Secrets and Social Influence

by

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A dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Sociology and Demography in the Graduate Division of the University of California, Berkeley

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Spring 2013
Abstract

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Each of us has secrets of our own and we know others’ secrets too. We share these secrets with some people and we keep these secrets from other people. This affects what we know about each other and how, in turn, we are influenced by each other.

Social science scholars have consistently found that people influence each other with regard to matters that can be observed like dropping out of school, weight gain or family structures. But of course, there are whole swaths of social life that are unobservable. The central question of this dissertation is: how do we understand social influence when people keep secrets and share them selectively?

Existing formal theories of social influence within social networks examine the structure of the network and the relationships between people. These networks are merely the potential for interpersonal communication and influence. Some work, in particular the work on diffusion, examines not just networks but communication networks. But as this inquiry will reveal, even the communication network is a potential network for the transmission of information with regard to a given topic.

This inquiry focuses not on potential communication but on realized communication and how that might differ across discussion partners and topics; it does so because communication is necessary for the influence process to occur.

I explore secrets and social influence using the test case of abortion secrets in the United States. Abortion is a highly volatile, contested secret. Tens of millions of American women have had abortions and the legality of abortion sits at the center of American politics.

I begin by examining who has abortion secrets, or abortion incidence. I calculate the first set of lifetime abortion incidence measures for birth cohorts in the United States and discuss the implications of cohort rates on public opinion and behavior. Theories of social influence suggest that the tens of millions of women who have had abortions in the United States are themselves social and political actors who can influence others, particularly their peers. Hence, scholarship on abortion as a social and political phenomenon should include incidence rates, particularly cohort incidence rates. I find that the number of lifetime abortions a birth cohort of women has differs by when they were born, even when all the cohorts have spent their entire childbearing years with federally legal abortion. Further, when cohort abortion rates decline, all racial and ethnic groups’ cohort rates decline at approximately the same rate. This work is based on vital statistic rates.
I move on to how secrets spread and the implications of hearing – or not – others’ secrets. I compare abortion and miscarriage secrets; this is analytically helpful for two reasons. First, they are concealable, since both are pregnancy-ending events that occur primarily in the first trimester. Abortion, however, is much more highly stigmatized than miscarriage. Second, having had at least one miscarriage is a near-random occurrence; I can thus exploit it to control for a number of otherwise unobservable characteristics that may affect whether someone hears an abortion secret, such as the prevalence of pregnancy in a respondents’ social network and the frequency of discussing those pregnancies.

Though abortion is more common and affects more women than miscarriage, many more Americans report knowing someone who has had a miscarriage than an abortion. Furthermore, Americans who are anti-abortion are much less likely than their pro-choice peers to hear abortion secrets and as such think they do not know any woman who has had one. This is likely not the case. Rather, women who have had abortions and the people who know about the abortion elect to keep the abortion secret from people who may disapprove. As such, pro-choice Americans hear abortion secrets and perceive – and hence experience – a more diverse network than people who are anti-abortion and do not hear the secrets.

I show that individuals’ attitudes determine what kind of community they experience; usually they experience one that aligns with their attitudes. This is not because they have chosen to be with people who agree with them or behave as they like. Rather, it is because the people they are with hide information that would reveal difference. With respect to attributes that can be kept secret, diversity is then not just a characteristic of a community but also a characteristic of individual experience of a community. When individuals keep secrets from those who will disapprove of them, processes of social influence – on public opinion, on tolerance and on behavior – are thwarted.

These results are based on a nationally representative survey I designed and conducted of over 1600 American adults who provided information on their experience with and knowledge of others’ abortions and miscarriages. They also gave detailed information on disclosing and withholding their own and others’ secrets.

Using the survey data, I then consider how hearing – or not – women’s abortion secrets affects Americans’ understanding of who gets abortions and why. We form our understandings of the world, what is possible and what is not, what is appropriate and what is not, on a number of things. We heavily weight our own experiences and those of the people we know. If our information about the experiences of those we know is distorted then that will affect our perceptions of the world, or in this case, of abortion patients.

Americans’ public opinion regarding legal abortion is highly contingent on who the patient is and her reasons for seeking an abortion. Yet, I show Americans misperceive abortion prevalence, the demographic characteristics of abortion patients and their motivations. Further, their perceptions vary most consistently by the number of abortion secrets they have heard. This suggests Americans infer to the national population of abortion patients based on the patients they know of. But, as shown earlier, whose abortions they know of, is highly dependent on their attitudes.

This dissertation documents how abortions are often kept secret, particularly from Americans who are opposed to legalized abortion. As such, Americans misperceive the number of women they know who have had abortions. They then infer from their social network to the nation as a whole and similarly misperceive the abortion patient population nationally. The
implications of these misperceptions are wide-ranging; this work focuses on the implications for public opinion.

In the final chapter of this dissertation, I outline where I will next take the study of secrets. I will examine a wide variety of secrets, from political attitudes to cancer diagnoses and I will employ both quantitative and qualitative methods. Americans keep abortions secret to avert stigma but there are other reasons why one might keep a secret. By extending into other arenas, I will explore these other reasons. I will also be able to capture how secret-keeping and selective disclosure affect other components of American life including the funding of scientific research and the perceptions of polarization. I hope this dissertation will stand as the first steps toward a comprehensive sociology of secrets.
To Andy
ACKNOWLEDGEMENTS

I suppose that the acknowledgements to my dissertation should not be longer than my dissertation and I fear that as a result these words will hardly be enough to express my thanks to those who have sustained me during this work. The greatest thanks goes to Andy Katzman who champions me and my work every day. His faith bolstered me when I lost mine and his cheers (literally, my favorite being “Marx, Weber, Durkheim, Sarah’s doing mighty fine”) brightened me on gloomy days. His insights and inspiration have touched each word of this work. This dissertation is dedicated to him with whom I am blessed beyond measure to share the daily adventure of our life together.

My parents, Ruth and Neil Cowan taught me a love of learning and the confidence to believe that I could discover something new about the world and share it with others. They were always enthusiastic about my endeavors and my father, even if he had not read a single word of this dissertation, would have been happy to tell anyone who would listen that it was a work of genius. They have been my greatest teachers and I am grateful for all they have taught me.

My sisters and their families, Jennifer Cowan, Dan Jacob, Abigail Jacob, Benjamin Jacob, May Cowan, Todd Cohen, Sophie Cohen, Eli Cohen, Isaac Cohen and Asher Cohen have been a consistent source of joy, love, empathy and needed distraction. The Katzman family, Milly and David Katzman, Jonathan Katzman, Naomi Bardach, Avi Katzman and Benjamin Katzman have always been supportive of my work even when it meant missing a family outing or reading an academic journal when everyone else played.

My dissertation committee, Michael Hout, Claude Fischer, Ronald Lee and Jane Mauldon, deserve tremendous accolades for their guidance and feedback. Mike Hout advised me at each step of this dissertation and supported me through what I am sure were understandable but frustrating moments when I lost my confidence. He provided immeasurable support through thoughtful feedback and expressions of enthusiasm, and by describing my project to me in words far more exciting and poetic than my own. From the start of this dissertation, Ron Lee brought precision to my concepts and my language. Claude Fischer was the most helpful thorn in my side. He consistently pushed me to greater clarity and bigger, though never unsupported, claims. Jane Mauldon was technically my outside member but one would never know it given the care and attention she paid to me and this project. On many occasion, Jane brought me to see the forest for the trees. Together, they encouraged and validated my scholarship even when personal demands took me away from it. They are each models of teachers, scholars and mentors I hope to emulate.

My training has been funded by a number of organizations and I am grateful to each of them. The National Institutes of Health, the National Science Foundation, the Dean’s Normative Time Fellowship and the Wolpert Scholarship supported my training. The data collection for my dissertation was funded by the National Science Foundation, the Institute of Governmental Studies at Berkeley, the Institute of Business and Economics Research at Berkeley, the Demography Department at Berkeley, the Tides Center at Harvard University and the Abigail Hodgen Award. I thank them all for their support; the work would not have been possible without them.

Academic work is often described as lonely work. I imagine that must be true for some but it was not true for me due to the wonderful community I found at UC Berkeley. The Demography faculty – Mike Hout, Ron Lee, Ken Wachter, John Wilmoth and Jennifer Johnson-Hanks have succeeded in creating and leading a group of scholars who are dedicated to
excellence, science, camaraderie and civility. It has been a pleasure to be a part of this department. In Sociology, I found consistently excellent advice and good cheer from Neil Fligstein, Heather Haveman, Ann Swidler, Margaret Weir, and Robb Willer.

I found a second home in the Advancing New Standards in Reproductive Health at the University of California San Francisco. Diana Greene Foster, Carole Joffe and Tracy Weitz welcomed me into their community where I learned much from them as well as Kate Cockrill, Deb Karasek and Katrina Kimport and the participants of the abortion seminar at the San Francisco General Hospital.

Partway through this dissertation, I was fortunate to join the Face Value Project. There I met Renée Richardson Gosline, Tim McCarthy, Pat Egan, Julie Davis, Seth Goldman, Betsy Cooper and Adrienne Mundy-Shephard. They are each dedicated to scholarship in the public interest and I admire them each. They are also about the most fun group of scholars I have encountered.

My mind and my scholarship have been sharpened and my days made brighter and more exciting by my Berkeley classmates especially Nora Broege, Sarah Garrett, Shannon Gleeson, Sarah Anne Minkin, Nobuko Mizoguchi, Simon Morfit, Jennifer Randles, Rachel Robinson, Adam Reich, Aliya Saperstein, Jen Schradie, Sarah Staveteig, and Sarah Zureick-Brown.

Particular thanks go to Maggie Frye and Amal Harrati, my dissertation group, my closest colleagues and dear friends. They had patience as I stumbled and stuttered through inchoate ideas and helped with brilliance, compassion and hilarity, all in equal measure, as this work developed. Without them, this work would be a fraction as coherent, strong and creative as it is. It has been a pleasure to learn from and with them and I wait with anticipation to read their future contributions to our knowledge of the world.


I hope that you each have a sense of how grateful I am for all you’ve shared with me.
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CHAPTER ONE: INTRODUCTION

“Our conduct is based upon our knowledge of total reality. But this knowledge is characterized by peculiar limitations and distortions.”

- Georg Simmel (1950)

When I began working on secrets, I met a man I’ll call Peter. Peter is HIV positive which he does not reveal to everyone. He explained to me how difficult it was to disclose his secret. Under the best of circumstances, he would tell people who loved him and who would then burst into tears and he would find himself comforting them. He considered the revelation an investment; at first, he would provide emotional support but in return get greater intimacy and would eventually receive support. Under the worst circumstances, he would be shunned and so he was careful whom he told about his diagnosis.

Peter had a circle of friends: I’ll call them Elliot, Louis and Samantha. I met them each. They all had become friends about a decade earlier. In time, Elliot and Louis started dating and they were living together when Peter was diagnosed. Peter told Samantha early on; she had had an HIV scare before about which Peter knew. Knowing she had been where he was, Peter turned to Samantha for counsel and empathy.

Peter decided not to tell Elliot and Louis. Years prior, Elliot had said something which made Peter suspect that he would not react well to the news. Peter did not want to take the risk of that so Peter and Samantha, under Peter’s instructions, kept the diagnosis a secret from both Elliot and Louis. This involved mostly omission, rarely, if ever, a lie. After all, Elliot and Louis, without information to the contrary, believed Peter was not touched by HIV.

Two years after his diagnosis, Peter told Elliot and Louis. They reacted well. He also revealed that Samantha had known before them and they turned to her for comfort and reflection on their friends’ news. Elliot said to her, “I thought I didn’t know anyone who had HIV. I guess I thought people like me didn’t get it.” For two years Elliot did know someone who was HIV positive but did not know it. During that time, his picture of Peter did not include HIV and as a result, he thought that HIV patients were different than he and his friends. That picture was wrong but it is what influenced Peter.

This story of the group of friends captures the dynamic explored in this dissertation. We cannot know the complete truth of one another. Instead, we learn part of the truth and assemble it into an image of a completely whole person. We do not learn everything; some things are hidden from us. What is hidden is important because others specifically want to hide it and important because those are often socially stigmatized characteristics. These hidden facts are therefore significant to us and to the other and we call them secrets.

The patterns of hiding and revealing secrets matter to sociologists for two reasons. The first is that people are influenced by each other. With regard to concealable matters, we are influenced by our image of each other. Those images are based on what we know of each other but when the knowing is based on hearing, as it is with regard to concealable characteristics then two people can have different images of the same person. In the example of this group of friends, Samantha and Elliot had different images of Peter. Their images differed with regard to HIV status, a socially significant characteristic. They experienced their circle of friends differently as a result of what secrets they had – or had not heard – and they were exposed to a different set of
influences. Their own attitudes determined whether they heard the secret and therefore whether they were influenced by this information.

The second reason why secrets are significant to sociologists is because people generalize from their local community to larger communities. But two people in the same community can experience it differently if one hears secrets and another does not. They will then project from their perceived community to the larger one. When Elliot said that he had thought people like him did not get HIV, he was generalizing not from the reality of his social network but from his image of it.

Central to this work is recognizing that we have an illusion of one another and not the complete truth. How does that come to pass? The complete truth would entail knowing others’ every thought, feeling and action. That is obviously impossible. Instead we learn what is observable and what is revealed and on these pieces of information we form the illusion of another. This illusion, however, is not just a paler version of the other but rather a distortion. Distortion arises in what is observed, what is revealed and in our cognitive assembling of this information. The distortion can look the same for everyone as when its origins are in common cognitive biases or it can differ by individuals as when its origins are in secret-keeping and selective disclosure. Further, the distortion comes about in a variety of intentional and unintentional ways. This inquiry focuses on intentional distortions such as that which arose regarding Peter’s HIV status.

Distortion begins in the simple fact that not every characteristic is observable. Nor are observable characteristics a random subset of characteristics. By their nature, observable things are easier to know than concealable characteristics. A physician can more readily know a patient’s height than her alcohol consumption. At a dinner party, it is easier to identify a guest’s race than his income. The difference in ease of learning alone creates distortion because we need to rely more on guesses and assumptions for information that is concealable compared to that which is observable.

We also have cognitive biases which result in a distorted incorporation of information. As an example, we tend to think rare events are more common than they are and small populations are larger than they are (Roberts and Stalans 1997; Jencks 2000; Alba et al 2005; Sides and Citrin 2007; Patterson 1998; Wong 2007; Nadeau et al 1993). This is a distortion that operates similarly for all people. As another example, when thinking about groups of people, we tend to think mostly of specific individuals in those groups, exemplars, and generalize from them (Tversky and Kahneman 1973). This mechanism of distortion is the same for all people but the results will differ depending on the specific exemplars each individual calls upon.

These distortions are unintentional but they may be directional. One cognitive bias some researchers have found, though evidence is mixed, is that people favor information that confirms their beliefs (Eagly et al 1999). They do this through seeking out confirmatory information and by more easily remembering confirmatory information. Similarly, in the absence of information about others, we tend to assume they are like ourselves (Ross et al 1977; Krueger 2000; Krueger 2003; Epley et al 2004; see Robbins and Krueger 2005 for a review and meta-analysis). These biases are such that our illusions of the world will tend to align with our opinions.

Distortion also arises in the communication of information. Both members of a pair may wish to present and to learn an unbiased truth and yet, they may well not succeed. They may not communicate effectively or the information may become inaccurate with each transmission as the child’s game telephone teaches us. And, of course, there is the distortion of communication
which is intentional in which one specifically wants others to believe something other than the truth. This distortion can be created through secret-keeping or lying.¹

People conceal information for a variety of reasons. They do it to maintain relationships or to prevent negative emotions such as anger and disappointment. They also keep secrets for less beneficial reasons. This will affect who hears what. When people want to protect someone else then they keep damaging secrets from those who will react negatively and when people want to punish someone else, they will tell damaging secrets to those who will react negatively. In either case, our attitudes will determine what we hear. On the basis of what we hear, we form an illusion of others, however distorted that illusion is.

This distortion is consequential because we are influenced by what we hear and not by what is kept secret.² We are influenced by what we know of others in all arenas of life. Others’ influence us with regard to innovation adoption (Rogers 2003), business practices (Davis and Greve 1997), academic achievement (Sacerdote 2001), family formation and caregiving practices of children (Rindfuss et al 2004), who we are friends with (Emerson et al 2002) and our political attitudes (Katz and Lazarsfeld 1955; Huckfeldt and Sprague 1995; Mutz 2006) among many others. The most relevant for this discussion is the influence that occurs when we come into contact with diverse others, or the contact hypothesis.

The contact hypothesis states that individuals who meet members of a stigmatized group often discover that their stereotypes are disconfirmed; thus contact tends to reduce stigma and prejudice. Concealing stigmatized characteristics, however, prevents contact and the possible subsequent attitude changes. For the two years in which Peter was diagnosed but Elliot and Louis did not know this, they knew someone with a stigmatizing attribute but did not know it. Because they did not know, this destigmatizing process of influence could not occur.

The misperceptions have broader consequences beyond just thwarting social influence to our understandings of the world as a whole. We base our understanding of how the world works, what is possible and what is not, on a number of things, heavily weighting our experiences and those of the people we know. Often our understanding has implications for our opinions. As an example, Martin Gilens (2000) explains that Americans on the whole dislike welfare because they erroneously believe that most welfare recipients are black and that blacks do not have a strong work ethic. Thus, Americans’ perception of welfare recipients was such that they did not think them deserving of benefits and therefore Americans opposed strong welfare policies. When our knowledge of the experiences of people we know is incomplete or distorted then this will affect our understanding of the world which in turn affects our opinions.

I explore patterns of secret-keeping and the implications of these patterns for listeners through the test case of abortion in the United States. Abortion is a highly volatile, important secret in the United States. From the vantage point of people who are opposed to legalized abortion, the act is murder and a massacre of the most innocent and vulnerable members of our community happens continually in the United States. From the vantage point of Americans who support legalized abortion, whether and when to have children is fundamental to women’s

¹ Much of what we conceal is innocuous, what Erving Goffman, in using a metaphor of a theatrical performance, calls the backstage work such as bathing, attending to our bodies and preparing ourselves to be seen by others. Others largely assume these actions occur and would not be particularly bothered if they were revealed. Other acts of concealment are more consequential; people either reveal or keep secrets specifically to manage those consequences. The latter is the focus of this work.

² I want to make a distinction here between influence and consequence. If a wife hides from her husband that she has a serious illness, there will still be consequences for him that she is ill. He, however, will not be influenced by the knowledge that she is ill because he will not know it.
freedom and autonomy (Ferree et al 2002). The abortion issue sits at the center of American politics. It has inspired people to change their partisanship (Killian and Wilcox 2008) and determines vote choices for a variety of offices (Abramowitz 1995; Smith 1994; Cook et al 1994a; Cook et al 1994b). Daily across America, anti-abortion activists protest at abortion healthcare providers; some of these activists have harassed and murdered abortion patients and providers.

Abortion is also quite common. At current rates, one in three American women will have an abortion in her lifetime (Jones and Kooistra 2011). In 2008, 1.2 million abortions were performed for a diverse group of women (Jones and Kooistra 2011). The population of abortion patients is demographically very similar to the population of women of childbearing age. As an example, a quarter of abortion patients are Catholic, as are just over a quarter of American women of childbearing age. Sixty percent of women who have abortions are mothers; 56 percent of women aged 15-44 are mothers. Almost half of women who have abortions are married or cohabiting; just over half of women of reproductive age are married or cohabiting. The abortion patient population is also comparable to the population of women of childbearing age with respect to religious service attendance and educational attainment. There are, of course, some differences between the demographics of the women of childbearing age in the US and that of abortion patients. Black and Hispanic women are over-represented among abortion patients, as are women aged 20-30. Women whose family incomes are less than the federal poverty limit are over-represented and women whose family incomes are more than 200% of the federal poverty limit are under-represented (Jones et al. 2010).

Given that abortion is a flashpoint of American political life and that it is a secret tens of millions of women hold, it is a fruitful case to begin the study of secrets. This dissertation has three separate empirical chapters which substantiate the argument laid out here with regard to secrets, their effects on social influence and people’s understandings of the world. I begin with having abortion secrets of one’s own. I then move on to keeping, telling and hearing secrets — one’s own and someone else’s secrets — and the consequences of secret transmission on social influence. I lastly address Americans’ perceptions of abortion patients, their demographic characteristics and motivations to obtain an abortion.

In chapter two, “Cohort Abortion Measures for the United States” I calculate the first set of lifetime abortion incidence measures for birth cohorts in the United States and discuss the implications of cohort rates on public opinion and behavior. Theories of social influence suggest that the tens of millions of women who have had abortions in the United States are themselves social and political actors who can influence others, particularly their peers. Hence, scholarship on abortion as a social and political phenomenon should include incidence rates, particularly cohort incidence rates. I find that the number of lifetime abortions a birth cohort of women has differs by when they were born, even when all the cohorts have spent their entire childbearing years with federally legal abortion. Further, when cohort abortion rates decline, all racial and ethnic groups’ cohort rates decline at approximately the same rate. I constructed the measures using existing vital reports data and Lee-Carter forecasting. I find that cohort rates differ markedly by the year of birth and project they will remain high from legalization into the future.

