _____

DATE AND TIME OF INTERVIEW: _____

CAMP INFORMATION

BLOCK	
VILLAGE	

DEMOGRAPHICAL INFORMATION

NAME OF INTERVIEWEE	
RELATIONSHIP TO CHILD	
AGE OF CHILD	

IMMUNIZATION HISTORY OF CHILD

VACCINE	MONTH	LOCATION
BCG		
POLIO-1		
POLIO-2		
POLIO-3		
DPT-1		
DPT-2		
DPT-3		
HEPATITIS-1		
HEPATITIS-2		
HEPATITIS-3		
MEASLES		

IS THE CHILD FOLLOWING THE PROPER IMMUNIZATION TIMELINE?

YES

NO

IF NOT, WHY NOT? _____

HEALTH PERCEPTION SURVEY

DID YOU RECEIVE COUNSELING FROM THE NURSE ABOUT IMMUNIZATION? Yes No

<p>WHAT IS THE PURPOSE OF IMMUNIZATION?</p>	
<p>IS IMMUNIZATION BENEFICIAL OR HARMFUL? WHY?</p>	
<p>WHICH ILLNESSES DOES THIS IMMUNIZATION COURSE COVER? (CIRCLE ALL THAT APPLY)</p>	<p>A) TUBERCULOSIS (TB) B) DIARRHEA (DAST) C) DIPHTHERIA (GALGHOTU) D) FEVER (BUKHAR) E) PERTUSSIS (KALI KHAASI) F) POLIO G) MALARIA H) MEASLES (KHASRA) I) TETANUS (TAAN) J) HEPATITIS (PILIYA) K) NONE L) OTHER: _____ M) UNKNOWN</p>
<p>WHAT TREATMENT PATTERN DO YOU FOLLOW WHEN YOUR CHILD IS SICK?</p>	<p>____ BHOPA ____ PRIVATE DOCTOR (QUACK/BENGALI DOCTOR) ____ GOVERNMENT DOCTOR ____ OTHER: _____ ____ UNKNOWN</p>
<p>WHY DO YOU FOLLOW THIS TREATMENT PATTERN?</p>	

QUALITATIVE ASSESSMENT

<p>WHY DID YOU COME TO THIS CAMP?</p>	
<p>WHO INFLUENCED YOUR DECISION TO COME TO THIS CAMP?</p>	<p>A) INFORMER B) TRADITIONAL BIRTH ATTENDANT C) BAL SAKHI D) OTHER: _____ E) UNKNOWN</p>

HOW DID THIS PERSON INFLUENCE YOUR DECISION?	
HOW MUCH TIME DID IT TAKE YOU TO COME TO THIS CAMP?	
WHERE DOES GOVERNMENT IMMUNIZATION TAKE PLACE? HOW MUCH TIME WOULD IT TAKE YOU TO VISIT THIS LOCATION?	
WHY DID YOU COME TO THIS CAMP INSTEAD OF GOING TO THE GOVERNMENT HEALTH FACILITY?	A) CLOSER TO HOME B) REGULARITY OF CAMP C) GIFT OF FREE LENTILS D) OTHER: _____ E) UNKNOWN
WOULD YOU HAVE BROUGHT YOUR CHILD TO THIS CAMP IF SEVA MANDIR WAS NOT OFFERING A GIFT OF FREE LENTILS?	
WERE YOU HESITANT TO COME TO THIS CAMP? WHY OR WHY NOT?	
DID YOU FEEL ANY PRESSURE TO COME TO THIS CAMP? IF SO, WHY?	
WHAT WERE THE CHALLENGES YOU FACED IN COMING TO THIS CAMP?	
WHAT KIND OF WORK DID YOU LEAVE BEHIND WHEN YOU CAME TO THIS CAMP?	
WOULD YOU RECOMMEND IMMUNIZATION TO OTHERS? WHY OR WHY NOT?	
WILL YOU BRING YOUR CHILD BACK TO THIS CAMP TO CONTINUE THE IMMUNIZATION COURSE?	
DO YOU HAVE ANY SUGGESTIONS TO IMPROVE THIS CAMP?	
WHAT IS YOUR IMPRESSION OF SEVA MANDIR?	