In chapter three, “Secrets and Misperceptions: the Creation of Self-Fulfilling Illusions” I document the patterns of telling and keeping abortion secrets and illuminate these patterns by comparing them to miscarriage secrets. The comparison between abortion and miscarriage is analytically helpful for two reasons. First, they are demographically similar events that vary with regard to stigma. Both are ways that pregnancies end and are primarily first-trimester events and
hence concealable. Abortion, however, is much more highly stigmatized than miscarriage. Second, having had at least one miscarriage is a near-random event; I can exploit it to control for a number of otherwise unobservable characteristics that may affect whether someone hears an abortion secret, such as the prevalence of pregnancy in a respondents’ social network and the frequency of discussing those pregnancies.

I show that individuals’ attitudes determine whether they experience a heterogeneous or homogenous community. This is not because they have chosen to be with people who agree with them or behave as they like. Rather, it is because the people they are with hide information that would reveal difference. With respect to attributes that can be kept secret, diversity is then not just a characteristic of a community but also a characteristic of individual experience of a community. When individuals keep secrets from those who will disapprove of them, processes of social influence — on public opinion, on tolerance and on behavior — are thwarted.

These results are based on an U.S. nationally representative survey I designed and conducted of over 1600 American adults who provided information on their experience with and knowledge of others’ abortions and miscarriages. They are also the data I employ for the fourth chapter, “Americans’ Perceptions of Abortion Patients” where I examine the relationship between hearing secrets and perceptions of abortion patients. Americans’ perceptions of abortion patients are relevant because Americans’ public opinion on abortion depends on who is getting an abortion and why. As an example, in 2012, 42 percent of Americans believe women who are poor and who cannot afford any more children should be able to obtain a legal abortion whereas 87 percent believe she should be able to obtain a legal abortion if the pregnancy endangers her health (author’s calculations from the 2012 General Social Survey).

No scholarship, to my knowledge, examines Americans’ perceptions of abortion patients. Using insights from the literature on Americans’ perceptions of welfare recipients (Gilens 1996; 2000), racial minorities (Alba et al 2005; Patterson 1998; Wong 2007) and immigrant populations (Sides and Citrin 2007) and college students (Ames 2004), I develop a series of hypotheses to determine the basis of Americans’ perceptions of abortion patients. I find that the degree of personal contact with women who have had abortions is correlated with different perceptions of how common abortion is, the demographic characteristics of abortion patients and their reasons for having an abortion. Personal experience with abortion (either Americans’ own experience or their partner’s) and education predict Americans’ perceptions of how common abortion is and the demographic characteristics of women who have abortions. They are not relevant, however, for Americans’ perceptions of why women have abortions.

This dissertation describes how common abortion is in the United States but documents that it is often kept secret and disclosed very carefully along attitude lines; that is, people who are supportive of legalized abortion will often hear about the abortions their friends and family members have had whereas people who are opposed to legalized abortion rarely do. People who are opposed to legalized abortion think that no one within their social vicinity has had one. Given how common abortion is and the diversity of women who have had them, it is likely that everyone in America has women in their social vicinity who have had an abortion. When abortions are hidden from those who are opposed to them, the potential for the social influence that occurs when diverse others interact is thwarted. This contact has further importance in the way it shapes Americans’ worldview with regard to abortion. Americans who have heard abortion secrets, particularly when they have heard a number of them, understand abortion differently than those who do not. They have a more accurate understanding of how common abortion is, who has them and why.
We are shaped by our communities and we generalize from our communities to the broader world. This work here teaches us that with respect to attributes that can be kept secret, such as abortion, mental illness, sexual orientation, political attitudes among others we are shaped not by the communities we live in but the communities we perceive we live in. These perceptions will be wrong for a variety of reasons, one of which is that others manipulate our perceptions by selectively withholding and revealing information about themselves and others. But these perceptions, however inaccurate, appear to us as real and true. They influence our thoughts, our opinions and our behavior.
CHAPTER 2: COHORT ABORTION MEASURES FOR THE UNITED STATES

When demographers research abortion in the United States, they typically create a period total abortion measure, that is to say, a synthetic cohort measure, using period age-specific rates (Henshaw and Kost 2008, Henshaw 1998, Tietze and Bongaarts 1982). When doing so, they take the abortion rates that women aged 15-45 experience in a given year and imagine a birth cohort that experienced these rates over a lifetime. They then calculate how many abortions this invented, synthetic cohort would have. There are important analytical reasons for this, namely that a period total abortion rate provides a precise description of incidence without regard to population size. Further, they are a convenient, insightful metric to compare across time.

An alternative to a period total abortion rate is a completed cohort abortion rate where rather than inventing a cohort to experience a year’s rates, demographers follow a birth cohort over their childbearing years and measure the number of abortions that the cohort actually experiences. The period rates illuminate women’s experience across ages in a given year and the cohort rates shift attention to women’s experiences as they age throughout their life. As such, the cohort rates require many years of data – in this case 30 – and this span of data was unavailable regarding abortion in the United States until now.

Given that period measures illuminate specific years, they are poor approximations of the cohort experience in times of change. Abortion rates in the United States have changed considerably since federally legalization. For example, in 1990, the abortion rate for women aged 18-19 was 57.9 abortions per 1,000 women; in 2004 the rate was 31.9. For women aged 20-24 in 1990, there were 56.7 abortions per 1,000 women; in 2004 the rate was 39.9 per 1,000 women (Henshaw and Kost 2008). The 18 year olds in 1990 are 24 year olds in 1996. The synthetic cohort approach applies the 1990 rate for 24 year olds – 56.7 – when in fact they experience the 1996 rate – 49.3. Though synthetic cohorts are a helpful tool for understanding period rates, such large and rapid changes in rates render unadjusted synthetic cohort measures inappropriate for providing insight into the abortion experience of women over their reproductive lives.

Abortion rates are, at least in part, a cohort phenomenon for two reasons. First, cohort members influence each other’s demographic behavior and this has been shown to be true for abortion. Women who are considering an abortion seek counsel and resources from their peers (Faria et al 1985; Foster et al 2012). Second, a woman’s attitude partly determines her willingness to have an abortion and many public opinion scholars argue attitudes are cohort phenomena (Stoker and Jennings 2008).

This article is the first contribution in what will hopefully be a long literature on cohort abortion analyses and the demographic translation of abortion. Demographic translation details the interplay between period and cohort measures for both repeatable and singular events and formalizes it mathematically. This article answers two questions: what empirical findings are

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3 The precise definition of a period cohort abortion rates is the average number of abortions a woman would have if she survived to the end of her childbearing years and experienced at each age a particular set of age-specific abortion rates, that is, it is directly analogous to the period total fertility rate. For the purposes of this article, in order to distinguish between the two aggregate measures, those based on a year’s age-specific abortion rates will be called the “period total abortion rate” and those based on a birth cohort’s experienced rates over its childbearing years will be called the “cohort total abortion rate.” “Birth cohort” refers to women who were born in the same year and should not be confused with birth as a pregnancy outcome compared to abortion. Lastly, abortion throughout the article refers to induced, rather than spontaneous abortion or miscarriage.
revealed by cohort abortion analyses? What is the best means by which to translate between period and cohort abortion rates? These questions are answered with regard to the entire population of American resident women of childbearing age and the population decomposed by race/ethnicity.

A cohort perspective reveals marked differences in the cohort total abortion rates by the year in which the women were born. That is, the number of abortions a birth cohort of women has over its lifetime differs greatly by birth year, even when all the cohorts have spent their entire childbearing years with federal legalized abortion. It also shows differences in the mean age of aborting by cohort. I further track the changing experiences of women by race/ethnicity and outline their substantial differences in total rates and mean age of aborting. I find two surprising arenas of stability. When abortion rates decline, beginning around 1990, all race/ethnic groups decline at approximately the same rate such that the relationships between the groups remains stable. Second, even throughout the decline, the distribution of women who have one, two or three abortions stays relatively stable. This is true when looking at periods and cohorts, though due to data limitations, the conclusion regarding cohorts is more tenuous. I also consider racial differences in abortion rates from the period and cohort perspectives. Using insights from the literature on demographic translation, I characterize the relationship between cohort and period abortion experiences. This article fulfills the prescription Norman Ryder put forth for demographers to study “the transformation of measurements from one shape into another to accommodate diverse analytic or policy purposes. In the process, there often occurs the important by-product of the revelation of new and interesting topics for substantive inquiry” (Ryder 1964).

EXISTING LITERATURE

Scholars have done extensive work on abortion from the period perspective (Henshaw and Kost, 2008; Henshaw 1998; Tietze and Bongaarts; 1982; Ventura et al 2001; Jones et al 2010 among others.) They have collected the data to develop age-specific abortion rates and illuminated incidence and differential experiences by race, education, parity and geography. They have examined changing rates over time by the population as a whole and decomposed the rates by sub-population. Despite severe data collection challenges, scholars have painted a complex picture of abortion from the period perspective.

The age-specific abortion rates used to calculate a cohort total abortion rate are the ones experienced by a birth cohort traveling through time. For a period total abortion rate, the rates applied are those for women across birth cohorts in a particular year. Period total abortion rates appear regularly in the abortion literature. This is the first time cohort total abortion rates are used.

Figure 2.1 shows age-specific abortion rates from 1973 to 2004 and the period total abortion rate for the same time span. It further shows projected rates which are discussed below, along with a description of the observed data. The period total abortion rate is increasing until around 1980, plateaus for about a decade, spikes just before 1990 and then declines. The increase

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4 That is, the period total abortion rate is composed of women who are having their first, second or third or more abortion and this distribution does not change markedly from period to period and the cohort total abortion rate for a given cohort is composed of women who have had one, two or three or more abortions in their lifetime and this distribution is relatively constant across cohorts.
is attributed to expanding access after the national legalization of abortion with *Roe v Wade* in 1973.

Figure 2.1 Age-specific abortion rates and period total abortion rates per 1,000 women. The observed age-specific rates are from 1973 to 2004 and the projected rates are from 2005 to 2034. The data are for ages 14-44.

The decline in period total abortion rates largely reflects a decline in abortions to women under age 25. The decline in these young ages is ascribed to two factors: first is the increased use of contraception and the utilization of more effective contraception (Santelli et al 2007) which resulted in a decrease in the unintended pregnancy rate for teenagers (Finer and Henshaw 2006). The second factor is that fewer of those unintended pregnancies ended in abortion; instead women were carrying the pregnancy to term. In 1994, 47 percent of unintended pregnancies to women aged 15-19 ended in an abortion; in 2001 it had dropped to 40 percent. In 1994, 55 percent of unintended pregnancies to women aged 20-24 ended in an abortion; it dropped to 49 percent in 2001 (Finer and Henshaw 2006).

Racial differences in period rates of abortion are considerable; the cohort rates are discussed below. Many of the differences in abortion rates reflect differences in pregnancy rates. Hispanic women have the highest pregnancy rates of women living in America; black women follow shortly behind. Black women have the highest unintended pregnancy rates and the highest rates of aborting those pregnancies. As a result, black women have the highest abortion rates but
they also have high unintended birth rates. White women and Hispanic women have similar rates of aborting unintended pregnancies but because white women have fewer pregnancies and fewer unintended pregnancies, they have a lower abortion rate (Finer and Henshaw 2006). In summary, black women have the highest abortion rates, followed by Hispanic women and then white women. These differentials in abortion rates are the result of differentials at each step in the process that leads to an abortion – pregnancy, deciding to terminate a pregnancy and getting an abortion. In addition to documenting the abortion experience of cohorts of women, this inquiry looks at the relationship between period abortion rates and cohort abortion rates. It thus extends the demographic translation literature from fertility (Ryder 1980 among others), marriage (Keilman 2006) and mortality (Goldstein and Wachter 2006) into a new arena.

There is another literature on period and cohort rates that has not yet entered the realm of abortion. This literature looks to the causal mechanisms of demographic phenomena and explores whether those mechanisms operate in the period or on the cohort. The argument in fertility is characterized by Norman Ryder’s (1980, 1986) case for the centrality of the cohort, whereby early-life experiences affect lifelong childbearing targets and timing. Opposing the cohort approach is the argument put forth by Marie Ni Bhrolchain (1992) that over a restricted time period the variance in fertility is observed in the period and there is little evidence for age-period effects that imprint on the cohort. More recently, cohort explanations for fertility have been proposed to account for low fertility, along with period explanations (as examples, Kohler et al 2004; McDonald 2006; Goldstein et al 2009 among others).

Scholars have not yet discussed whether abortion is a period or cohort phenomenon. Abortion, though closely related to fertility, is a distinct phenomenon and the lessons from the debate on fertility should not be applied directly to abortion. We have reason to believe abortion is, at least in part, a cohort phenomenon. Individuals’ behavior and attitudes with regard to demographic events are subject to social influence; this has been demonstrated across a wide range of examples from birth control usage (Rosero-Bixby and Casterline 1993; Rogers and Kincaid 1981) to ethnic self-identity (Hout and Goldstein 1994), from teenage pregnancy (Crane 1991), to attitudes toward nontraditional family behavior (Rindfuss et al 2004), to abortion outside of the United States (Johnson-Hanks 2002). This influence primarily occurs within the cohort.

Women take into account a number of factors, both personal and practical, when deciding whether or not to have an abortion. These factors include relationship status and stability, career and education goals and caring for dependents among others (Finer et al 2005). If a woman does choose to have an abortion in the United States, she must then garner considerable resources which may include money to pay for the abortion and nonmedical costs such as travel-related costs, childcare and to compensate for lost wages. During this process of consideration and resource acquisition, women primarily consult members of their own cohort -- their partners and their friends (Faria et al 1985; Foster et al 2012). The information, counsel and resources they receive from their peers will depend, in part, on how many of them have had abortions themselves, thus further perpetuating abortion as a cohort phenomenon.

Whether a woman chooses to have an abortion and her confidence in the choice depends on a number of factors, including her attitude toward abortion (Allanson and Astbury 1995; Foster et al 2012). That attitudes are cohort phenomena is a dominant theory in public opinion research (Brooks and Bolzendahl 2004; Stoker and Jennings 2008). As the theory argues, individuals’ attitudes fluctuate early in life but then crystallize in early adulthood and persist throughout the life-course (Alwin and Krosnick 1991; Sears and Funk 1999). Those attitudes are
in part formed by events that occurred during their youth that leave lasting impressions (Sears and Valentino 1997). This is particularly true for abortion where individuals’ attitudes are among the most stable of attitudes (Norrander and Wilcox 1999; Hout and Hastings 2012; Cowan 2012.) We have strong reason to believe abortion is a cohort phenomenon based on theories of social influence within the cohort, that women considering and seeking abortion turn to their peers for support and that attitudes are largely determined by cohort experience.

There are, certainly, period effects on abortion rates. As mentioned above, the use of effective contraception partially caused the decline in abortion rates since 1990 (Santelli et al 2007). In addition, there are significant, and increasing, barriers to women accessing abortion services so that in 2011, more than half of American women of reproductive age lived in a state with four or more major restrictions (Gold and Nash 2012). These barriers include period shocks that may affect women’s access regionally such as the closing of a major facility or state legislation mandating a waiting period. Whether these barriers affect abortion rates is empirically challenging to determine (Henshaw and Finer 2003) but this is plausible given that over half of unintended pregnancies in the United States end in live birth (Finer and Zolna 2011) and presumably some of those mothers would have had an abortion had it been more accessible. Alternatively, a period shock might increase abortion rates; in the wake of New York City liberalizing its abortion law in 1970, there was a sharp decrease in fertility rates particularly for unmarried women attributed to increased access to abortion (Tietze 1973).

Whether the causal explanations of abortion rates lie in the period or the cohort, cohort measures are valuable. Cohort measures are the means by which to describe lived experience; they shift a demographer’s focus from women’s experience in a given year to women’s experience over a lifetime. Whereas demographers may privilege cohorts or periods as explanations when making causal claims, they are on equal footing in descriptive endeavors, like the present article. We look to cohort life expectancy in part because we want to know about the mortality of a given birth cohort. The same motivation brings us to cohort abortion rates.

OBSERVED AND PROJECTED DATA

The data on the total number of abortions span from 1973 to 2004 come from the Guttmacher Institute based on their abortion provider surveys (see Henshaw and Kost 2008 for details). The few girls who have abortions who are under age 14 are included with the counts for girls aged 14 and women who have abortion who are over age 44 are included with the counts for women aged 40-44. Data on the characteristics of women who obtain abortions – age, race/ethnicity and number of prior abortions among other characteristics -- are from the annual abortion surveillance reports from the Centers for Disease Control (CDC) and are available from 1979 to 2004. From 1979 to 2004, the CDC’s racial/ethnic categories were white and black/other; from 1990 to 2005, the CDC had an additional set of categories: non-Hispanic white, non-Hispanic black and Hispanic. In the analyses decomposed by race/ethnicity, girls who had an abortion when they were aged 15 and under are placed in the age 15 group.

Not all states report to the CDC, most importantly California; others report incompletely and this incomplete reporting differs over time. For the distributions of abortions by age, I use the adjusted rates published by the Guttmacher Institute. They adjust for incomplete reporting and apply the adjusted CDC distributions to their national rates. They assume that the distribution of the abortions that are not reported by patient characteristics is identical to that of
the reported. This is a standard assumption in American abortion research (see Henshaw and Kost 2008) and is validated by reference to surveys of abortion patients.

With regard to race/ethnicity-specific rates by age, the unadjusted CDC distributions by race/ethnicity by age are applied to the aforementioned age-specific abortion rates. Some of the race/ethnicity age-specific rates are found in the literature (e.g. Ventura et al 2009) and I calculated the remaining using the same procedures. The adjustments change the distributions of abortions by patient characteristics only slightly (Henshaw and Kost 2008); that the race/ethnicity distributions are unadjusted should not affect the conclusions.

The observed data extend for over thirty years; the majority of birth cohorts, however, are in the midst of their childbearing years when the observed data conclude. To complete these cohorts, I forecast the age-specific abortion rates using the Lee-Carter forecasting method (Lee and Carter 1992). While the abortion rates of women aged 25-44 are relatively constant over the time-spans, the cohort total abortion rates for later birth cohorts depend on projections from more variable age-specific rates. As such, I indicate with a dashed line estimates for which the aggregate rates rely on projected data for ages 24 and below. This affects birth cohorts 1980 to 1990. If I were to exclude these birth cohorts from the analyses, the substantive argument still stands that there are marked differences in cohort total abortion rates by birth cohort.

The Lee-Carter method, though developed for mortality in the United States, has been extended to fertility and is intrinsically well suited for forecasting abortion in the United States. It employs time-series methods and an approach to dealing with the age schedule by decomposing it into an age-profile and a time-variant parameter. The time-variant parameter outlines deviations from the age-profile when the overall level of the event changes.

The Lee-Carter model takes the form:

\[ \ln(T_{x,t}) = a_x + b_x k_t + e_{x,t} \]

\( T_{x,t} \) is the projected age-specific abortion rate; \( a_x \) is an age-specific component that is independent of time and indicates the average shape of the age-profile. The second element is the product of a parameter that varies with time and captures the general level of the event (\( k_t \)) and a coefficient that is age-specific and indicates how the age-specific rate will vary given the change in the overall rate (\( b_x \)). Lastly, there is an age and time specific error term.

The observations from different age and time periods have different precisions because of the different number of events that occur. In light of this heteroskedasticity, I have obtained \( a_x, b_x \) and \( k_t \) by weighted least squares. The weights are abortion counts (Wilmoth 1993). Two constraints are placed – the sum of the squared \( b_x \) coefficients will equal one and the sum of the \( k_t \) parameters will equal zero. By fitting the model to historical data, we obtain estimates for the age-specific and time-varying parameters. The time-varying parameter, \( k_t \), is then forecast using a random walk with drift. These forecast values are combined with the estimated age-specific parameters to calculate future age-specific rates (Lee 2000, Lee and Carter 1992).

In this application of Lee-Carter, I fit it to data from 1980 to 2004 for the total population, from 1980 to 2004 for the race specific data and from 1990 to 2005 for the race/ethnicity specific data. Age-specific abortion rates increased from 1973 to 1980 at which point they stabilized and began to fall around 1990. The ascension is attributed to national legalization in 1973 but is unlikely to affect trends after 2004 and hence is excluded from the data on which the forecast is based.
There are two advantages to using Lee-Carter for forecasting. First, it is a familiar technique for demographers, used in a variety of settings (Lee 1993; Lee 2000; Booth et al 2002 Li and Lee 2005). Second, the model fits the observed data well. Three techniques were used to test the appropriateness of these forecasts. The first was to examine the fitted values for the entire period 1980-2004. It has an average error from the observed data of .009 abortions per 1,000 women and an absolute maximum error of 4.37 abortions per 1,000 women. For all age groups, over 99% of the variance in the observed data is explained by the fitted data. The rates are forecast to 2034 at which point the youngest birth cohort on which we have data will have completed its childbearing years. The forecast rates fit common-sense predictions as can be seen in Figure 2.1. Second, I examined the 95% confidence bands on the forecasted rates which are narrow, though, as to be expected, widen over time. Third, I examined the residuals by age and time (not shown here.) The residuals are homoskedastic. The Lee-Carter method was also employed for forecasting the age-specific abortion rates by race and it performed well though somewhat less so for the minority group and non-Hispanic blacks due to their volatility. As with all forecasts, readers are cautioned that there may be future changes in the trends rendering these forecasts inaccurate.\(^5\)

To examine the lifetime distribution of abortions among women who have them (what proportion of women have one abortion, two abortions etc.) I use the National Survey of Family Growth (NSFG), cycles 5 (1995), 6 (2002) and 7 (2006-2008). The NSFG is a probability survey conducted among non-institutionalized residents of the United States, aged 15-44. This analysis only examines women aged 40-45 in each cycle (N=1701 for 1995; N=1051 for 2002; N=886 for 2006-2008). Abortion underreporting in the NSFG is considerable and well-documented (Jones and Kost 2007 among others). In cycles 6 and 7, respondents answered the questions in a face-to-face interview and then had an opportunity to re-answer some of the pregnancy questions using audio computer assisted self-interview (ACASI) technology which has been shown to reduce underreporting. The ACASI answers have been excluded from my analysis to maintain interview method consistency across three cycles. The analyses rely on two assumptions regarding underreporting which are discussed below.

RESULTS

Cohort Analyses for the Total Population and Decomposed by Race/Ethnicity

Figure 2.2 shows cohort total abortion rates for the birth cohorts 1959 to 1990. The total rates increase until they peak with the 1969 birth cohort at 817 abortions per 1,000 women. The rates then fall by over 228 abortions or 28% of the 1969 rate. Hence, with regard to abortion incidence, the women of the 1969 birth cohort had a distinctly different abortion experience than their daughters.

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\(^5\) The focus of this inquiry is on the completed cohort rates and I compare them to unadjusted synthetic cohort rates. Please contact the author for a discussion of tempo-adjusting period rates for abortion.
Figure 2.2: Observed and projected cohort total abortion rates for birth cohorts 1959 to 1990. The observed age-specific rates are from 1973 to 2004. The data are for ages 14-44. The dashed line represents cohort total abortion rates that are dependent on projected age-specific abortion rates for ages under 25. These rates are high and quite variable over time and hence I have placed reservations on these projections.

Figure 2.3 shows the projected cohort total abortion rates by birth cohort from 1964 to 1990. The data are decomposed into white and minority rates for the birth cohorts 1964 to 1989 and the data are decomposed into non-Hispanic black, non-Hispanic white and Hispanic rates for the birth cohorts 1975 to 1990. It also shows the cohort total abortion rate for the population as a whole. Minority women have higher cohort total abortion rates across the entire time series compared to white women. Both minority and white women have a downward trending cohort abortion rate overall but minority women experience an initial ascent followed by a steeper descent. This largely reflects differences in the experience of women aged 15-24; white women of these ages had stable or falling abortion rates from 1979 to 1992, the rates for minority women of this age increased dramatically during this time period. After 1992, both groups of women had
declining age-specific rates. As a result, the cohort total abortion rates for minority women show an increase followed by a rapid decrease and then a gradual decline as opposed to white women whose rates show a gradual decline throughout.

Figure 2.3: Observed and projected cohort total abortion rates by race/ethnicity for birth cohorts 1964 to 1990: white and minority rates for birth cohorts 1964 to 1989 and non-Hispanic Black, non-Hispanic white and Hispanic rates for birth cohorts 1975 to 1990. The observed age-specific rates are from years 1979 to 2005: white and minority rates from 1979 to 2004 and non-Hispanic Black, non-Hispanic white and Hispanic rates from 1990 to 2005. The data are for ages 15 to 44.

Until 1990, some Hispanic women were categorized as white and others as minority. These categorizations moderated the extremes of both the minority and white groups since Hispanic cohort total abortion rates are in between the rates for non-Hispanic white and non-Hispanic black women. When there are only two racial categories, some Hispanic women are categorized as white and raise the rates of that group and some Hispanic women are categorized as minority and lower the rates of that group.

All three groups – non-Hispanic white, non-Hispanic black and Hispanic women – have cohort total abortion rates that are falling for the birth cohorts 1975 to 1990, according to observed and projected rates. What is particularly noteworthy is that the downward trend affects the different racial and ethnic groups almost identically. The trends for minority, white, non-Hispanic black and Hispanic women all move in parallel. Non-Hispanic white women have a
slightly aberrant trend with a steeper decline. Over this period, cohorts of non-Hispanic white women will see a 41% drop in their cohort total abortion rate compared to a 22% decline for Hispanic women and a 17% decline for non-Hispanic black women.

Lastly, comparing the race-specific rates and the total population rates gives a sense of each race’s contribution to the total population abortion rates. Minority women have much higher rates of abortion than white women; when the population is decomposed by race/ethnicity it is apparent that non-Hispanic black women have the highest rates of abortion, followed by Hispanic women and non-Hispanic white women. While racial and ethnic minority women disproportionally contribute to the total abortion rate, when considering abortion counts, the different sub-populations contribute more evenly. This is a result of the different sizes of the population at risk. As an example, non-Hispanic white women in the 1990 birth cohort are projected to have the lowest cohort total abortion rate of just under 250 per 1000 women. Non-Hispanic black women are projected to have a rate about six times as high, at just over 1500 per 1000 women. But when these women began their childbearing years, non-Hispanic white women outnumbered non-Hispanic black women four to one. As such, the two groups’ cohort total abortion counts are much more even.

During this time period, younger women were decreasing their abortion rates more dramatically than older women. The result was a rise in the mean age of abortion as can be seen in Figure 2.4 which reports the mean age of aborting for all abortions regardless of whether they are first abortions or higher-order abortions. The range of the cohort mean age of aborting for the total population was between 24 years (1967 cohort) and 26 years (1990 birth cohort). The largest year to year change was 1.5 months. The cohort mean age of aborting is relatively stable, a point that is convenient for the analyses on demographic translation, below. Differences in mean age of aborting by race are also modest. The greatest disparity is between non-Hispanic black and non-Hispanic white women at just over 1.5 years for the 1990 cohort. The mean age of abortion for Hispanic women remained relatively constant while that for non-Hispanic white and non-Hispanic black women rose during the same time period. Thus, while Hispanic women’s cohort mean age of aborting began as similar to non-Hispanic black women, it ended the period closer to the mean age of non-Hispanic white women.
Figure 2.4: Observed and projected cohort mean ages of abortion by race/ethnicity for birth cohorts 1964 to 1990: white and minority rates for birth cohorts 1964 to 1989 and non-Hispanic Black, non-Hispanic white and Hispanic rates for birth cohorts 1975 to 1990. The observed age-specific rates are from years 1979 to 2005: white/minority rates from 1979 to 2004 and non-Hispanic Black, non-Hispanic white and Hispanic rates from 1990 to 2005. The data are for ages 15 to 44.

The Distribution of Abortions Across Women

Another area of analysis is the distribution of abortions across women or what proportion of women have what proportion of the abortions. Are the total rates composed of a few women who have a lot of abortions or many women who have one abortion? We do not have complete data from the cohort perspective but sewing together the full time-series from the period perspective and the limited data from the cohort perspective suggests one unified story – stability.

Figure 2.5 shows the period distribution of prior abortions for women having abortions in a given year for 1973 to 2004. The period total abortion rate per 1000 women is also shown. Throughout the time series, most abortion patients are having their first abortion. Given the relatively high rates of illegal abortions before Roe v. Wade in 1973, (see Krannich 1980 for a review), it is possible that these early reports are women indicating their first legal abortion.

Tying the data at face value, at the very beginning of the time series, many women are getting their first abortion though this proportion steadily declines until 1990. From 1990 to 2004, the entire distribution enters stability. Just over 50% of abortion patients each year from 1990 to 2004 were having their first abortion and just over a quarter were having their second. Twelve percent of women who had an abortion were having their third; eight percent were having their fourth or more.
Abortion distribution by cohort is also static, as one would predict given the stability of the period measures. To capture the distribution of abortions across cohorts of women, I turn to the oldest women who have participated in three waves of the National Survey of Family Growth (NSFG). The underreporting of abortion in the survey is well-documented (Jones and Kost 2007 among others). I am not interested in the total number of abortions for which the underreporting would pose a severe challenge. Rather, I am interested in the distribution of abortions by women’s prior abortion experience. I make two assumptions about underreporting. First, that the underreporting happens randomly across women with different numbers of prior abortions— that women who have had one abortion under-report at the same rate as women who have had more. Second, underreporting by abortion order is uniform across birth cohorts. For example, equal
numbers of women who have had four abortions report they had three across the birth cohorts 1951-1967. Under this assumption, the rates of underreporting may differ by abortion order but not by birth cohort. The survey data shown in Table 2.1 support that the first, second or both assumptions are accurate.

Table 1 shows the lifetime number of abortions among women who had any for the birth cohorts 1951-1967. The data are from three rounds of the NSFG where I analyzed the responses from women aged 40-45 in each cross-section. I report them unweighted in 5-year age groups. These data also show stability, that approximately the same proportion of women had one, two etc. abortions across these cohorts. Stability is most likely to occur if my assumptions above were correct. Were the assumptions incorrect, stability would occur only if underreporting was differential in a manner so as to create stability from changing rates, an improbable scenario.

The women represented in Table 1 came of age at the beginning of legalized abortion. During this time access was growing, the period total abortion rate was rising and the period distribution measures had not yet reached stability. Quickly, however, the distribution of abortions across women reached close to their persistent values. In 1974, the first year after federal legalization, 85 percent of abortion patients were having their first abortion. Within ten years, that number dropped to 60 percent of all abortion patients and remained relatively stable after that. Most of the decline occurred within six years after legalization. The period rates of abortion distribution among women rapidly reached stability so even the women who came of age in the early years of legalized abortion show this stability across cohorts.

Table 2.1: The distribution of abortions among women who have had any abortions for birth cohorts 1951-1967. The data are from the National Survey of Family Growth. I examine women aged in 40-45 in Cycle 5 (1995; N=1701), Cycle 6 (2002; N=1051), Cycle 7 (2006-2008; N=886).

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Note: Due to the underreporting, these data can be interpreted as indications of stability only, and should not be taken as true values of the distribution of abortions across women.

**Demographic Translation**

Demographic translation attempts to reconcile the cohort and the period viewpoints by examining whether one can approximate the other for a given phenomenon and time. In this application, it examines whether there is a set of period abortion rates that approximate the cohort abortion rates. This is helpful for two reasons: first, it assists in understanding the rates and their patterns and second, it allows researchers to estimate cohort analyses prior to the cohort no longer being at risk for a given event - in this case, the end of childbearing years concludes when women are at risk of having an abortion. This discussion of demographic translation will
begin with the data on the population as a whole and then will continue to the data decomposed by race and ethnicity.

Figure 2.6 illustrates the basic premise of demographic translation. It shows the age specific abortion rates for (1) the 1974 birth cohort (2) the year 1974 (3) 1988: the year the 1974 cohort reached childbearing age and (4) 1997: the year in which the 1974 birth cohort reached their average age of aborting. These three candidate periods are standard in the translation literature.

The 1974 rates fail as a translation tool. These rates are among the lowest in the time series. The 1988 rates, when the 1974 cohort reaches reproductive maturity, fare better but peak higher than the cohort rates. The period rate is lower than the cohort rate as abortion access becomes more widespread and the period rates are rising. This reflects that the cohort rate is composed of earlier and therefore at this juncture, lower, rates. The period rates plateau between 1980 and 1990 and approximately halfway through that decade, the period and cohort rates cross. As the period rates decline, the cohort rate remains above the period rates, reflecting that the cohort experience is composed of earlier, and now higher, period rates. Due to these fluctuations, the period rate for the cohort’s year of reproductive maturity are a poor proxy for the cohort rates.

The cohort rates most closely mimic the patterns for 1997, the year in which the cohort reached its average age of aborting. This is a common finding in the demographic translation of fertility. Figure 2.6 also shows the challenge of comparing any period and cohort rate; no period rates are identical to the cohort experience in a time of changing rates.

Figure 2.6: Age Specific Abortion Rates for (1) the 1974 Cohort (2) 1974 (3) 1988 when the 1974 cohort reached childbearing age and (4) 1997 when the cohort reached the mean age of aborting. The ages here are 14-44.
Figure 2.7 demonstrates that the total period abortion rate from the year in which the cohort reaches the mean age of abortion approximates the cohort total abortion rate. For each cohort included in the series, 1967 through 1990, I calculated its own mean age of aborting. I then averaged the 23 cohort mean ages of aborting, which was 25. I compared the cohort abortion rates for each cohort with those of the year in which those women turned 25. As an example, the figure compares the cohort total abortion rate for women born in 1960 to the period rates for 1985, the year in which those women turned 25. This mimics an approach used in prior fertility demographic translation research (Ryder 1964, Vallin and Caselli 2006).

Despite the translation improvement, there are notable differences between the two lines. The comparison between the 1970 cohort rate and the 1995 (year in which the 1970 cohort
turned 25) reveals the starkest difference of 105 abortions per 1,000 women. Throughout much of the time series, the cohort total abortion rate exceeds the period rate which is a result of the increase in the mean age of aborting. The average discrepancy over this time period is over 40 abortions per 1,000 women; this is a good but imperfect translation. That there are differences between these two curves is not surprising. Translation theory implies that the two curves will only be the same under strict conditions: the cohort abortion rate is a linear function of time while the age schedule and cohort mean age are not a function of time. These conditions do not hold here. Despite the differences between the curves, this is a close translation.

In order to compare between period and cohort total abortion rates, as in Figure 2.7, one needs an estimate of the cohort mean age of abortion. A period mean age of aborting can only be equal to the cohort mean age of abortion under strict and unlikely conditions such as all women have their abortions at the same age (Keilman 2006 outlines all the conditions.) In the data here, the cohort mean age of aborting was between .5 and 2.25 years higher than the period mean age of aborting for the year in which the cohort reached its mean age of aborting. The period mean age cannot be a proxy for the cohort mean age of aborting. If researchers wish to make cohort estimates before the conclusion of the childbearing years, they should exploit the narrow range and stability of the cohort mean age of aborting and forecast it.

This foray into demographic translation for abortion reveals that the period rates for the year of cohort mean age of aborting are an adequate translation tool, with reservations. Further, there is no period estimate for the cohort mean age of aborting. The cohort mean age of aborting, however, is such a slow moving measure that forecasting it should provide the appropriate benchmark by which to translate between cohort and period rates.

The insights from the demographic translation analyses conducted on the population as a whole remain primarily true for the population decomposed by race and ethnicity. Figure 2.8 shows the comparison between the cohort total abortion rate and the period total abortion rate for the year in which the cohort reached the average of the mean age of aborting. As above, it includes data by race for the cohorts 1964 to 1989 and by race and ethnicity for the cohorts 1975 to 1990. The period rates are an excellent translation tool for white women after the 1967 cohort and for non-Hispanic white women and Hispanic women for the entire series of those data. It does not fare as well for minority women or non-Hispanic black women. The period rates are discrepant with the cohort rates for minority women an average of 44 abortions per 1,000 women and 61 abortions per 1,000 women for non-Hispanic black women. These discrepancies are minor -- less than 4% of the total rates. The maximum discrepancy for minority women was 136 abortions per 1,000 women, for non-Hispanic black women it was 96 abortions per 1,000 women. For both of these groups of women, the cohort rate exceeded the period rate for most of the time series. Figure 2.8 reveals that in some years, comparing across period rates provides a more optimistic view on racial disparities and in some years a more pessimistic view than comparing across cohorts. In either case, the difference between the comparing period or cohort measures is modest.
Figure 2.8: Observed and projected cohort total abortion rate and the period total abortion rate for the year in which the cohort reached the average cohort mean age of aborting by race and ethnicity: white and minority rates for birth cohorts 1964 to 1989 and non-Hispanic Black, non-Hispanic white and Hispanic rates for birth cohorts 1975 to 1990. The period line is the period total abortion rate for the year the corresponding cohort reached the mean age of abortion for the cohorts included in the data series. The observed age-specific rates are from years 1979 to 2005: white/minority rates from 1979 to 2004 and non-Hispanic Black, non-Hispanic white and Hispanic rates from 1990 to 2005. The data are for ages 15 to 44.

There is, again, no good period proxy for the cohort mean age of aborting. In the analysis for the total population, the period mean age of aborting was below the cohort mean age. Here, the reverse is true; the period mean age of aborting exceeds the cohort mean age. The discrepancies are large enough that the same conclusion applies – no period measure is an adequate proxy for the cohort mean age of aborting. The cohort mean age of aborting can be easily and accurately forecasted, however, by race and ethnicity.

The lessons from the analyses for the entire population and the population decomposed by race and ethnicity are the same and provide some shortcuts for future research. First, the period rates from the year of the cohort mean age of aborting is the best tool by which to translate between period and cohort rates. It works remarkably well for white women, non-Hispanic white women and Hispanic white women. It performs less well for the population as a whole and worse yet for minority and non-Hispanic black women, but it is quite adequate.
Second, the period mean age of aborting is an insufficient proxy for the cohort mean age of aborting. Given the stability of the mean age of aborting, however, it can easily be forecast. Those forecasts and the accuracy of the cohort mean age of aborting as a translation tool means that researchers can make good estimates of the cohort experience partway through the childbearing years.

POLICY AND POLITICAL IMPLICATIONS

Beginning with the 1970 cohort, abortion rates declined dramatically, though this is partly an artifact of projecting the age-specific rates. During this time period women increased their use of more effective contraception (Mosher and Jones 2010) which decreased unintended pregnancy rates (Santelli et al 2007). This likely explains some of the decrease in abortion rates.

Decreasing unintended pregnancy rates is the most politically palatable approach to decreasing abortion rates. Women with medical insurance are more likely to use highly effective contraception (Culwell and Feinglass 2007) and mandated coverage of contraception also increases utilization (Sonfield et al 2004) as do other measures to decrease the cost of contraception (Secura et al 2010; Postlethwaite et al 2007). The Affordable Care Act currently mandates that health plans (with a few notable exceptions) cover all Food and Drug Administration approved contraceptives without cost-sharing; this benefit was first implemented in August 2012 (Department of Health and Human Services 2011). Assuming this increases use of highly effective contraception, the attending decrease in unintended pregnancy will result in further declines in the abortion rate by decreasing women’s need for abortion services in the coming years.

Another means by which to decrease abortion rates is by limiting women’s access to abortion either by constraining medical practitioners or by increasing patient barriers. Both sets of barriers have been enacted recently from mandating waiting periods to requiring onerous non-safety related conditions on abortion facilities (Gold and Nash 2012). Though morally and tactically appealing to those opposed to abortion provision, denying women abortions imposes the significant financial burdens and medical risks of a pregnancy and birth. These risks are borne by the woman, her children and society generally (Brown and Eisenberg 1995; Cleland et al 2011). Decreasing abortion rates by decreasing supply leaves women with an unmet need for abortion provision leading to unintended births.

These findings have implications for politics and the study of politics. Numerous social theories articulate the interdependencies of social life and the importance of personal influence on behavior and attitudes (see Friedkin 2006 for a formal model). A lengthy literature demonstrates the effect of interpersonal influence on behavior including college academic performance and the likelihood of joining a fraternity (Sacerdote 2001), dropping out of school and teenage pregnancy (Crane 1991), weight gain (Christakis and Fowler 2007) and family arrangements (Rindfuss et al 2004). Social proximity can also affect political attitudes (Lazarsfeld and Katz 1955, Huckfeldt and Sprague 1995, Mutz 2006, Baldassarri and Bearman 2007, Allport 1954, Williams 1947). The contact hypothesis states that exposure to someone of a particular status or who has engaged in a particular behavior will affect majority members’ attitudes (Williams 1947; Allport 1954; Pettigrew and Tropp 2006; 2008). Exposure is limited by incidence; as incidence declines, the potential for exposure and the attending social influence and
opinion change in turn declines.\textsuperscript{6} Ceteris paribus, I would anticipate public opinion on abortion in the United States to remain stable.

Cohort incidence measures are the analytical tool by which scholars interested in the social and political components of abortion in the United States can incorporate incidence as an explanatory variable. Scholarship on abortion public opinion, (Evans 2002, Hoffman and Johnson 2005, Jelen and Wilcox 2003, Killian and Wilcox 2008), the role of abortion in political polarization (Hout 1999, DiMaggio et al 1996, Mowu and Sobel 2001, Evans et al 2001, Evans 2003, Baldassari and Gelman 2008), abortion social movements (Staggenborg 1991, Doan 2007, Rohlinger 2006, Ferree et al 2002), and the role of political institutions in shaping legal policy (Halfmann 2011) does not yet incorporate incidence. Given theories of social influence, I propose that the incidence rates of abortion over a woman’s lifetime, provided above, can be employed to further our understanding of the social and political components to abortion.

LIMITATIONS

Most of the findings presented here are dependent primarily on forecasts. There are very few cohorts for which I have complete data. Forecasts have inherent limitations and must be approached with caution. They are specifically projections, not predictions. That is, I am not arguing these trends are what the future holds but rather I am projecting into the future based on historic rates. The abortion rates of women aged 25-44 are quite stable and as such I have more confidence in the projections for these ages than for the younger ages. The projections here are used to complete the cohort experience of women who are within their childbearing years at the end of data collection, in 2004. As such, only the later birth cohorts rely on the projections for the younger ages (for example, women who are 18 in 2004, rely on projected rates for ages 19-44 whereas women who are 35 in 2004 rely on projected rates for ages 36-44.) Any number of changes could render these projections poor predictions such as an increase in the use of highly effective contraception or a change in the landscape of abortion provision. Further delays in childbearing would also affect abortion rates because nulliparous women use abortion as a means to delay childbearing and because it would delay the onset of sterilization, the most effective form of contraception.