PERCEIVED COERCION SCALE

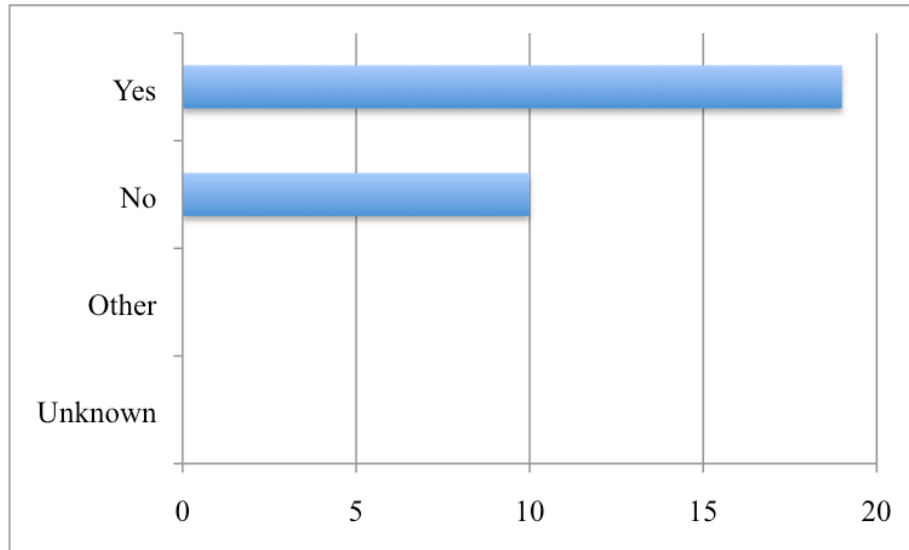
AWARENESS	DID YOU FEEL INFORMED ABOUT IMMUNIZATION BEFORE THE VACCINE WAS ADMINISTERED?	A) YES B) NO C) OTHER: _____ D) UNKNOWN
CHOICE	HOW IMPORTANT IS IMMUNIZATION TO YOU?	A) IMPORTANT B) NEUTRAL C) NOT IMPORTANT D) OTHER: _____ E) UNKNOWN
PRIORITY	WHAT IS MOST VALUABLE TO YOU: IMMUNIZATION, THE GIFT OF FREE LENTILS, OR BOTH?	A) DEFINITELY IMMUNIZATION B) PROBABLY IMMUNIZATION C) BOTH ARE EQUALLY VALUABLE D) PROBABLY THE GIFT OF FREE LENTILS E) DEFINITELY THE GIFT OF FREE LENTILS F) OTHER: _____ G) UNKNOWN
FREEDOM	DO YOU HAVE ENOUGH FOOD TO FEED YOUR FAMILY?	A) ALWAYS B) SOMETIMES C) RARELY OR NEVER D) OTHER: _____ E) UNKNOWN

OTHER COMMENTS:

Quantitative Data

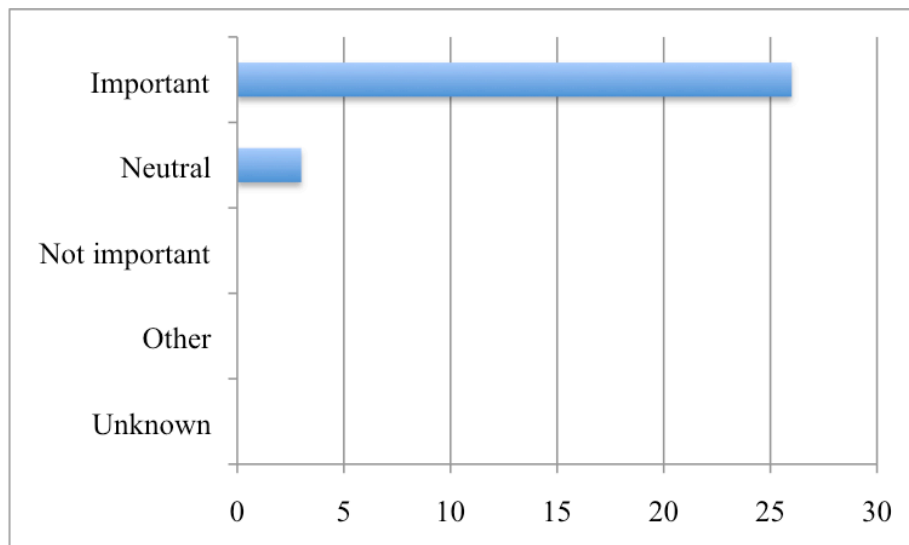
Awareness

Did you feel informed about immunization before the vaccine was administered?



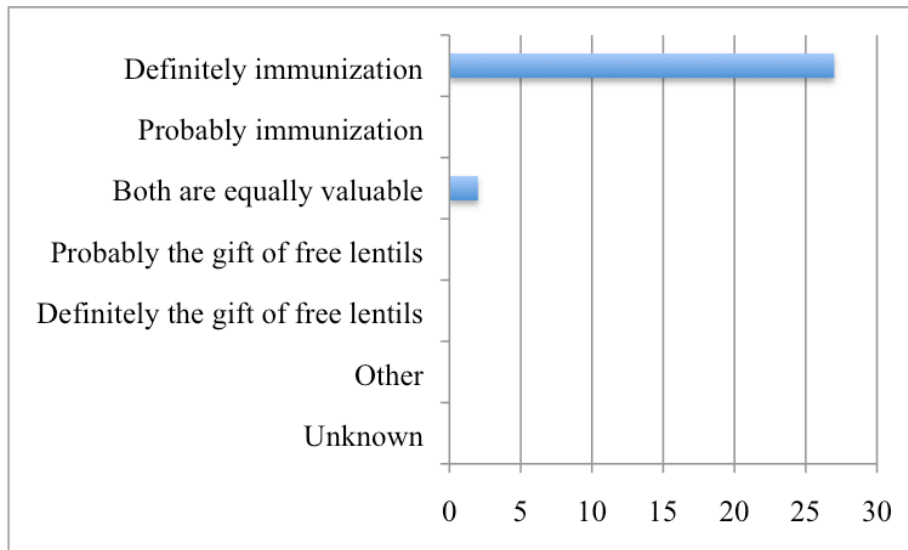
Choice

How important is immunization to you?



Priority

What is most valuable to you: immunization, the gift of free lentils, or both?



Freedom

Do you have enough food to feed your family?