The forecasts are of age-specific abortion rates which are the building blocks of synthetic and cohort measures. Limitations of these rates are then carried-over into these analyses. As mentioned above, the characteristics of abortion patients are obtained from the CDC’s abortion surveillance reports which rely on voluntary reporting from state health departments. In every survey, the Guttmacher Institute reports of the total number of abortions exceed those of the CDC and the discrepancy ranges from 11-35\% of the total with more recent years having a greater discrepancy (Henshaw and Kost 2008). Further, in some instances, the abortion is reported but the patient characteristic of interest is not. The Guttmacher Institute assumes the distribution of characteristics for the unreported is the same as the reported. This assumption may not be true, especially given California does not report to the CDC.

The analyses on the distribution of abortions across women rely on period data for all ages and cohort data from the National Survey of Family Growth. These data together are highly suggestive of the experience of cohorts but without period data decomposed by age or more

\textsuperscript{6} The realization of social influence requires Americans to talk about their own and others’ personal experiences of abortion. A secret abortion is less influential than a revealed one. Americans do talk about abortions but the patterns of selectively disclosing them also thwarts the realization of social influence (Cowan 2012).
completed cohorts in the NSFG, cohort analyses on the distribution of abortions across women must be read with caution.

Women under-report their abortions in the NSFG and I detailed above two assumptions about this under-reporting. If either of these assumptions is wrong then the NSFG reported data would show stability but the true distribution would not.

CONCLUSION AND FUTURE RESEARCH

Researchers required over 30 years of data to begin the project of cohort analyses of abortion. This is the beginning of that line of inquiry. It has shown two important conclusions. The first is that this is a worthwhile endeavor empirically and is grounded theoretically. Empirically, cohort analyses reveal large differences in abortion experience by cohort.

Theoretically, we expect abortion to be, at least in part, a cohort phenomenon because the decision to have an abortion is affected by social influence within the cohort and because the decision is dependent on, among other things, a woman’s attitude to abortion which is a cohort phenomenon. Further, the cohort perspective transitions the researcher from thinking about incidence in a given year to women’s whole lives and this transition reveals heretofore undiscovered findings.

The second conclusion of this work is that while researchers have waited over 30 years for these analyses, they need not wait so long anymore. The period rates from the cohort’s mean age of aborting are a good approximation of the cohort experience. The mean age of aborting has remained relatively constant at around age 25. Hence, once a cohort reaches age 25, the period rates from that year approximate the cohort’s completed experience without having to wait the additional 20 years required for them to conclude their childbearing years. Alternatively, the mean age of aborting can be forecast and cohort estimates derived from the period rates of that year.

Future research should continue along four avenues. The first is to maintain periodic re-evaluations of the cohort abortion experience of women. Every few years, scholars produce more research on period abortion rates; that research should now include a cohort perspective. This is particularly valuable given how few complete cohorts are analyzed here. Second, the debate regarding period or cohort causal analyses of demographic rates should extend from mortality and fertility into abortion. The two examples of stability – that the decline in abortion rates affected racial/ethnic groups similarly and that the distribution of abortions across women has likely remained stable within the decline – should be interrogated empirically and theoretically. As more cohorts in the NSFG complete their childbearing years, we can gain greater insights into this distribution. Further, we should ask whether this stability in the relationship between the rates for different race/ethnic groups is a result of broad public health campaigns or is it documentation of a process of social influence across races? Lastly, use of effective contraception decreases the demand for abortion; as such, abortion rates should drop without decreasing women’s access to medical care they need. Provisions in the Affordable Care Act remove a major barrier to women’s use of effective contraception. Researchers should identify further barriers that may arise after the Affordable Care Act is fully implemented.
CHAPTER 3: SECRETS AND MISPERCEPTIONS: THE CREATION OF SELF-FULFILLING ILLUSIONS

In the previous chapter, I demonstrated a new way of understanding abortion incidence, that is how common abortion is. In this chapter, I consider not the abortions that women experience but the abortions that others hear of. After all, if secrets are kept, and abortion secrets are, then there will be a gap between the objective prevalence of abortion and the abortions that we learn of and therefore can be influenced by.

In everyday life, we are influenced by those around us. We learn of others’ attitudes, choices and experiences and we are, in turn, influenced by what we have learned. But what if what we have learned is false or incomplete? Then how we perceive the world – or our slice of it – and how the world objectively is will differ. We will be influenced by our perception of the world, however mis-perceived it may be.

Here, I examine one way in which this misperception can develop: through secret-keeping. Each of us has secrets and each of us knows someone else’s secrets too. When we keep secrets, we prevent others from hearing them, from learning about those they know. They then will not be influenced by the information the secret would reveal.

I document differences in hearing secrets and look to patterns of withholding and revealing one’s own and others’ secrets to explain these differences. Given that we are influenced by what we know of the others with whom we interact, patterns of what we do not know will affect these processes of influence.

I designed a survey to study secrets and how they are heard, hidden and revealed. The survey was administered to a nationally representative sample of American adults. Using these data, I find that Americans’ attitudes toward a secret determine whether they hear it. Individuals who are receptive to a given characteristic hear secrets about it and learn that others in their network have that characteristic. Their perception of the prevalence of that characteristic among those they know will then more accurately reflect the objective prevalence. Those who are antagonistic do not hear the secrets and hence will under-estimate the prevalence of this characteristic. If the secret is not heard at all by those who are antagonistic to it then they will mistakenly believe that it does not occur in their social vicinity; they will think that “other kinds of people” have this characteristic, not the people they know. Network composition is then not just a characteristic of a network but also a characteristic of an individual’s experience of a network.

Given these secrets are kept and disclosed along attitude lines, individuals’ perceptions of a social network will be tailored to their liking. Individuals will experience a community of people who agree with them or behave as they like. This experience of a homophilous network is not a result of individuals choosing to be with those who agree with them or behave as they like but because the people they are with imply that they do – they hide what will be met with disapproval. When people do not hear the secrets they will disapprove of, then they will also not engage in the processes of social influence -- on public opinion, on tolerance and on behavior -- that are predicted when individuals come into contact with diverse others.

These findings are based on the test case of two common and concealable secrets. One is subject to high levels of social disapproval – having had an abortion – and as a benchmark I compare it to one subject to low levels of social disapproval – having had a miscarriage. While neither abortion nor miscarriage are joyous events, having had an abortion is understood to speak
to the character of the woman more than having had a miscarriage. Women who have had abortions frequently feel stigmatized (Cockrill and Weitz 2010).

I capture whether Americans have heard these secrets but also the disclosure and withholding patterns of the women, their partners and subsequent confidants. By capturing discussion from all of these vantage points, I can make claims about the mechanisms that result in differences in perceptions of social network characteristics that will, in turn, affect the set of influences to which an individual is exposed.

Abortion and miscarriage secrets are an extreme case but the same process of information transmission and influence applies to less contested attributes that may receive social disapproval and can be concealed such as being an atheist in a devout community or rooting for the New York Yankees in Boston.

SOCIAL INFLUENCE

Network studies and public opinion research assert that individuals are influenced by the people in their social circles. Social influence has been shown in regards to innovation adoption (Coleman et al 1957), business practices (Davis and Greve 1997), college academic performance and the likelihood of joining a fraternity (Sacerdote 2001), dropping out of school and teenage pregnancy (Crane 1991), obesity (Christakis and Fowler 2007), political attitudes (Katz and Lazarsfeld 1955; Huckfeldt and Sprague 1995; Mutz 2006), attitudes toward the homeless (Lee et al 2004), attitudes toward alternative family forms and practices (Rindfuss et al 2004) and likelihood of having a racially diverse set of friends (Emerson et al 2002). Often when individuals are exposed to perspectives and personal experiences different than their own, they are influenced by them.

Awareness of others’ characteristics and behaviors is a necessary condition of all interpersonal influence. To be influenced interpersonally to adopt a new innovation, as an example, one must know that one’s colleague, family or friends have adopted themselves. This information is often obtained through communication; Ryan and Gross (1943) and Coleman et al (1957)’s seminal studies on the diffusion of innovation demonstrate how farmers and physicians communicated with each other and this was necessary for the use of hybrid corn seed and tetracycline became common practice. These are but two of scores of studies that find similarly such that communication and awareness are central to diffusion theory (Rogers 2003). To be influenced interpersonally with regard to behavior, one must know how others behave. That awareness can come from the focal person directly, or it can be told second-hand or third-hand etc by intermediaries (Friedkin 1983).

Formal theories of social influence within social networks examine the structure of the network and the relationships between people (French 1956; Axelrod 1997; Carley 1991; Friedkin 1986; Marsden and Friedkin 1993; Friedkin and Johnsen 2003; Friedkin and Johnsen 2011). These networks are merely the potential for interpersonal communication and influence. Acknowledging communication is a pre-condition to influence, the scholars simplify the model by assuming either that communication has already occurred or that the probabilities of influential communication are uniform across dyads or topics. They then focus on their central interest – the process of social influence itself. Scholars of diffusion theory take another step by specifically studying a communication network or the individuals in a network who are connected by the flows of information (Rogers 2003). But as this inquiry will reveal, even the communication network is a potential network for the transmission of information with regard to
a given topic. As an example, a son communicates with his father and his brother and so they are in a communication network together but there is not complete overlap on the information that will be communicated within those two dyads: he tells his father how his job is progressing and he updates his brother on his romantic life.

This inquiry focuses not on potential communication but on realized communication and how that might differ across dyads and topics; it does so because communication is necessary for the influence process to occur. Take as an example of influence, the attitude change that the contact theory predicts when individuals come into contact with a stigmatized other.\(^7\) The theory argues that when in-group members come into contact with stigmatized out-group members increased tolerance can result (Allport 1954, Williams 1947; for reviews Jackson 1993; Pettigrew 1998; for a meta-analysis, see Pettigrew and Tropp 2006). The theory was developed and initially tested regarding intergroup contact between races, ethnicities and cultural groups. The theory has been tested further and found to work for contact with other stigmatized groups such as sexual minorities (Herek and Capitanio 1996) and the physically and mentally disabled (Pettigrew and Tropp 2006). Contact has reduced prejudice toward out-groups that are not defined by ascribed characteristics such as contact between college students who participate in a sorority, live in a residential college or play football and college students who do none of these activities (the majority in-group) (Biernat and Crandall 1994), people who identify as Republicans or Democrats (Gaertner et al 1999) and generalist and specialist nurses (Oaker and Brown 1986).

The process by which interpersonal contact improves attitudes involves multiple parts. The first step is that members of the in-group learn more about members of the out-group. This, under optimal circumstances, undermines stereotypes about the out-group and as such reduces what Allport described as “cognitive prejudice.” In-group members can then generalize from the given circumstances of the contact to a variety of circumstances. In the second step, in-group behavior toward and expectations of the out-group changes. As an example, if in-group and out-group members must work toward a common goal (one of Allport’s stated optimal conditions), that effort may require a behavior change from the in-group members. Following the behavior and expectation change, contact can facilitate a reduction in anxiety commonly produced by intergroup contact and an increase in positive feelings across groups. In the ideal circumstances, the process concludes with in-group members re-thinking their own status as an in-group, a process called deprovincialization (Pettigrew 1997). If this deprovincialization occurs then the opportunity exists for prejudice reduction to extend not just from the initial target out-group but to other out-groups (Pettigrew 1998).

Scholars have outlined optimal conditions to insure each of these processes and generalizations are fulfilled (Allport 1957; Williams 1947; Brewer and Miller 1984, 1988; Miller 2002; Brown and Hewstone 2005; Gaertner & Dovidio 2000; Gaertner et al 1989 among many others). Recent meta-analysis and reviews have indicated, however, that these optimal conditions need not be met for intergroup contact to change attitudes, often in the direction of reduced prejudice (Pettigrew and Tropp 2006; Brown and Hewstone 2005).

\(^7\) Contact with a member of a stigmatized group is not the only way attitudes can shift. Coming into contact with someone who has a different attitude than one’s own can also shift attitudes (see the literature on interpersonal influence and attitudes or cross-cutting conversations Katz and Lazarsfeld 1955; Huckfeldt and Sprague 1995; Huckfeldt, Johnson, and Sprague 2004; Huckfeldt, Ikeda, and Pappi 2005; Huckfeldt 2007; Mutz 2002a; 2002b; 2006; Sunstein 2009; Baldassarri 2009). Contact with a member of a stigmatized group is an additional method of changing attitudes.
One optimal condition is particularly relevant to secrets: if relationships can be formed before the revelation of out-group status (Pettigrew 2007). Secrets by their very nature are concealable. As such, the in-group member can form expectations and attitudes toward the out-group member in advance of knowing he is a member of a disliked group. Given many secrets are specifically of a personal nature – mental illness, sexual orientation, having a criminal record – we would anticipate their revelation would only occur after a relationship is formed. This is among the ideal conditions under which contact may affect attitudes.

The contact hypothesis predicts increased tolerance and this is largely true but empirical evidence shows that in some instances contact results in greater prejudice. In a meta-analysis of over 700 samples of intergroup contact from the 20th century, Pettigrew and Tropp (2006) found that about 5 percent of the time, intergroup contact resulted in increased prejudice. The process described above outlined that contact would disconfirm stereotypes; this, however, need not be the case. The theory postulates that contact can decrease anxiety toward the out-group. If however, that contact constitutes a negative experience then it may, in fact, increase anxiety. This is an understudied phenomenon (Pettigrew and Tropp 2006) but one that is attracting recent attention.

Interpersonal influence over innovation adoption, behavior, personal characteristics or attitudes requires individuals knowing about each other. For things that are observable like weight gain, skin color or wearing the newest fashion trend, one must merely witness those with whom they interact. For things that are concealable, individuals can specifically manipulate the transmission of that information and who is aware of a given secret. When secrets are withheld then the knowledge is not transferred and influence cannot occur. In the case of the contact hypothesis, when individuals successfully conceal their status then contact effectively does not occur. The interpersonal influence and opinion change (positive or negative) predicted by contact will be thwarted. The existing literature on secrets gives insight into under what circumstances and why one might keep and tell secrets.

SECRETS AND SECRECY

The focus of this article is on the communication of secrets; telling and more importantly for processes of social influence, hearing secrets; as such, the discussion in this article will focus only on the aspects of secrets and secrecy relevant to communication. Hence, a number of elements of secrets and secrecy are outside the scope of this endeavor and will not be addressed such as the social structure of those implicated in a secret (as a recent example, Bruinsma and Bernasco 2004) and the choices those people make with regard to outside pressures (as a recent example, Morselli et al 2007) the revelation of secrets in data collection (Weinreb 2006) or the norms that make something worth concealing in the first place.

There is limited empirical work on secrets, in particular personal secrets, but when taken together, what does exist illuminates some of the conceptual elements necessary to build a comprehensive theory of secrets and secrecy. The characteristics of the secret both inherent (such as logistical complexity) and social (such as legality, morality, stigma) affect the number of people implicated and the disclosure and secrecy patterns.

Secret Disclosure

The empirical work on secrets provides a number of reasons why individuals tell their own secrets. They are told because successfully carrying out the secret logistically requires it, to
get emotional support, to build intimacy and because it is unhealthy and challenging to keep secrets.

Some secrets are ascriptive or near-ascriptive such as having a mental illness or being sexually attracted to someone of the same sex. These secrets could, in theory, be known only to the focal person and never be disclosed. Others are behaviors that are logistically simple and could be executed alone such as Kitts’ study of meat-eating deviants in vegetarian communities on college campuses. They needed neither to coordinate action among many participants nor obtain information but could easily and singularly consume meat on any American college campus (Kitts 2003). Other secrets require only a few participants such as HIV secrets (Shelley et al 1995) or obtaining an abortion, especially a legal one (see Lee 1969 on obtaining an abortion). In both of these cases there is a focal person, the HIV positive respondent or the woman who had the abortion, but the secret necessarily or likely involves others such as the person who transmitted the virus or performed the abortion.

A more logistically complex secret would be obtaining something illegal such as prohibited drugs (Erickson 1981) or an illegal abortion (Lee 1969). These cases require the coordination of two people but likely also involve others who help obtain necessary resources. The majority of women seeking an illegal abortion in Lee’s study, for instance, do not know an abortion provider so had to ask others in an attempt to locate one. The most logistically difficult secrets would be those involving complex crimes that require many participants to be successful (Baker and Faulkner 1993, Erickson 1981, Morselli et al 2007, Bruinsma and Bernasco 2004). In addition to the number of people required, recruitment attempts presumably informed others of the crime who would not participate. These efforts require the secret to be disclosed to many in order to be completed.

In addition to telling one’s own secrets for logistical reasons, people tell their secrets because keeping them is unhealthy and challenging. Individuals who are harboring a secret display mental fatigue, intrusive thoughts and negative physiological symptoms (Pennebaker 1989, Pennebaker 1990, Lane and Wegner 1995). Recent scholarship has shown that people keeping meaningful secrets perceived challenges to be greater and were less likely to help others (Slepian et al 2012). Disclosing these secrets relieves these effects, however, and so motivates disclosure (Pennebaker 1990). These are individual effects but, of course, secret disclosure and secret keeping are social – secrets are told and kept from others.

As Simmel described, all social relationships are characterized by the presence and extent of secrecy (Simmel 1950 p.330). There is, however, no definitive effect of secret disclosure on relationships. In some instances sharing secrets builds intimacy and in other instances, destroys it. In some instances, keeping secrets maintains relationships and in other instances, devastates them. Sharing secrets has shown to build intimacy within adult (Richardson 1988) and children’s relationships (Way 2004). Disclosure generally, that is disclosure of information about one’s self be it secret or not, increases relationship satisfaction (Finkenauer et al 2004), feelings of intimacy (Laurenceau et al 1998), greater emotional involvement (Rubin et al 1980) and is used within experimental work to create “fast friends” of strangers within the laboratory (Aron et al 1997; Page-Gould et al 2008).

Individuals share their own secrets for three primary reasons: to solve logistical problems, to seek support and relieve the negative effects of keeping secrets and because disclosure with discretion creates intimacy. There is less empirical work on why people share others’ secrets but the closely related literature on gossip provides some insights.
Definitions of gossip vary; some include discussions of people either present or absent (Dunbar et al 1997) whereas others only consider discussion of absent third-parties (Hannerz 1967; Eder and Enke 1991). Some definitions include all discussion whereas others only negative evaluative discussion (Feinberg et al 2012; Foster 2004 has an extensive discussion of varying definitions of gossip). The definition that includes only negative evaluative discussion of absent third-parties is the closest to the layman’s use of the word gossip and is most often used. Gossip does not necessarily entail the disclosure of a secret; two friends discussing the extravagance of a third’s newest sports car constitutes gossip but not the revelation of a secret. Further, sharing a secret does not necessarily entail negative evaluations; a friend may share another’s secret so they together can provide help, without judgment. Despite these reservations, the insights from the gossip literature can be instructive.

Gossip is largely considered trivial or destructive to social life. It does, however, have some social benefits. Gossip is a means of information exchange, allowing one to learn about others in their social circles (Hannerz 1967). Gossiping is fun (Spacks 1982; Ben-Ze’ev 1994). It facilitates social comparison without embarrassment or confrontation (Wert and Salovey 2004). Gossiping enforces group norms and strengthens group bonds (Dunbar 2004) and can situate a gossiper as a person “in the know,” someone who has access to little-known information (Kurland and Pelled 2000). And as an individual, it can provide a similar relief as disclosing one’s own secrets (Feinberg et al 2012).

In addition, we can easily imagine disclosing another’s secret for similar reasons as one might disclose their own, even though they are not empirically shown in the gossip literature. Lee (1969) describes that the search for an abortion provider entailed the disclosure of the need for an abortion by intermediaries. This was done in an attempt to help overcome a logistical barrier to finding an abortion provider, not because it was fun or increased the intermediary’s prestige. We can also imagine an intermediary spreading a secret in an attempt to garner other support for the person the secret implicates or to protect that person in another way. Though there is little empirical work on this, these reasons have face validity.

Of course, sometimes people misjudge or do not consider the consequences of disclosing a secret and the disclosure is detrimental to themselves8, their relationships or those they care about. Then they perhaps would have been better-off keeping that secret.

Secret-Keeping

Micro-sociology of the mid-20th century describes individuals withholding their own secrets in order to maintain social identity and avoid social stigma. Stigma is a “deeply discrediting” attribute that “reduces man in our minds from a whole and usual person to a tainted, discounted one” (Goffman [1963] 1986:3). Stigma can propel secrecy; “passing and covering are involved...through which the individual exerts strategic control over the image of himself...stigma management is a general feature of society, wherever there are identity norms” (Goffman [1963] 1986:130). One feature of impression management is concealment: “because of the great rewards in being considered normal, almost all persons who are in a position to pass will do so on some occasion by intent” (Goffman [1963] 1986: 74). These stigmas will be revealed selectively, “in relation to the listener and his understanding” (Simmel 1950:314). Social disapproval provides a motivation toward secrecy, a tactic by which to manage information about one’s self.

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8 For an example on abortion, see Major 1990.
Subsequent empirical work has found that secrecy can be used to maintain not only reputations, as Goffman and Simmel argue, but also relationships which could be damaged by the disclosure of a stigmatizing secret. If the secret is not well-received, the revelation may diminish trust because the alter may feel deceived, that ego is not who she had presented herself to be. This would be a violation of trust in identity (Lewis and Weigert 1985; Holzner 1973) or would otherwise disconnect “our idea of a being and the being itself” (Simmel 2004:178). In these situations, withholding the secret can preserve relationships; within families, withholding secrets to avoid stress or pain increases family satisfaction (Vangelisti 1994; Vangelisti and Caughlin 1997). We could easily imagine relationship preservation to motivate keeping one’s own but also someone else’s secrets and as such would keep the secret from those who might react negatively.

Secrets are also kept by intermediaries so they themselves do not appear as gossips or people who cannot be trusted with sensitive information (Bergmann 1993; Yerkovich 1977). This reputation can be built by being a frequent gossiper (Yerkovich 1977) or by sharing a particularly damaging piece of information about a close friend or family member (Gilmore 1978). In the latter case, it is not the volume of information disclosed nor the frequency but the deep betrayal that earns one the reputation of being untrustworthy.

The existing literature on secrets indicates motivations for both disclosing and keeping one’s own secrets and disclosing and keeping others’ secrets. While it is evident that individuals will try to share their own secrets selectively to those who will not disapprove of them, there is no clear indication of how intermediaries will share information on a given topic. How the information spreads will determine which people have access to what information and influences. This will be predicted by their own attitudes – if intermediaries seek to protect the focal person from social punishment or if they are seeking support, they will try to tell the secret to third-parties who will have positive attitudes. If intermediaries wish to boost their own standing, they will attempt to share the secret to those who will have negative attitudes, to engage in typical gossip. Social networks will then be divided by access to information about network members. The boundary of that division will be, at least in part, attitudes toward that information.

SECRETS AND SOCIAL NETWORKS

While there is a long tradition of scholarship on racial, ethnic and class segregation in the United States, recent work has drawn attention to cleavages of segregation that are concealable attributes such as civic engagement (Skocpol and Fiorina 1999), religiosity and political ideology among others (DiPrete et al. 2011). DiPrete and co-authors use data on perceived segregation, that is, respondents reported on their understanding of their own social network. When considering the implications of segregation on social influence then the respondent’s perception is precisely the relevant metric. It is, undoubtedly though, an inaccurate reporting of the network.

The gap between a respondent’s perceived and objective social network can be a result of secret-keeping or a number of other mechanisms. For example, there may be a lack of information without overt secret-keeping; individuals may not know the political attitudes of the individuals with whom they interact but do not discuss politics (Baldassarri and Bearman 2007). Or alternatively, the information may be distorted without intent such as through bias or error. As an example, respondents tend to ascribe their own attitudes and characteristics to others and therefore, assume homophily (Goel et al. 2010; Jussim and Osgood 1989; Laumann 1969) or
they may be more likely to remember information that confirms their existing attitudes, though evidence for this is mixed (Eagly et al 1999 for a meta-analysis).

Secret-keeping will also create a gap between perceived and objective social networks. If individuals withhold information about themselves or others, they do so precisely because they intend for the prevalence of given behaviors to be misperceived. Two studies have examined the disclosure of secrets within social networks. Both only examined the primary disclosure, that is the disclosure by the individual whose secret it is. Only one, (Shelley et al 1995) actually collected data on disclosure; the authors collected personal network data for 70 HIV positive patients in Atlanta. A majority of the patients limited to whom they disclosed their HIV status and specifically told people who they anticipated would be supportive. The other study (Kitts 2003) does not measure disclosure but does measure deviance and proxies for access to information by a number of other characteristics (e.g. tenure of residence in the community). Kitts also finds evidence for selective disclosure by the individual whose secret it is.

The combination of secret keeping and selective disclosure leads to individuals perceiving their social networks to be different than they actually are. When secrets are told to those who will not disapprove, networks appear as the focal person or ego prefers. The existence of homophilous networks is usually explained three ways: first, individuals become similar to their social networks through processes of interpersonal influence; second, individuals select social networks of similar others and third, structural factors result in similar individuals being in the same social networks. Selective disclosure and secret-keeping provide a fourth route to ego experiencing a homophilous network -- ego can exist in a network where people do not hold his attitudes or behave as he would like but he mistakenly perceives that they do.

The patterns of who hears secrets will differ by the secret’s characteristics. Some secrets are easier to conceal than others and secrets are easier to keep from some people than others. DiPrete et al. (2011) find that relative to other networks, the family is a more diverse network with respect to employment, people who own second homes, incarceration status and sexual orientation and they argue this is in part because it is harder to keep secrets within a family. While it may be logistically harder to keep secrets within a family, the damage caused by revealing the wrong secret can be more severe within a family than within other social realms.

Who hears secrets will also differ by the stigmatizing nature of the secret and the empirical component of this article centers on this. The most stigmatizing secrets, those that are universally abhorred, will barely be shared at all. Secrets that are contested, that is stigmatizing in some contexts and not in others, such as having had an abortion, will be shared more widely but will be shared and kept selectively. People who hold negative attitudes toward a given secret will not learn that their neighbors, family, friends and colleagues are affected by it. They will not learn their cousin has a mental illness, their neighbor had a drug addiction or their best friend had an abortion and they will not have the opportunity to be influenced by this information. The contact hypothesis suggests that were these people to hear the secrets, their attitudes would change.

HYPOTHESES

I propose that people will selectively disclose their own and others’ secrets. The more potentially stigmatizing the secret, the greater the risk of social punishment so the more
important discretion will be in disclosure. As such, I expect that more stigmatized characteristics will be revealed less often.  

**Hypothesis 1:** Among concealable characteristics, the less stigmatized the characteristic is in the wider community, the more people will hear of it and will report knowing someone who has this characteristic.

Considering the literature on stigma, secret disclosure and gossip, I hypothesize a positive relationship between attitude and hearing secrets.

**Hypothesis 2:** Among concealable and stigmatized characteristics, people who hold positive attitudes toward the characteristic are more likely to hear of it and to report knowing someone who has the characteristic.

If hypothesis 2 is correct then we should see variation in reporting knowing someone with a stigmatized characteristic by attitude toward that characteristic. I propose that this variation is due, at least in part, to patterns of secret-keeping and disclosure.

**Hypothesis 3:** Among concealable characteristics, the more stigmatized the characteristic is, the more likely it is to be disclosed to those who are accepting i.e., the person whose secret it is and subsequent confidants will reveal the concealable information to persons least likely to “punish” the person whose secret it is for that revelation.

**EMPIRICAL STRATEGY AND DATA: COMPARING ABORTION AND MISCARRIAGE SECRETS**

To test the hypotheses, I compare miscarriage and abortion secrets in the United States. Miscarriages and abortions are both common events that end pregnancies and are concealable. They are events that women of all subpopulations of Americans experience. They differ, importantly, in regards to associated stigma.

One in three American women will have an abortion in her lifetime (Jones and Kooistra 2011) and an estimated 1.2 million abortions were performed in the United States in 2008. Nearly twenty percent of recognized pregnancies end in abortion (author’s calculations from Ventura et al 2012). The data on abortion incidence are from abortion providers nationally. The Guttmacher Institute conducts an abortion provider census. In addition, they use information about abortion incidence from state health departments in 45 states and the District of Columbia. For a detailed account of the data, see Jones and Kooistra (2011).

Women who have abortions have many similar characteristics as women of childbearing age generally. The patient population is comparable to women of childbearing age generally with regard to religion, motherhood, partner status and education. For example, in 2008, just over a quarter of abortion patients are Catholic, as are just over a quarter of American women aged 15-44. Sixty percent of women who have abortions are mothers; 56 percent of women aged 15-44 are mothers. Almost half of women who have abortions are married or cohabiting; just over half

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9 As an example outside the arena of this case, the literature on the diffusion within organizations and social movements finds that “practices which that accord with cultural understandings of appropriate and effective action tend to diffuse more quickly than those that do not” (Strang & Soule 1998).
of women of reproductive age are married or cohabiting. Fifteen percent of women who have had an abortion attend a religious service at least once a week as do 24 percent of women aged 15-44. The educational attainment of women who have had abortions matches almost precisely the educational attainment of American women aged 15-44 as a whole. There are, of course, some differences between the demographics of the women of childbearing age in the US and that of abortion patients. Black and Hispanic women are over-represented among abortion patients, as are women aged 20-30. Women whose family incomes are less than the federal poverty limit are over-represented and women whose family incomes are more than 200% of the federal poverty limit are under-represented (Jones et al. 2010). Nevertheless, the one in three women who will have an abortion by the time she reaches 45 are drawn from all subpopulations of American women.

The data on the characteristics of abortion patients are from a survey of abortion patients that the Guttmacher Institute fielded in 2008. Medical facilities administered the questionnaire to women obtaining abortions during a given time period. For the third of the women who did not agree to participate in the survey, the facility staff provided information on some demographic and procedure-related information. For more details, see Jones et al (2011.)

Miscarriage is less common than abortion but is still highly prevalent. Of recognized pregnancies, approximately 13 percent end in miscarriage (Stirrat 1990; Goldhaber and Fireman 1991; Rai and Regan 2006). The portion of pregnancies ending in miscarriage is determined by women entering cohort studies in which they take pregnancy tests every week or daily. Clinically recognized pregnancies are defined as one week past expected menses. Many women are not aware they are pregnant at this stage so the 13 percent is likely an over-estimate of the miscarriages women knowingly experience.

Given available data, it is impossible to precisely determine how many women have had miscarriages in order to compare it to abortions. Data on repeat miscarriages in the United States is asked retrospectively in surveys and there is evidence that this method cannot be trusted (Weinberg et al. 1992, Wilcox & Homey 1984). It is certain that there are fewer recognized pregnancies that end in miscarriage than abortion and likely that there are fewer women who have experienced miscarriages than abortions.

Women who have had any miscarriage are representative of the population generally as the majority of first miscarriages are due to random fetal chromosomal abnormalities. The risk of these abnormalities increases with maternal age but is understood to be mostly a random event (Wilcox et al 1988, Rai and Regan 2006). I exploit miscarriage as a near-random event in the comparison to abortion.

Despite its widespread prevalence, stigma concerning abortion is dramatic and more severe than stigma concerning miscarriage. Women are disinclined to disclose their abortion histories (Major & Gramzow 1999) and perceive strong social disapproval in nearly every context (Cockrill & Weitz 2010). The most compelling evidence that miscarriage is less stigmatized than abortion is that women frequently report their abortions as miscarriages to doctors and survey researchers, among others (Jones and Kost 2007, Erviti 2004). Further, abortion is seen as a choice whereas miscarriage is not. As such, women who terminate pregnancies are much more likely to have feelings of guilt and shame after the procedure than women who miscarried (Keefe-Cooperman 2005, Broen et al. 2004, Broen et al. 2005). To be sure, some women who miscarry feel a sense of stigma, but it is usually due to interpreting miscarriage as a sign of infertility (Miall 1985) rather than the stigma of abortion which can be seen as a sign of the woman’s promiscuousness, irresponsibility and immoral character.
This inquiry is interested primarily in who hears abortion and miscarriage secrets. Both miscarriages and abortions usually happen early in the pregnancy and given that, both are concealable (Henshaw and Kost 2008). As a near-random event with little stigma and hence little selective disclosure, Americans of all sub-populations have about even rates of hearing about another’s miscarriage (see Appendix B). It is thus an ideal benchmark for comparing rates of hearing an abortion secret. This is discussed more in relation to Figure 3.1 and Table 3.3 below. In addition, the inclusion of miscarriage allows me to account for otherwise unobservable characteristics that may affect whether individuals hear an abortion secret such how common pregnancies are among those they know and how often respondents hear of those pregnancies.

Data to test the hypotheses come from a nationally representative survey of American adults I designed and administered for this study, the American Miscarriage and Abortion Communication Survey (AMACS). The survey is a nationally representative sample of over 1600 adults in the United States. The survey was conducted over the internet as individuals report higher rates of sensitive behaviors than in other methods (Schroeder, Cary and Vanable 2003).

The survey was implemented by the firm GfK, known as Knowledge Networks at the time of the survey. Knowledge Networks uses a pre-recruited probability-based web panel (Callegaro and Disogra 2008). Respondents are recruited into a panel of 50,000 through random-digit dialing and address-based sampling methods. By joining the panel, respondents agreed to participate periodically in online surveys and were provided internet access and equipment if they did not already have it. As such, this internet survey includes individuals who otherwise would not have participated in internet surveys due to lack of access. The recruitment rate was 15.6 percent. Once recruited, respondents are asked to fill out an initial profile of basic demographic information. This study had a 64.9 percent profile completion rate. Three thousand panel members were invited to specifically take the AMACS survey of which 1640 completed the survey, a completion rate of 54.7 percent. The cumulative response rate, including recruitment into the panel, filling out the profile, and completing the survey was 5.5 percent.

Knowledge Networks’ samples closely match those of traditional RDD surveys and are representative of the United States as a whole (Chang and Krosnick 2009 for Knowledge Networks’ RDD samples; DiSogra et al 2010 on ABS). KN samples are used extensively in academic and government research including the American National Election Survey and the Time-Sharing Experiments for the Social Sciences (TESS). This data collection was its own survey, not one bundled with others or a part of the TESS experiments.

There are two particular benefits to having this survey administered over the internet. Administering surveys on the computer is beneficial when discussing sensitive topics, particularly when done over the internet (Schroeder, Cary and Vanable 2003). Having respondents answer sensitive questions on the computer is standard practice in many of the major American surveys such as the General Social Survey and the National Survey of Family Growth. There are further benefits to not having an interviewer; Paik and Sanchagrin (2012) recently observed the name generator questions, for their repetitiveness, can be affected by an interviewer fatigue effect, which is instead avoided in self-administered data-collection.

Though abortion and miscarriage are events only women experience, this inquiry hinges on Americans’ rates of hearing about abortion and miscarriages. Both men and women can hear about these events and so the sample for this survey is representative of American adults generally.
The data are weighted to adjust for known sources of deviation from an equal probability of selection design. To reduce the effects of non-coverage or non-response bias, a post-stratification adjustment is applied using demographic distributions from the most recent data from the Current Population Survey (CPS) for gender, age, race and ethnicity, education, census region and whether the respondent lives in a city or not. The results are also weighted with regard to internet access, the benchmark distribution Internet Access among the U.S. population of adults are obtained from recruitment data for the panel since this measurement is not collected as part of the CPS. All reported results are weighted.

The AMACS survey captures how abortion and miscarriage secrets spread by asking American-resident adults four modules on their knowledge of others’ experiences of miscarriage and abortion and then about their own experiences of miscarriage and abortion. I will provide a brief description of the survey here; Appendix A has more detailed information. Each of the four modules is structured to allow comparisons across modules. Respondents are randomly assigned to answer questions about others’ abortions or miscarriages first. Having finished a module on one, they then answer the other.

Women are asked “How many women do you know who have had a miscarriage (not including yourself)?” and men are asked “How many women do you know who have had a miscarriage (not including the mother in a pregnancy if you were the father or you intended to parent the child)?” For the module on others’ abortions, the same questions are asked with the same structure but miscarriage is changed to abortion. If respondents do know someone, they are then asked to think about the most recent event they knew of and are asked a series of questions regarding that event. They are asked about their relationship to the woman, how they heard about the event, the timing of the event and when they heard, as well as whether they had already known the woman was pregnant when they heard about the pregnancy loss.

After respondents provide details on the most recent event, they provide information on whom they told. They are asked, “Did you tell anyone about this miscarriage (the most recent one)?” Again, for the abortion module, the question is the same but miscarriage is abortion. If respondents answer affirmatively, they are then asked whether they told anyone in their immediate family; they provide the first names or initials and their relationship. They are then asked an open-ended question: “What are some reasons why you told [loop through names from prior question] about the miscarriage? While this may be hard to remember, please be as specific as possible as your response is important for this research.” Respondents proceed to answer the same questions in reference to whether they told any of their close friends and whether they told anyone else.

Having provided details on whom respondents told, respondents are asked questions about from whom they deliberately kept the pregnancy loss a secret. This set of questions is directly comparable to the section described above on to whom the secret was told. Respondents are asked, “Is there anyone you usually talk with about personal matters but you deliberately did not tell them about this miscarriage?” This question is changed to refer to abortion in the abortion module. In exactly the same manner as in the module where respondents outline to whom they told the secret, they outline from whom they withheld the information and why.

After having answered questions about their knowledge of other people’s abortions and miscarriages, respondents answer two modules on their own experience with these events. They are randomly assigned to answer questions about miscarriage or abortion first. Again, these modules are structured so as to make comparisons with the other modules in the survey. Respondents answer questions about the most recent event, whom they told and why and from
whom they withheld the information. There is a fifth module with standard demographic, network and attitude questions. In it, respondents provide their attitude toward abortion; they are asked “Which of these comes closest to your view?” There are then four possible answers provided: abortion should be generally available to those who want it; abortion should be available but under stricter limits than it is now; abortion should be against the law except in cases of rape, incest, and to save a woman's life; abortion should not be permitted at all. This question captures respondent attitude toward abortion legality. Another question captures respondent attitude toward abortion morality. The analyses presented here only address legality but were replicated with regard to morality and the trends remain the same. It is certainly the case that one’s attitude toward abortion generally may not be represent one’s attitudes toward a particular abortion about which one may or may not hear. When addressing this potential discrepancy it is helpful to again consider that secret disclosure is a function of the dyad. When individuals are determining whether to disclose an abortion secret, they anticipate the potential confidant’s response based on the imperfect information they have which would be of the alter’s generalized attitude. The generalized attitude is the public information about which egos determine whether to share the secret of a particular abortion and so it is the attitude included in these analyses.

Respondents also answer two questions aimed at representing how gregarious they are. The first question is “How often do you spend a social evening with relatives?” with a 7-unit scale ranging from almost daily to never. Another question asks “How often do you spend a social evening with friends?” which has the same scale. I add the two responses to create a gregariousness scale. Respondents are randomly assigned to take the demographics module before or after the four modules on abortion and miscarriage.

Under-reporting of abortion is well-documented (Jones and Kost 2007). As is seen below, the reporting in AMACS of respondents’ own abortion indicates that this survey also suffers from under-reporting. Therefore, these data should not be taken as an indication of the true prevalence of this event. Those who report having experienced a pregnancy loss within a survey are a select group of those who have experienced pregnancy loss. Nonetheless, the data provide insight into how these secrets diffuse. I anticipate the rates of telling and numbers of others told are over-estimates given the response bias in that I have data only on those willing to report an abortion within a survey. As such, the differences between abortion and miscarriage rates will be conservative.

While the AMACS data are the primary data used in these analyses, I also draw on a unique dataset collected at an abortion clinic which gives insight into the beginnings of the disclosure of this secret. They are counseling intake forms for over 5,000 women who presented for an abortion in 2008. The forms were a part of routine care at a privately owned, dedicated abortion clinic in state that does not mandate parental involvement for minors seeking abortion services. Crucial for this study, the women indicated who knows that they are at the clinic and whether the confidants supported their decision (more information on these data can be found in Foster et al 2012).

Demographic information on the patients was obtained from other intake forms. Those data reveal the abortion patients in the clinic are representative of abortion patients nationally but with an under-representation of Hispanic women. This unique dataset sidesteps the under-reporting that is a well-documented pitfall of surveying women about their abortions (Jones and

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10 For parsimony’s sake, the scale is collapsed to categories of ‘very gregarious’ ‘gregarious’ and ‘not gregarious’ for the descriptive statistics.
Kost 2007). It avoids this problem in two ways: first, the women have already revealed they are having an abortion by appearing at the clinic and second, the data collection is not a part of research but rather routine care. The clinic data will be used along with the AMACS survey data to test hypothesis 3.

RESULTS

The AMACS survey data show that miscarriage and abortion secrets are heard at different rates by different Americans. Three-quarters of Americans say they know someone who had a miscarriage; half report knowing someone who had an abortion. Given that abortion is more common than miscarriage (as discussed above using non-survey data), this is a striking indication that abortion secrets have not been communicated as often as miscarriage secrets.

All demographic sub-groups report higher rates of knowing a woman who has had a miscarriage than an abortion. While there is some small variance in differences in knowledge across sub-groups, they are as expected: women hear more miscarriage and abortion secrets than men; older Americans have heard more secrets than younger Americans except for the oldest group. Appendix B provides all the descriptive statistics.

That more Americans report knowing someone who has had a miscarriage than an abortion is a result of both secret-keeping and secret-disclosure. Miscarriage secrets are told to more people than abortion secrets and are kept from fewer people than abortion secrets, as can be seen in Table 3.1. Seventy-seven percent of women and their partners who experienced a miscarriage go on to tell someone else; for each miscarriage they tell, on average, 2.63 people. Sixty-six percent go on to share their abortion secrets to an average of 1.24 people. As such, for each miscarriage, two people are told initially and for each abortion less than one person is told initially. All these differences are statistically significant.

Intermediaries share miscarriage secrets more frequently and to more people than abortion secrets. Thirty-one percent of miscarriage secrets are shared whereas only 16 percent of abortion secrets are (p<.001). When intermediaries did share another person’s miscarriage secret, they told 2.73 people on average and when people shared another person’s abortion secret, they told 2.22 people on average (p<.01). As such, for each person told about another’s miscarriage, .85 people were subsequently told; and for each person told about another’s abortion, .35 people were subsequently told (p<.001).

Not only were abortion secrets told to fewer people than miscarriage secrets, they were kept from more people. Thirty-one percent of individuals who experienced an abortion specifically avoid telling someone with whom they usually speak about personal matters. If they avoid anyone, they avoid 2.6 people on average. Individuals who experienced a miscarriage avoided a similar number of people on average but many fewer of them keep the secret at all, only 7 percent. Therefore, for each abortion, .8 people are avoided and for each miscarriage .2 people are avoided at this initial stage (p<.01). Regarding others’ pregnancy loss, 25 percent avoid disclosing an abortion and 13 percent avoid disclosing a miscarriage (p<.001). More people are avoided for a miscarriage but because fewer people avoid anyone at all, overall .47 people are avoided when disclosing a miscarriage and .74 when disclosing an abortion (p<.001).11

11 The process of secret-keeping and selective disclosure begins even before the pregnancy loss; women are more restrictive in whom they tell about pregnancies that will end in abortion than in miscarriage. Sixty percent of respondents who report knowing someone who had a miscarriage say they had already known about the pregnancy
Though abortion is a more common occurrence than miscarriage in the United States, more people reported knowing someone who has had a miscarriage than an abortion. Table 3.1 illustrates how this difference arises – not only are fewer people informed about an abortion, the abortion secret is kept from more people than miscarriage secrets.

Abortions are often kept secret within families; this was much more common for abortions than miscarriages, as seen in Table 3.2. Nearly all Americans who experience a miscarriage tell a member of their family while less than three-quarters of individuals who experience an abortion do (p<.001). Of people who report knowing about someone else’s miscarriage, 19 percent are the immediate family of the woman; for abortion this is only 11 percent (p<.001). In contrast, it is more common that acquaintances know about an abortion (33 percent) than a miscarriage (27 percent; p<.01). It is also more common for a boyfriend or girlfriend to know about an abortion (8 percent) than a miscarriage (3 percent; p<.001). It is important to note that given the structure of the survey, this boyfriend was not the man involved in the pregnancy but more likely a boyfriend in a relationship that started after the event. The rates of friends and others knowing are similar for miscarriage and abortion.

Americans similarly keep their own abortions secret more frequently than they keep their own miscarriage secrets. Individuals who experience an abortion are more likely to avoid telling close friends or individuals of another relationship than individuals discussing their own miscarriages. These differences are large in magnitude but not statistically significant due to sample size. Eighty percent of people keep their abortions or miscarriages secret from a member of their immediate family.

When discussing others’ experiences, respondents are also more likely keep abortion secrets from their immediate family than miscarriage secrets. Often these individuals are keeping a secret about one family member’s pregnancy loss from another family member, as in a brother who conceals her sister’s pregnancy loss from their parents. These secrets are also kept from confidant’s family members, as an example, a wife who will not share with her husband the news of her friend’s miscarriage. DiPrete et al (2011) show families are an integrative arena in the United States and they explain this in part because of the difficulties in keeping secrets within families. Abortions and miscarriages, at least, are kept secret within families, particularly abortions.

Despite relatively similar prevalence rates, significantly more people report knowing someone who has had a miscarriage than an abortion. This stands in support of hypothesis 1, that among concealable characteristics, more people will report knowing someone who has a less stigmatized characteristic than a more stigmatized one. This difference is due to the patterns of disclosing and withholding secrets which favor the spread of miscarriage secrets compared to abortion secrets. The couple experiencing pregnancy loss, and subsequent confidants share miscarriage secrets more frequently and to more people than abortion secrets. This is a likely but not an inevitable relationship between stigma and the disclosing and withholding of information. Analyses of other secrets will be necessary to fully test hypothesis 1.

while only 24 percent said they knew about the pregnancy in advance of hearing about the abortion. Separate analyses were done on a sample of respondents who knew about the pregnancies in advance of the miscarriage or abortion and on a sample of respondents who did not know about the pregnancies in advance. The same patterns are found as in the sample as a whole indicating these patterns are not due to disclosure of pregnancies.
Table 3.1: Frequency and Magnitude of Secret Telling and Secret Keeping for Own and Others’ Miscarriages and Abortions, AMACS 2012

<table>
<thead>
<tr>
<th>Secret Telling</th>
<th>Respondent or Partner Has Had</th>
<th>Respondent Has Heard of Someone Else’s</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Miscarrye</td>
<td>Abortion</td>
</tr>
<tr>
<td>Respondent disclosed secret (%)</td>
<td>77.31</td>
<td>66.00</td>
</tr>
<tr>
<td>If disclosed, mean number of people told</td>
<td>2.63</td>
<td>1.24</td>
</tr>
<tr>
<td>Total people told per event</td>
<td>2.03</td>
<td>0.82</td>
</tr>
<tr>
<td>Secret Keepinga</td>
<td>Respondent kept secret (%)</td>
<td>7.36</td>
</tr>
<tr>
<td>If kept, mean number of people kept from</td>
<td>2.61</td>
<td>2.63</td>
</tr>
<tr>
<td>Total people secret kept from per event</td>
<td>0.20</td>
<td>0.82</td>
</tr>
<tr>
<td>N</td>
<td>278</td>
<td>179</td>
</tr>
</tbody>
</table>

*** p<0.001, ** p<0.01, * p<0.05  + p<0.10 (two tailed t-tests and tests of proportion were used to determine if there are significant differences between miscarriage and abortion)

a The secrets are kept from individuals with whom the respondent “usually talks with about personal matters” per the survey question

NOTE: When male respondents were discussing their partner’s miscarriage or abortion, an additional person was added to who was told to account for the female partner telling the male respondent.

If respondents indicated they had told someone but did not provide initials that would indicate how many people were told then they are treated as having told someone but are not contributing to how many people were told. Hence, the mean number are conservative.
### Table 3.2: Relationship Patterns of Secret Telling and Secret Keeping of Own and Others’ Miscarriages and Abortions, AMACS 2012

<table>
<thead>
<tr>
<th>Relationship to Woman Who Experienced Event</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse</td>
<td>--</td>
<td>--</td>
<td></td>
<td>2.19</td>
<td>2.56</td>
<td></td>
</tr>
<tr>
<td>Immediate family</td>
<td>--</td>
<td>--</td>
<td></td>
<td>19.26</td>
<td>11.06</td>
<td>***</td>
</tr>
<tr>
<td>Boyfriend or girlfriend</td>
<td>--</td>
<td>--</td>
<td></td>
<td>3.62</td>
<td>7.90</td>
<td>***</td>
</tr>
<tr>
<td>Other family</td>
<td>--</td>
<td>--</td>
<td></td>
<td>16.57</td>
<td>13.01</td>
<td>*</td>
</tr>
<tr>
<td>Close friend</td>
<td>--</td>
<td>--</td>
<td></td>
<td>14.14</td>
<td>15.86</td>
<td></td>
</tr>
<tr>
<td>Other friend</td>
<td>--</td>
<td>--</td>
<td></td>
<td>16.86</td>
<td>16.68</td>
<td></td>
</tr>
<tr>
<td>Acquaintance</td>
<td>--</td>
<td>--</td>
<td></td>
<td>27.35</td>
<td>32.92</td>
<td>**</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99.99</td>
<td>99.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>The woman</td>
<td>--</td>
<td>--</td>
<td></td>
<td>53.04</td>
<td>57.97</td>
<td></td>
</tr>
<tr>
<td>The partner</td>
<td>--</td>
<td>--</td>
<td></td>
<td>7.86</td>
<td>5.12</td>
<td></td>
</tr>
<tr>
<td>Someone else</td>
<td>--</td>
<td>--</td>
<td></td>
<td>39.11</td>
<td>36.38</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.01</td>
<td>99.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whom Respondent Told Secret</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate family</td>
<td>93.91</td>
<td>73.65</td>
<td>***</td>
</tr>
<tr>
<td>Close friend</td>
<td>54.53</td>
<td>50.18</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>18.4</td>
<td>21.65</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.01</td>
<td>99.47</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Whom Respondent Kept Secret From</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate family</td>
<td>81.36</td>
<td>82.3</td>
<td></td>
</tr>
<tr>
<td>Close friend</td>
<td>31.13</td>
<td>53.39</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>16.88</td>
<td>35.02</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99.99</td>
<td>99.99</td>
<td></td>
</tr>
</tbody>
</table>

---

*a* Due to rounding, totals may sum to more or less than 100.

*b* Respondents often told and avoided telling more than one person, hence the percentages for those parts of the table will sum to more than 100.

***p<0.001, **p<0.01, *p<0.05 (two tailed t-tests were used to determine significance between abortion and miscarriage)
Hypothesis 2 states that respondents who have liberal views toward abortion are more likely to hear abortion secrets regarding the women they know than people who have conservative views. As we can see in Figure 3.1, pro-choice Americans are more likely to hear abortion secrets than anti-abortion Americans. One’s attitude has no bearing on hearing miscarriage secrets. Almost 60 percent of respondents who believe abortion should be generally available (40 percent of the sample) report knowing a woman who has had an abortion. Fewer than 40 percent who think abortion should never be legal (13 percent of the sample) report knowing a woman who has had an abortion (p<.001). Regardless of respondents’ attitudes toward abortion, about 80 percent know someone who has had a miscarriage.

Figure 3.1: Percent of Americans who have heard about someone else’s abortion and miscarriage by own attitude toward abortion legality. AMACS 2012. Note the full descriptive statistics of the rates of hearing these secrets by demographics are found in Appendix B.

Table 3.3 reports regression results which demonstrate this relationship between attitude and contact holds within a multivariate analysis. The four models presented in Table 3.3 all demonstrate that Americans who hold conservative views with regard to legalized abortion are much less likely to report knowing someone who has had an abortion than their more liberal counterparts. These are logistic regression models predicting whether a respondent reports knowing someone who has had an abortion. Model fit was diagnosed using Hosmer-Lemeshow’s F-adjusted mean residual test for logistic regression using sample survey data (Archer and Lemeshow 2006). All of the models control for the randomization of modules within the survey; this does not have a substantive effect on the results and are not reported. Model 1 is the simple bi-variate analysis using only the independent variable of interest – attitude toward legal abortion.

The second model additionally controls for the number of miscarriage secrets the respondent has heard which captures how likely the respondent is to hear secrets, particularly pregnancy-related secrets. In the presence of this control, there is still a significant gradient in
hearing abortion secrets by attitude toward abortion. The third model leaves out the miscarriage secret control but includes a series of demographic variables.

The full model, Model 4, predicts hearing an abortion secret while controlling for the full set of demographic variables and the unobservable attributes which are captured by respondent’s knowledge of others’ miscarriages. It remains the case that Americans who hold restrictive views on abortion are much less likely to hear of others’ abortions than American who hold liberal views on abortion. Individuals who believe abortion should be legal under no circumstance are 42 percent as likely to report knowing someone who has had an abortion than those who believe abortion should be generally available (p<0.01). Those who believe abortion should be legal only in the cases of rape, incest or to save the life of the pregnant woman are 64 percent as likely

Table 3.3: Odds Ratio for Hearing an Abortion Secret, AMACS 2012

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abortion Attitude (ref is generally available)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stricter limits</td>
<td>0.89 (0.16)</td>
<td>0.83 (0.16)</td>
<td>1.00 (0.21)</td>
<td>0.97 (0.20)</td>
</tr>
<tr>
<td>Rape/incest/life</td>
<td>0.59*** (0.09)</td>
<td>0.53*** (0.09)</td>
<td>0.66* (0.12)</td>
<td>0.62* (0.12)</td>
</tr>
<tr>
<td>Not at all</td>
<td>0.43*** (0.09)</td>
<td>0.36*** (0.08)</td>
<td>0.44** (0.11)</td>
<td>0.41** (0.11)</td>
</tr>
<tr>
<td>Number of Miscarriages Secrets Heard</td>
<td>1.50*** (0.07)</td>
<td>---</td>
<td>1.42*** (0.08)</td>
<td></td>
</tr>
<tr>
<td>Age (ref 18-24)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>2.42** (0.81)</td>
<td>2.00* (0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-44</td>
<td>3.70*** (1.24)</td>
<td>3.17** (1.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td>5.15*** (1.79)</td>
<td>4.39*** (1.53)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55+</td>
<td>2.53** (0.83)</td>
<td>1.45* (0.68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.47*** (0.07)</td>
<td>0.59*** (0.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race (ref is White, Non-Hispanic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>1.14 (0.29)</td>
<td>1.28 (0.34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, Non-Hispanic</td>
<td>0.40* (0.16)</td>
<td>0.45* (0.17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.17 (0.28)</td>
<td>1.28 (0.31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2+ races, Non-Hispanic</td>
<td>1.35 (0.63)</td>
<td>1.45 (0.68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (ref is less than high school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>1.06 (0.07)</td>
<td>1.02 (0.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Estimate 1</td>
<td>Estimate 2</td>
<td>SE Estimate 1</td>
<td>SE Estimate 2</td>
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<tr>
<td>-----------------------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Some college</td>
<td>1.92*</td>
<td>1.93*</td>
<td>0.56</td>
<td>0.59</td>
</tr>
<tr>
<td>College degree or higher</td>
<td>1.43</td>
<td>1.31</td>
<td>0.45</td>
<td>0.43</td>
</tr>
<tr>
<td>Income (ref is less than $15k)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$15k-$30k</td>
<td>1.28</td>
<td>1.25</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td>$30k-$50k</td>
<td>1.13</td>
<td>1.07</td>
<td>0.32</td>
<td>0.30</td>
</tr>
<tr>
<td>$50k-$75k</td>
<td>1.03</td>
<td>0.98</td>
<td>0.30</td>
<td>0.29</td>
</tr>
<tr>
<td>$75k-$100k</td>
<td>1.56</td>
<td>1.44</td>
<td>0.48</td>
<td>0.45</td>
</tr>
<tr>
<td>$100k-$125k</td>
<td>2.58**</td>
<td>2.54**</td>
<td>0.87</td>
<td>0.87</td>
</tr>
<tr>
<td>$125k+</td>
<td>1.71</td>
<td>1.71</td>
<td>0.57</td>
<td>0.57</td>
</tr>
<tr>
<td>Marital Status (ref is never married)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>0.73</td>
<td>0.77</td>
<td>0.28</td>
<td>0.30</td>
</tr>
<tr>
<td>Widowed</td>
<td>1.44</td>
<td>1.30</td>
<td>0.41</td>
<td>0.38</td>
</tr>
<tr>
<td>Divorced/separated</td>
<td>0.97</td>
<td>0.89</td>
<td>0.21</td>
<td>0.19</td>
</tr>
<tr>
<td>Living with partner</td>
<td>1.78*</td>
<td>1.85*</td>
<td>0.50</td>
<td>0.52</td>
</tr>
<tr>
<td>Religion (ref is Protestant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>1.35</td>
<td>1.47</td>
<td>0.27</td>
<td>0.30</td>
</tr>
<tr>
<td>Other Christian</td>
<td>0.97</td>
<td>0.94</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td>Jewish</td>
<td>0.55</td>
<td>0.50</td>
<td>0.27</td>
<td>0.24</td>
</tr>
<tr>
<td>Other Non-Christian</td>
<td>3.13*</td>
<td>3.2*</td>
<td>1.24</td>
<td>1.28</td>
</tr>
<tr>
<td>None</td>
<td>1.49</td>
<td>1.61</td>
<td>0.50</td>
<td>0.56</td>
</tr>
<tr>
<td>Fundamentalist/Evangelical*</td>
<td>1.67**</td>
<td>1.62**</td>
<td>0.31</td>
<td>0.33</td>
</tr>
<tr>
<td>Urban area</td>
<td>1.34</td>
<td>1.44</td>
<td>0.24</td>
<td>0.28</td>
</tr>
<tr>
<td>Region (ref is Northeast)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Midwest 0.76 0.77
  (0.16) (0.17)
South 0.78 0.78
  (0.16) (0.16)
West 0.84 0.80
  (0.19) (0.19)

Religious Service Attendance (ref is more than once a week)\(^b\)
Weekly 0.73 0.73
  (0.19) (0.20)
Once/twice a month 0.95 0.98
  (0.30) (0.31)
Few times a year 0.85 0.84
  (0.23) (0.24)
Once a year 0.96 1.09
  (0.29) (0.34)
Never 1.12 1.28
  (0.37) (0.43)
Gregariousness 1.08** 1.07*
  (0.03) (0.03)
Constant 1.15 0.58* 0.28* 0.07***
  (0.22) (0.13) -0.17 (0.09)

<table>
<thead>
<tr>
<th>Observations</th>
<th>1607</th>
<th>1605</th>
<th>1496</th>
<th>1495</th>
</tr>
</thead>
</table>

*** p<0.001, ** p<0.01, * p<0.05
\(^a\) Asked of Baptists, Protestants, Catholics and other Christians
\(^b\) Asked of respondents who report having a religion

NOTES: (1) Standard errors are in parentheses. (2) The regressions also controls for randomization within the survey. It does not have a substantive effect on the results. (3) Model fit was diagnosed using Hosmer-Lemeshow’s F-adjusted mean residual test for logistic regression using sample survey data (Archer and Lemeshow 2006).

(p<0.05). Holding these attitudes is one of the largest predictors of reporting knowing someone who has had an abortion.

While one’s attitude toward abortion is a significant predictor of hearing abortion secrets, a few other variables are significant predictors as well. Older Americans are more likely than younger Americans to hear these secrets (p-values range from p<.05 to p<.001). Men are less likely than women (p<.001). Respondents who identify their racial and ethnic status as other, non-Hispanic are less likely to hear of an abortion among the women they know than white, non-Hispanic respondents (p<.05). Individuals who have some college are more likely than Americans who did not graduate from high school to report knowing someone who has had an abortion (p<.05). Individuals in the second-highest income bracket are more likely to report
knowing someone who has had an abortion compared to the lowest income bracket (p<.01). Respondents who identify as Evangelical are more likely to report knowing someone who has had an abortion (p<.01) than respondents are not Evangelical. As expected, more gregarious respondents are more likely to hear abortion secrets.

This all stands in support of hypothesis 2, that pro-choice Americans are more likely to hear abortion secrets than anti-abortion Americans. Hypothesis 3, where we turn now, proposes that this difference in hearing abortion secrets is a result of secret-keeping and selective disclosure. To test hypothesis 3, I examine two data sources. First, I turn to the clinic data, examining whether the confidants of the abortion patients were supportive. Then, I turn to the AMACS data and investigate the qualitative responses in which respondents explained why they disclosed or kept secret their own or others’ pregnancy losses. In both these data sources, I find that women who have had abortions and subsequent confidants disclose abortion secrets selectively to those who are supportive of abortion rights and this helps explain why Americans who are pro-choice more frequently hear abortion secrets than Americans who are anti-abortion.

The clinic’s patients overwhelmingly disclose to people who are supportive. Over 80% of the confidants are supportive; this figure rises to over 90% when I exclude male partners who are the least supportive group and arguably the group women may feel most obliged to tell. This far exceeds the 48% of Americans who are pro-choice. As expected, women are sharing their decision to get an abortion selectively; they seek out those they anticipate will support them and avoid those who will punish them. This supports hypothesis 3 that disclosure will be channeled along lines of pre-existing acceptance.

While the clinic data gave insight into the patterns when individuals share their own secrets, the AMACS data illuminates patterns of revealing someone else’s secrets as well. Respondents spread the news of an abortion or miscarriage selectively, telling some and avoiding others and the AMACS data indicate respondents’ explanations as to why. When talking about their own pregnancy losses or someone else’s, Americans informed others for largely the same reasons. Abortion and miscarriage secrets were kept, however, for quite different reasons.

The most common reasons Americans disclose a miscarriage or an abortion – either one’s own or another’s – is to receive support or because they have an intimate relationship such as being family or close friends. As an example, in explaining why she told a friend about another woman’s miscarriage, a respondent writes, “She and the woman are close friends. She is a seminary student with an emphasis on hospital chaplaincy--she could minister to her friend. We could do something together to make the young woman feel better--we shared a quiet meal and listened/chatted about whatever she was feeling.” Another explains why she told her sister about her miscarriage, “She is my sister. She did not know that I was pregnant to begin with, but the day after I had my miscarriage, I broke down and told her. As I sat there and cried, she just held me in her arms and just listened. She was the most supportive person that day.” A mother wrote how she handled her daughter’s friend’s abortion; “This girl was our daughter’s friend. We love her. We told another friend because she needed to know so she could help.”

Abortion and miscarriage secrets are also told as a means of notification. As an example, if the confidant already knew about the pregnancy, they would be notified about its loss. Respondents cite having to explain an absence from work or a family event as reasons for disclosing the miscarriage.

Differences arise in why miscarriages and abortions are kept secret. This is illustrated in Table 3.4 which reports a quantification of the AMACS data where respondents give qualitative

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12 The intimate relationship may be an example of notification norms as described in Ryan (2006).
answers to why they did or did not share news of a pregnancy loss. Both women who have experienced a pregnancy loss and subsequent confidants keep these secrets to preserve privacy. Abortion secrets are also withheld to avoid stigma whereas miscarriages secrets are not. One’s attitude toward abortion causally determines whether one is knowingly exposed to someone who has had one. In this regard, the contrast between miscarriage and abortion is stark.

Privacy is the most common reason for keeping both miscarriage and abortion secrets. As an example, one respondent wrote “Judith knows the person who miscarried and would be told by the person herself if she wanted to share information. I do not know if my mom, Judith, knew about the pregnancy or not and if I asked, I may reveal private information.” Another writes about not revealing an abortion “The affected person's past decisions are nobody else's business; if she wanted other people to know she is the one to tell them not me.” Privacy is about as common a reason for miscarriage and abortion. Some couples reveal their experience to confidants but specifically ask for their secrecy; secrets are kept from 29 percent of potential confidants for this reason for abortion while only 13 percent for miscarriage (p<.01). This difference is suggestive of the stigma associated with abortion but not miscarriage.

Explicitly avoiding stigma is a much more common reason for keeping abortion secrets compared to miscarriage secrets. Many secrets are kept – by individuals experiencing the abortion and subsequent confidants – specifically to avoid judgment. Of the people individuals avoided telling about their own abortion, 36 percent were due, at least in part, to avoiding stigma. For miscarriage, that is less than 3 percent (p<.001). One respondent writes about her abortion, "My dad would have been upset with me. He would have judged me. I really love my dad and have a close relationship with him. I did not want him to feel disappointed.” Another writes about not telling her mother about her abortion: “She would have been mean and not understanding about it. She would have tried to make me feel horrible. We did not have a relationship of unconditional love; everything with her had a condition....her condition. It was my own problem, I asked her for no help or understanding.”

People similarly withhold other people’s abortion secrets from those who may reject or punish the woman who had the abortion. Avoiding stigma was given as a reason to keep an abortion secret 13% of the time and just 2 percent of the time for miscarriage secrets (p<.001). One woman explains why for years she has kept her close friend’s abortion a secret from her father “My dad is a very judgmental person and a Mormon.” Another woman writes about keeping her friend’s abortion a secret from her mother, “Too judgmental a person to tell something that personal to. She would never let it go and it was simply not her business nor could she be open-minded enough to understand it.” A man explains why he kept an immediate family member’s abortion a secret from a friend, “This is a very private and personal matter which would affect how they view this person.” Some individuals express a lack of stigma around miscarriage as a justification for sharing the information. As one man writes about sharing the news of a friend’s miscarriage, “It's acceptable to talk about miscarriage; a person doesn't look like a killer.”

The clinic data and the qualitative AMACS data indicate that individuals carefully manage both their own and someone else’s abortion and miscarriage secrets. They intentionally share the secrets with those who will be supportive and in the case of abortion, withhold from who might react negatively. This confirms hypothesis 3, the more stigmatized piece of information has a channeled disclosure; the secret travels to those who will be accepting, avoiding those who will not.
Table 3.4: Frequency of Why Secrets are Kept, AMACS 2012

<table>
<thead>
<tr>
<th>Reason</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Miscarriage (%)</th>
<th>Abortion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy</td>
<td>37.5**</td>
<td>42.86</td>
<td>59.24</td>
<td>51.66</td>
</tr>
<tr>
<td>Asked to Keep a Secret</td>
<td>---</td>
<td>---</td>
<td>13.04**</td>
<td>28.91</td>
</tr>
<tr>
<td>Avoiding Stigma</td>
<td>2.5***</td>
<td>36.13</td>
<td>2.01***</td>
<td>13.27</td>
</tr>
</tbody>
</table>

Number of People Secret Kept From: 40, 119, 299, 422

*** p<0.001, ** p<0.01, * p<0.05, + p<0.10 (two tailed t-tests were used to determine significance between miscarriage and abortion.

Note: The responses can have more than one theme. Some responses are not included here due to not being important to the argument. Hence, the columns would sum to more than one hundred if all the themes were included but here they sum to less than 100.
Given that pregnancy loss is concealable, individuals have the opportunity to manipulate who knows this information and who does not. I show that when the information could be damaging, as in the case of abortion, individuals and subsequent confidants avoid disclosing to people who “would have been judgmental” and tell people “who could help.” Hence anti-abortion individuals have a much lower propensity than pro-choice individuals to hear an abortion secret, even controlling for demographic, socio-economic and discussion factors. These different propensities exist within the same network, even within the same family and secrets are kept and told accordingly. Each individual then experiences a somewhat different network composition even within the same objective social network and that experience is determined by pre-existing attitudes.

DISCUSSION

Though abortion is a more common event in the United States than miscarriage, this article shows that more Americans hear of women who have had miscarriages than they hear of women who have had abortions. This is a result of both the patterns of secret telling and keeping: more Americans tell miscarriage secrets to more people than abortion secrets and more Americans keep abortion secrets from more people than miscarriage secrets. Furthermore, there is a strong trend whereby individuals who hold restrictive views toward abortion are much less likely than their liberal counterparts to report knowing someone who has had one.

I have proposed that at least some of this difference in hearing abortion secrets is due to selective disclosure and secret-keeping. There are two other possible explanations: network segregation and interpersonal influence. The network segregation argument that people who are anti-abortion live in networks together and those networks have many fewer women who have had abortions than people who are pro-choice who also live together in social circles with many more women who have had abortions. We cannot know for certain the extent of network segregation but we have reason to believe that it is not severe enough to explain this significant gradient in contact by attitude.

For network segregation to explain the gradient in hearing abortion secrets, networks must be segregated with respect to both abortion attitude and abortion prevalence. If abortion prevalence were randomly distributed among networks segregated by attitude and there was no disclosure distortion, there would be no gradient. If attitudes were randomly distributed among networks segregated by abortion prevalence and there was no disclosure distortion, we would similarly not see a gradient. With regard to segregation by attitude, despite accounts that Americans are sorting into politically like-minded clusters (Bishop 2008; Sunstein 2009), it also appears that individuals are surrounded by a great diversity of opinions (Goel et al 2010; Huckfeldt et al 2004). While this work is not conclusive in the sense that it does not measure entire networks, it is highly suggestive that networks in the United States are not particularly segregated with respect to abortion attitude.

It is also unlikely that networks are also particularly segregated with respect to abortion prevalence given how common abortion is and women who are members of communities traditionally opposed to abortion rights are as represented among abortion patients as they are in the population generally. Further, the presence of secret-keeping indicates these networks are diverse with respect to abortion attitude and abortion incidence. Take for example one respondent. She told her husband about a friend’s abortion; he is pro-choice. She did not tell her mother about the friend’s abortion explaining “She has no tolerance for things that she deems
inappropriate. There would have been a permanent end to a relationship.” This respondent, like the other respondents who are keeping abortions secret from those who would react negatively, live in networks with women who have had abortions and people who are opposed to abortion.

It seems unlikely that network segregation can explain these differences in hearing abortion secrets compared to miscarriage secrets and the gradient in hearing those secrets by attitude toward abortion. Future research, however, could simulate what level of network segregation by abortion prevalence and attitude would be required to create these differences in hearing secrets.

The patterns can also be explained by interpersonal influence, that over time members in networks with women who have had abortions become more liberal toward abortion. This would entail individuals changing their opinion on abortion which they rarely do; eighty-five percent of the AMACS respondents report their abortion opinion has not changed in the past few years. Panel studies have also found stability in individuals’ abortion attitudes over time (Norrander and Wilcox 1999; Hout and Hastings 2012) which indicates that interpersonal influence is only marginally at play here. This is likely because secret-keeping and selective disclosure prevent the contact necessary for social influence.

The data do not exist to test how much of the difference in knowledge by attitude is due to any of these three explanations: selective disclosure and secret-keeping, network segregation or interpersonal influence. To do that, one would need full network data over time that includes who has abortions and how that secret is told and kept. The data presented here illuminate the process of selective disclosure and provide evidence to suggest that it explains some of the gradient in hearing abortion secrets by attitude toward abortion.

Selective disclosure and secret-keeping do more than help explain these patterns in contact by attitude, they illuminate a process that thwarts social influence by preventing the awareness that is a precondition of influence. It is a process that is specifically controlled and manipulated by individuals to protect the person whose secret it is from social punishment.

When secrets are only revealed selectively, social influence is thwarted. Social influence is predicated on individuals having information about those around them; when that information is absent, social influence cannot proceed. Attitudes toward abortion in the United States provide one example. Politicians and social movement actors inundate the public sphere with talk of abortion. Americans, however, are also moved by personal information. One woman in the AMACS sample explained that she had become more opposed to abortion rights in the last few years because she knew of “too many instances where abortion was used instead of birth control.” Another woman explained her increased support of abortion rights by referencing how seriously individuals approach the decision, “I am dear friends with many who have had abortions...I understand why many choose abortion...” Individuals can be moved by personal information but that information is precisely what is being so carefully managed. The literature on social influence, in particular the contact hypothesis, indicates that were people who are opposed to abortion to hear that women they know have had abortions then their opinions would likely change. They may become more liberal toward abortion or more conservative but they would be influenced by this news. But when there is silence rather than discussion individuals cannot influence each other.

Selective disclosure of concealable secrets permits a self-fulfilling illusion; those who are opposed to a given secret do not hear of it. They are relieved of the challenges of facing the truth about those they know and to confront their own beliefs about those implicated in the secret.
CONCLUSION

This inquiry has examined secret-keeping and withholding on a large scale with data representative of Americans nationally. I find secrets of a stigmatizing nature are told to fewer people and kept from more people than secrets which are less stigmatizing. Further, stigmatizing secrets are channeled away from individuals with pre-existing negative attitudes. A person who views a secret favorably will likely have those secrets told to him and will perceive and hence experience a social network with a higher prevalence of individuals with that secret than a person who views a secret negatively and does not hear these secrets, even if they are in the same social network. Scholarship has already shown that social networks shape attitudes; I show that through secret-keeping and sharing, attitudes shape individual experience of social networks as well.

Secret-keeping has further implications for the dialectical process of perceiving and creating the social world described by social constructionists as the process that produces the “social stock of knowledge” (Berger and Luckmann 1967) or “socially derived knowledge” (Schutz 1982). I have shown that individuals can exist within the same objective world but perceive that world differently. As such, the creation of social worlds through conversation is distorted. This bias and distortion are along lines of pre-existing attitudes and is biased toward individuals experiencing a network amenable to them.

In the following chapter, I examine the relationship between having heard abortion secrets and perceptions of abortion patients.
CHAPTER 4: AMERICANS’ PERCEPTIONS OF ABORTION PATIENTS

Those features of the world outside which have to do with the behavior of other human beings…we call roughly public affairs. The pictures inside the heads of these human beings, the pictures of themselves, of others, of their needs, purposes, and relationship, are their public opinions.

-- Walter Lippmann, Public Opinion

No one can know the world as it is; that is particularly so in a nation of over 315 million people as the United States is. No one can know all of her fellow countrymen or even a significant fraction of them. And yet, in a democracy Americans help determine policy and laws that affect them all. As such, Americans are asked to make judgments about the needs and deservingness of others. These perceptions are often wrong but they are consequential. In chapter two, I discussed how common abortion is in the United States. In chapter three, I discussed how often abortion secrets are kept, particularly from people who are opposed to legalized abortion. As such, people who are supportive of abortion rights are more likely to hear abortion secrets whereas people who are opposed to abortion rights are less likely, even if they live in the same social circle. In this chapter, I consider the relationship between hearing abortion secrets and perceptions of the demographic characteristics of abortion patients and their motivations for seeking abortion – the pictures inside Americans’ heads about abortion patients.

The pictures inside Americans’ heads are often incorrect. Americans misestimate the size of groups such as ethnic/racial subpopulations and immigrants (Alba et al 2005; Sides and Citrin 2007; Patterson 1998; Wong 2007; Nadeau et al 1993) and the demographic composition of subgroups (Gilens 1996a, 1999). They misjudge the day-to-day experiences of their fellow Americans (Patterson 1998; Gilens 1996b) and misconstrue the context in which they live (Hochschild 2001).

However incorrect, these perceptions matter for public opinion (Alba et al 2005; Mutz 1998; Nadeau et al 1993; Pettigrew et al 1958; Gilens 1999). With regard to populations, Blalock (1967) has linked the demography of outside groups to feelings of threat by those groups. Gilens (1996a) argues that Americans’ opposition to welfare stems from their belief that the majority of welfare recipients are black and as such, do not have a strong work ethic and therefore are undeserving of assistance. This connection between demography and opinion has been shown with regards to immigrants (Quillian 1995; Sides and Citrin 2007), racial minority populations (Fossett and Kiecolt 1989; Nadeau et al 1993; Alba et al 2005) and religious minority populations (Nadeau et al 1993).

In addition, Americans misperceive events and contexts that have policy implications. These include crime, (Roberts and Stalans 1997; Jencks 2000; Fischer 2010), the risk of global warming (Weber 2006), the economy (Conover et al 1987; Dolan et al 2009), and the experience of receiving healthcare (Jacobs and Shapiro 1994) among others.

This article examines American’s perceptions of women who have abortions. Abortion is at the centerpiece of American politics. It inspires extraordinary passion, fervor and behavior (Maxwell 2002; Verba et al 1995) and can force people to change their political parties (Adams 1997; Carsey & Layman 2006; Killian & Wilcox 2008).

Abortion is an interesting case to examine Americans’ perceptions because it lies somewhere in between an event and a population. The procedure itself is an event; a woman is an abortion patient for only a brief period of time and the experience does not mark her as a
crime marks the perpetrator as a criminal\textsuperscript{13}. And yet, Americans have a picture inside their heads of the abortion patient population and their opinions on abortion depend on this picture of who has abortions and why.

Americans’ opinions regarding abortion are highly dependent on the circumstances of the woman is who is seeking an abortion and why she is seeking it (Cook et al 1992). As an example, in 2012, 42 percent of Americans believe women who are poor and who cannot afford any more children should be able to obtain a legal abortion; 87 percent believe a woman should be able to obtain a legal abortion if the pregnancy endangers her health (author’s calculations from the 2012 General Social Survey). Americans’ opinions regarding specific abortions are enacted through electing politicians and through voting on state referenda regarding abortion (Gold and Nash 2012) some of which target specific sub-groups such as Montana’s 2012 referendum on parental notification for girls under age 16 seeking an abortion (Associated Press 2012).

Given the importance of Americans’ perception of women who have abortions for public opinion, this article asks two questions: first, how do Americans perceive women who have had abortions? And second, on what basis are Americans forming these perceptions?

PERCEPTIONS OF PEOPLE, EVENTS AND CONTEXTS

Americans misperceive much about each other and the nation. Americans consistently misestimate the size of small groups. They greatly overestimate the numbers of blacks, Jews, Hispanics, Asians, American Indians and the foreign-born (Patterson 1998; Wong 2007; Highton and Wolfginger 1992; Alba et al 2005; Hochschild 2001; Seligman and Niemi 2001; Sides and Citrin 2007). They also underestimate the size of white populations. As an example, in 2000, blacks were 12 percent of the population in 2000 and yet Americans believed they were 31 percent. At the time, whites constituted about 75 percent of the US population but Americans perceived them to be 58 percent of the population (Alba et al 2005; Wong 2007). These patterns remain true for religious populations as well. Americans overestimate the size of the Jewish population; 2.5 percent of the population is Jewish but Americans perceive it to be ten times larger whereas Christians who are 83 percent of the nation are seen as 61 percent (Theiss-Morse 2003).

In addition to misperceiving the size of groups, Americans misperceive the everyday experiences and characteristics of group members. The literature on inaccurate stereotypes, though not particularly well-developed (Schneider 2005), documents these misperceptions starting with La Piere’s (1936) work on the stereotypes of Armenian laborers in Fresno, California which found majority-group members exaggerated the Armenians’ levels of dishonesty and reliance on charity.\textsuperscript{14}

Arguably the most important arena for inaccurate stereotypes is race in America (but see also Jussim et al 2009 and Jussim 2012 on the accuracy of stereotypes and McCauley et al 1995 on the accuracy of estimations for both racial minority and total populations). There are multiple ways in which Americans misperceive racial groups, in particular black Americans. While Americans overestimate poverty rates (Patterson 1998), they particularly overestimate the

\textsuperscript{13} Though anti-abortion Americans might consider the procedure a crime, marking her and her healthcare provider as criminals.

\textsuperscript{14} I have favored studies in which there is an external criterion by which to base stereotype accuracy or inaccuracy such as the US Census, or Department of Justice Statistics (see Ryan 2003 for a discussion of accuracy criteria).
proportion of African Americans among the poor (Gilens 1996b). They further overestimate the proportion of welfare recipients that are black (Gilens 2000).

Americans believe black Americans commit more violent crimes than they do (Roberts and Stalans 1997). As an example, a non-representative sample of Americans overestimated the proportion of black criminals who were convicted of violent crimes or major thefts and underestimated the proportion of black criminals who engaged in white-collar crime. They did the reverse for white Americans; overestimating white-collar crimes and underestimating thefts and aggravated assault (Gordon et al 1996). Given these inaccurate perceptions regarding race and crime, Americans’ neighborhood racial composition affects their fear of crime, even when controlling for a wide variety of covariates including actual crime rate (Quillian and Pager 2010).

There is less research with regard to the accuracy of perceptions of gender differences and taken as a whole, the research that does exist is inconclusive. Some work shows that, on average, both men and women have fairly accurate conceptions of each other (Hall and Carter 1999). Other work, however, indicates that Americans have inaccurate conceptions of sexual differences in occupation (McCauley et al 1988; McCauley & Thangavelu 1991), political attitudes (Diekman et al 2002), and college student’s choice of majors and academic success (Beyer 1999).

In addition to groups defined by race or gender, inaccurate stereotypes have been found with regard to social movement actors (Goldberg et al 1975), Americans who hold specific political attitudes or party preferences (Dawes et al 1972; Judd and Park 1993), and college majors (Judd et al 1991).

Americans also misperceive events and contexts; I will present a wide range of examples. They believe that crime is higher than it is especially the violent-crime rate (Roberts and Stalans 1997). Americans further believe that crime has become worse over time when it fact, it has stabilized (Jencks 2000; Hochschild 2001; Fischer 2010).

Americans misperceive the economy overall and the working experiences of others. They have a good general sense of the economy but are unable to accurately estimate current economic conditions or to reasonably predict short-term economic trends (Conover et al 1987; Holbrook and Garand 1996; Dolan et al 2009). A persistent myth in America is that workers became more alienated from their work over time when industrialization brought with it many day-to-day gains for American workers (Fischer 2010). With regard to the federal budget, a fifth of Americans in the mid-1990s believed that the government spends the most money on foreign aid; in fact it spent about 2 percent (Hochschild 2001).

There is a gap between the reality of Americans’ experience and what they think others do. In the mid-1990s when there was a significant call for healthcare reform, most Americans were satisfied with their healthcare but they perceived that the majority of other Americans were not (Jacobs and Shapiro 1994). In 1985, a third of Jews in a region of Northern California did not believe that non-Jews would vote for a Jew for Congress. At the time, all of their representation in Congress was Jewish (Raab 1985).

Approximately two-thirds of black Americans believe that African-Americans as a whole face significant discrimination in wages and promotion and yet a minority of African-Americans report they have faced such discrimination (Patterson 1998). This difference between individuals reporting on their own community or their own lives and that of others is found with regard to perceptions of the quality of public schools (Hess 1987; Hochschild and Scott 1998) and life chances (Crosby et al 1989).
How is this innumeracy and these mischaracterizations to be explained? The literature provides four possible explanations: education, media depictions, projecting from oneself, and inference from one’s local context. I will discuss each in turn.

The first explanation is cognitive ability or education, that the American people, on average, lack the skills or information to accurately perceive groups. Indeed, more educated Americans have more accurate estimates (Alba et al 2005; Wong 2007; Nadeau, Niemi and Levine 1993). Some scholars documenting these misperceptions and their consequences on prejudice and feelings of threat suggest education as a panacea (Alba et al 2005; Allport 1954). Experimental tests, however, demonstrate providing education has mixed results as an intervention. Work regarding numeracy and attitudes toward immigration shows that information does not change attitudes (Sides and Citrin 2007). Whereas research in providing information regarding policy has inconclusive effects on attitudes; some find information can change attitudes (Bullock 2011; Gilens 2001; Howell and West 2009; Kuklinski & Quirk 2000 Study 2) and others find it does not (Sides and Citrin 2007; Kuklinski & Quirk 2000 Study 1).

A second explanation is that Americans learn about others from the media which presents a distorted depiction. Gallagher (2003) found that media influences were among a handful of reasons for white’s innumeracy of black populations (though Alba et al 2005 found no effects of the amount of television watching). The news increasingly depicts groups over people (Mutz 1998) and these representations of many sub-populations are inaccurate (Gilens 1996; Dixon & Linz 2000; Davis 1990; Signorielli 2004; for a review see Greenwood & Lippman 2010).

The media is more likely to cover negative events than positive and rare events than common. Editors are biased when covering crime rates, assuming declining crime rates are temporary and give them little attention (Jencks 1991). News coverage of the economy also skews negative (Nadeau et al 1999; Fogarty 2005) in part because a weak economy receives much more media attention than a strong one (Shah 1999). This media bias is consequential as Americans’ perception of the economy varies with media consumption (Hetherington 1996; Duch et al 2000). When Americans make inference from these distorted depictions – of others, of crime rates, of the economy – these inferences would in turn be inaccurate. This is not as relevant in the case of abortion because, as is discussed below, scant media depict abortion patients.

A third explanation is that people assume others are like themselves and engage in social projection (Ross et al 1977; Krueger 2000; Krueger 2003; Epley et al 2004; see Robbins and Krueger 2005 for a review and meta-analysis). In this explanation, people use themselves as a reference point by which to predict the characteristics and behaviors of others. As an example, Americans’ personal financial situation influences both retrospective and prospective evaluations of the economy; those who are doing better financially believe the economy has and will do better than those who are doing worse financially (Duch et al 2000; Funk and Garcia-Monet 1997). Some evidence tempers this process by suggesting that individuals are more likely to project to in-groups than out-groups (Robbins & Krueger 2005) or to those who are perceived as more similar (Ames 2004).

A final explanation is that Americans take cues from their local contexts. In outlining their “availability heuristic” Tversky and Kahneman (1973) give the example of individuals determining the divorce rate in a given community by recalling who within their network has had a divorce. For most populations, Americans more accurately estimate their local population than the national population and use their local estimates to infer national estimates (Wong 2007; Alba et al 2005). Recent work has shown, however, that with regard to statuses that cannot be
easily observed, such as partisanship and unemployment, Americans misperceive at both the local and national level but they appear to be less reliant on the local context to infer national levels. They likely base their national estimates on media reports (Wong et al 2012).

This innumeracy and mischaracterization has political importance. Individuals who overestimate minority population size also hold negative views toward that population (Alba et al 2005). Furthermore, perceptions of sub-groups correlate with policy attitudes. Americans who erroneously think that black Americans are as well-off as white in a variety of arenas are less likely to support affirmative action and government support to low-income minorities and cities, legal aid to the poor and a host of other policies. The more mistaken they are, the stronger their opposition (Hochschild 2001). Americans’ negative perceptions of racial minorities lead them to disfavor cash assistance (Gilens 1999; Hurwitz & Peffley 1997) and certain forms of government assistance (Bobo and Kluegel 1993), have more lenient guidelines for police searches (Hurwitz & Peffley 1997) and factor race into sentencing of offenders (for a review see Sommers and Ellsworth 2003). Perceptions of the economy affect a wide variety of voting behavior including vote choice (Lewis-Beck et al 2008; Duch and Stevenson 2008 among many others). Americans’ perceptions of others affect their public opinion and policy preferences with regard to others’ and their welfare.

This article will examine Americans’ perceptions of women who have had abortions. Having had an abortion is concealable and therefore is similar to other characteristics that can be kept secret such as partisanship and unemployment. It differs, however, because while abortion is often discussed in the media, rarely are the women who get abortions discussed or depicted in the media. In the absence of media information, Americans may rely on their perceptions of the local contexts or their own experiences to make national estimates.

ABORTION IN THE UNITED STATES

Abortion is a very common medical procedure in the United States. At current rates, one in three women will have an abortion in her lifetime; 1.2 million abortions were performed in 2008 (Jones and Kooistra 2008). Abortion patients are representative of women of childbearing age with regard to motherhood status, religion, religiosity and evangelical affiliation, age and education. There are over-representations of poor and racial minority women among abortion patients. Women have abortions for a wide variety of reasons; the most common are that having a child would interfere with the woman’s education, work or ability to care for her dependents, that she cannot financially afford a baby now and that she did not want to be a single mother or was having relationship problems (Finer et al 2005).

Abortion is also central to American politics. It has caused the re-alignment of political ideologies (Hout 1999). It affects voting behavior for a variety of elected offices (Abramowitz 1995; Smith 1994; Cook et al 1994a; Cook et al 1994b) and inspires party switching (Killian and Wilcox 2008). It has been a salient and vitally important issue in American politics for over thirty years.

Americans’ opinions on abortion depend on the woman and her motivations for seeking an abortion. The General Social Survey probes respondents for their opinions on the legality of abortion in six scenarios; some data on this were presented earlier. The New York Times and CBS News included a large number of additional scenarios in a series of surveys in 1989. Americans opinions change across all the scenarios. In 1989, half of Americans thought abortion should be legally available to a teenager if the baby would force her to drop out of school (no
distinction was made between high school and higher education) whereas 35 percent agreed in the case where having the child would interrupt a woman’s career (Cook et al 1992).

Given the importance of abortion to American politics and that Americans’ opinions regarding abortion legality change according to the woman’s situation, a full understanding of abortion in America must include understanding the “picture inside Americans’ heads.” The literature on innumeracy and characterizations outlines three main sources of these pictures: personal contact, personal experience and the media.

Americans come into contact with women who have abortions under two conditions; first there are women in their social network who have had an abortion and second, they learn about the abortion. Given the number and diversity of women who have had abortions, it is likely that most Americans do in fact know a woman who has had an abortion. These abortions, however, are often kept secret, even within immediate families (Cowan 2012). As such, some Americans encounter women who have had abortions but they are not aware of it, as such, one’s local environment may differ from one’s experienced local environment. This concealability complicates the process of exposure.

The media provide little information with regard to the women who seek abortions and rarely are those women’s voices heard. In analyzing abortion coverage in the New York Times and the Los Angeles Times, Myra Marx Ferree and co-authors find that only 9 percent of speakers are non-expert individuals (Ferree et al 2002 p. 90) and presumably a fraction of those women are seeking or who have had an abortion. Gamson (2001) similarly finds that abortion is narrated in only a handful of television episodes and personal stories of abortion are in a minor fraction of newspaper articles. Rather, the speakers in these articles are primarily representatives of associations or social movements. These speakers use a variety of frames when discussing abortion from abortion being morally wrong, particularly in a Christian nation to abortion devaluing motherhood to abortion being a tool for women’s self-determination (Ferree et al 2004).

Abortion is an event in women’s lives but it is an event that is highly politicized. Americans’ form a picture in their heads about who has abortions and why and their public opinion on abortion depends on that picture.

HYPOTHESES

The hypotheses predict that Americans’ perceptions of who has abortions and why will differ by their contact with women who have had abortions, their personal experience with abortion and their education. Given the lack of media on abortion, it is not tested as a source of Americans’ perceptions.

For ease of presentation, the hypotheses and the results are divided into two sections; the first examines the prevalence of abortion and the characteristics of abortion patients and the second examines their motivations. Both groups include a hypothesis on personal contact, personal experience and education.

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15 Gamson, however, interprets this differently. Despite finding that only 13 percent of his sample of articles included personal narratives of abortion and he discussing only a few television episodes that feature abortion, he finds that the American mass media discourse “concretizes public discourse and helps to counteract excessive abstraction” p. 197

16 I consider personal experience with abortion to be either having had one in the case of women or being the partner of a woman who has had an abortion in the case of men. The majority of women seeking an abortion tell their male partner so secret-keeping is less of a concern for this relationship (Foster et al 2012).
On abortion numeracy and the characterizations of patients:

**H1a:** Americans’ understandings of how many women have abortions and their demographic characteristics will differ depending on their level of personal contact with women who have had abortions.

**H1b:** Following the self-projection hypothesis, Americans’ understandings of how many women have abortions and their demographic characteristics will differ depending on whether they have personal experience with abortion.

**H1c:** Americans’ understandings of how many women have abortions and their demographic characteristics will differ depending on their educational attainment.

On the motivations of abortion patients:

**H2a:** Americans’ understandings of why women have abortions will differ depending on their level of personal contact with women who have had abortions.

**H2b:** Following the self-projection hypothesis, whether Americans have personal experience with abortion will significantly predict their understandings of the why women have abortions.

**H2c:** Americans’ understandings of why women have abortions will differ depending on their educational attainment.

**DATA**

The data come from a nationally representative survey of American adults I designed and administered for this study, the American Miscarriage and Abortion Communication Survey (AMACS). This survey was first used in chapter three and is discussed thoroughly there. In brief, the survey has a sample of over 1600 adults in the United States. The survey was conducted over the internet as individuals report higher rates of sensitive behaviors than in other methods (Schroder, Cary and Vanable 2003).

In addition to the questions analyzed in chapter three on abortion disclosure and hearing abortion secrets, the survey asked respondents to estimate the proportion of women in the United States who would have an abortion during her lifetime. They were further asked about their knowledge of others’ abortion histories and about their own experiences with abortion (male respondents were asked about their partner’s experiences.) Towards the end of the survey, they also answered questions about the demographic characteristics of women who have abortions and the woman’s motivations to have abortions.

**RESULTS**

**Perceptions of The Size and Characteristics of the Abortion Patient Population**

By and large, Americans are innumerate with regard to abortion and mischaracterize women who have them as you can see in Table 4.1. Table 4.1 describes Americans understandings of how many women have abortions and their characterization of those women.
These perceptions are examined for Americans as a whole and by differing levels of contact\textsuperscript{17}, personal experience and education. Americans think that a little under a quarter of women will have an abortion in her lifetime when closer to a third will (see Jones and Kavanaugh 2011 for the current estimate).

Americans also have an inaccurate picture of the demographic characteristics of women who have abortions. They believe the women to be more often married, less often mothers, younger and less educated than abortion patients are. This is particularly noteworthy with regard to motherhood; while over 60 percent of abortion patients are mothers, Americans believe that only 30 percent are. They have an accurate understanding of poverty levels and religiosity (though these two categories’ definition differs between the accurate estimate and the AMACS survey as is detailed in the table notes).

What are the bases for these perceptions? Bivariate analyses show support for all three bases of Americans’ perceptions of abortion patients – personal contact, personal experience and education. Personal contact is associated with believing abortion is more common, more abortion patients are married, mothers and attend religious services regularly. This provides partial support for hypothesis 1a which indicates that Americans perceptions will differ by personal contact.

Personal experience with abortion is also determinative of Americans’ perceptions of abortion patients when analyzed in a bivariate context. Americans who have either had an abortion or their partner has estimate abortion to be more common than Americans who have no personal experience with abortion. They also are significantly more likely to believe patients are married, mothers, high school graduates and regular attendees of religious services. This provides partial support for hypothesis 1b.

Lastly, education is correlated with the estimations for abortion prevalence and five of the six demographic characteristics. It is not correlated with motherhood status. It is not the case, however, that more educated Americans have more accurate estimates. They are less accurate with regard to estimating the proportion of abortion patients who are married and Americans with a bachelor’s degree or more believe that abortion is much less prevalent than it is.

These findings largely hold true when examined in a multivariate context. Table 4.2 reports negative binomial regression analyses predicting prevalence estimates for abortion overall as well as characteristics of abortion patients. I chose a negative binomial model because there is evidence of over-dispersion.

\textsuperscript{17} The options for indicating how many women a respondent knows who has had an abortion range from 0 to 4+. For parsimony’s sake the bivariate analyses are shown in three groupings: 0, 1-2, 3+. The multivariate analyses use all of the options, treating this as a categorical variable.
Table 4.1: Americans' Perceptions of How Many Women Have Abortions and Their Characteristics by Personal Contact, Personal Experience and Education

<table>
<thead>
<tr>
<th>% Who Have an Abortion</th>
<th>Married Mothers</th>
<th>Poor Teenagers</th>
<th>High School Graduates</th>
<th>Attend Religious Services Regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>24.12</td>
<td>24.45</td>
<td>30.35</td>
<td>41.92</td>
</tr>
<tr>
<td>Number of Abortion Patients R Knows 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>22.59</td>
<td>23.39</td>
<td>26.98</td>
<td>41.67</td>
</tr>
<tr>
<td>1 or 2</td>
<td>23.68</td>
<td>24.43</td>
<td>31.66***</td>
<td>41.83</td>
</tr>
<tr>
<td>3+</td>
<td>30.57***</td>
<td>27.56*</td>
<td>37.68***</td>
<td>42.95</td>
</tr>
<tr>
<td>R/Partner had an Abortion 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31.3***</td>
<td>30.9**</td>
<td>43.4***</td>
<td>44.39</td>
</tr>
<tr>
<td>No</td>
<td>23.20</td>
<td>23.64</td>
<td>28.51</td>
<td>41.74</td>
</tr>
<tr>
<td>Educational Attainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School 3</td>
<td>27.79***</td>
<td>18.38***</td>
<td>28.20</td>
<td>35.63**</td>
</tr>
<tr>
<td>High School</td>
<td>26.93</td>
<td>24.98</td>
<td>31.96</td>
<td>45.65</td>
</tr>
<tr>
<td>Some College</td>
<td>25.02</td>
<td>24.14</td>
<td>30.85</td>
<td>42.59</td>
</tr>
<tr>
<td>Bachelor's Degree or More</td>
<td>18.64</td>
<td>26.83</td>
<td>29.11</td>
<td>40.12</td>
</tr>
<tr>
<td>Accurate Estimate 4</td>
<td>30</td>
<td>15</td>
<td>61</td>
<td>42.5</td>
</tr>
</tbody>
</table>

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

1 Significance indicates whether the estimate differs from the estimate by Americans who do not report knowing any woman who has had an abortion.
2 Significance indicates whether the estimates for Americans who personal experience with abortion differs from those who do not.
3 Significance was determined using analysis of variance.
4 The accurate estimates are not taken from this survey but rather the existing literature (Jones and Kavanaugh 2011; Jones et al 2010).
5 The question in the AMACS data references women who are poor or on welfare. The accurate estimate is for women who are below the federal poverty limit.
6 The question in the AMACS data references women who attend church regularly. The accurate estimate is for women who attend religious services at least once a month.
<table>
<thead>
<tr>
<th>Knowledge of Others' Abortions</th>
<th>Total Abortion Prevalence</th>
<th>Proportion of Patients who are Married</th>
<th>Proportion of Patients who are Mothers</th>
<th>Proportion of Patients who are Poor</th>
<th>Proportion of Patients who are Teenagers</th>
<th>Proportion of Patients who Have Graduated from High School</th>
<th>Proportion of Patients who Attend Religious Services Regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows of 1 Woman's Abortion</td>
<td>1.03 (0.070)</td>
<td>1.03 (0.066)</td>
<td>1.10 (0.067)</td>
<td>1.01 (0.05)</td>
<td>1.00 (0.05)</td>
<td>1.01 (0.047)</td>
<td>1.13 (0.077)</td>
</tr>
<tr>
<td>Knows of 2 Women's Abortions</td>
<td>1.13 (0.082)</td>
<td>1.03 (0.076)</td>
<td>1.13* (0.071)</td>
<td>1.00 (0.06)</td>
<td>1.00 (0.05)</td>
<td>1.03 (0.052)</td>
<td>1.16 (0.089)</td>
</tr>
<tr>
<td>Knows of 3 Women's Abortions</td>
<td>1.13 (0.11)</td>
<td>1.06 (0.10)</td>
<td>1.15 (0.11)</td>
<td>1.01 (0.09)</td>
<td>0.96 (0.08)</td>
<td>0.94 (0.070)</td>
<td>1.10 (0.12)</td>
</tr>
<tr>
<td>Knows of 4+ Women's Abortions</td>
<td>1.42*** (0.12)</td>
<td>1.18 (0.13)</td>
<td>1.32*** (0.10)</td>
<td>1.07 (0.09)</td>
<td>0.99 (0.06)</td>
<td>1.19** (0.069)</td>
<td>1.24* (0.13)</td>
</tr>
<tr>
<td>Respondent/Partner had an Abortion</td>
<td>1.21* (0.095)</td>
<td>1.21* (0.10)</td>
<td>1.28*** (0.089)</td>
<td>1.07 (0.08)</td>
<td>1.10 (0.06)</td>
<td>1.06 (0.061)</td>
<td>1.18* (0.098)</td>
</tr>
<tr>
<td>Education (ref is less than high school)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>HS</td>
<td>0.99 (0.100)</td>
<td>1.27* (0.14)</td>
<td>1.10 (0.11)</td>
<td>1.23* (0.11)</td>
<td>1.20* (0.10)</td>
<td>1.12 (0.093)</td>
<td>1.12 (0.15)</td>
</tr>
<tr>
<td>Some College</td>
<td>0.90 (0.097)</td>
<td>1.26* (0.14)</td>
<td>1.04 (0.11)</td>
<td>1.19 (0.11)</td>
<td>1.19* (0.10)</td>
<td>1.09 (0.092)</td>
<td>1.24 (0.16)</td>
</tr>
<tr>
<td>Bachelor's degree or higher</td>
<td>0.72** (0.075)</td>
<td>1.41** (0.16)</td>
<td>1.03 (0.11)</td>
<td>1.12 (0.11)</td>
<td>1.08 (0.09)</td>
<td>1.18 (0.09)</td>
<td>1.31* (0.18)</td>
</tr>
<tr>
<td>Age (ref 18-24)</td>
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<tr>
<td>25-34</td>
<td>0.94 (0.097)</td>
<td>0.86 (0.11)</td>
<td>0.89 (0.10)</td>
<td>0.96 (0.08)</td>
<td>0.81* (0.07)</td>
<td>0.88 (0.075)</td>
<td>0.81 (0.093)</td>
</tr>
<tr>
<td>35-44</td>
<td>0.92 (0.097)</td>
<td>0.94 (0.12)</td>
<td>1.04 (0.12)</td>
<td>0.92 (0.08)</td>
<td>0.84* (0.07)</td>
<td>0.96 (0.077)</td>
<td>1.00 (0.11)</td>
</tr>
<tr>
<td>45-54</td>
<td>0.80 (0.093)</td>
<td>0.91 (0.11)</td>
<td>0.95 (0.11)</td>
<td>0.84 (0.08)</td>
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</tr>
<tr>
<td>55+</td>
<td>0.77** (0.076)</td>
<td>1.15 (0.13)</td>
<td>1.15 (0.12)</td>
<td>0.91 (0.07)</td>
<td>0.81** (0.06)</td>
<td>1.00 (0.076)</td>
<td>0.99 (0.11)</td>
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<tr>
<td>Male</td>
<td>0.86** (0.045)</td>
<td>0.99 (0.052)</td>
<td>0.93 (0.047)</td>
<td>1.02 (0.04)</td>
<td>1.02 (0.04)</td>
<td>0.99 (0.038)</td>
<td>1.07 (0.060)</td>
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<tr>
<td>Race (ref is White, Non-Hispanic)</td>
<td>1.55***</td>
<td>1.18</td>
<td>1.55***</td>
<td>1.01</td>
<td>0.96</td>
<td>1.08</td>
<td>1.33**</td>
</tr>
<tr>
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<td>------</td>
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<tr>
<td>Black, Non-Hispanic</td>
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<tr>
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<td>(0.14)</td>
<td>(0.13)</td>
<td>(0.13)</td>
<td>(0.08)</td>
<td>(0.07)</td>
<td>(0.081)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>Other, Non-Hispanic</td>
<td>1.79***</td>
<td>1.26</td>
<td>0.97</td>
<td>1.15</td>
<td>1.12</td>
<td>0.90</td>
<td>0.81</td>
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<tr>
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<td>(0.30)</td>
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<tr>
<td>Hispanic</td>
<td>1.28**</td>
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<td>0.99</td>
<td>0.94</td>
<td>0.94</td>
<td>0.90</td>
<td>1.02</td>
</tr>
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<td>(0.088)</td>
<td>(0.092)</td>
<td>(0.07)</td>
<td>(0.07)</td>
<td>(0.061)</td>
<td>(0.093)</td>
</tr>
<tr>
<td>2+ races, Non-Hispanic</td>
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<td>1.17</td>
<td>1.24</td>
<td>0.99</td>
<td>0.90</td>
<td>0.93</td>
<td>1.13</td>
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<tr>
<td>Income (ref is less than $15k)</td>
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</tr>
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<td>$15k-$30k</td>
<td>1.15</td>
<td>0.98</td>
<td>1.15</td>
<td>1.04</td>
<td>1.14</td>
<td>1.06</td>
<td>1.26*</td>
</tr>
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<td>(0.11)</td>
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<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.086)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>$30k-$50k</td>
<td>0.96</td>
<td>0.97</td>
<td>0.99</td>
<td>0.92</td>
<td>0.98</td>
<td>1.11</td>
<td>1.13</td>
</tr>
<tr>
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<td>(0.095)</td>
<td>(0.099)</td>
<td>(0.093)</td>
<td>(0.08)</td>
<td>(0.08)</td>
<td>(0.087)</td>
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<td>1.12</td>
<td>1.18*</td>
<td>1.33**</td>
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<td>(0.10)</td>
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<td>(0.089)</td>
<td>(0.14)</td>
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<td>$100k-$125k</td>
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<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.095)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>Marital Status (ref is never married)</td>
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<tr>
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<td>(0.10)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>Divorced</td>
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<td>1.06</td>
<td>1.12</td>
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<td>1.17*</td>
<td>1.01</td>
<td>1.08</td>
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<td>(0.10)</td>
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<td>Married</td>
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<td>0.96</td>
<td>1.07</td>
<td>1.08</td>
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<td>(0.075)</td>
<td>(0.076)</td>
<td>(0.07)</td>
<td>(0.07)</td>
<td>(0.062)</td>
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</tr>
<tr>
<td>Living with Partner</td>
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<td>0.93</td>
<td>1.05</td>
<td>1.15</td>
<td>1.12</td>
<td>1.13</td>
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<td>(0.097)</td>
<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.082)</td>
<td>(0.12)</td>
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<td>Religion (ref is Protestant)</td>
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<td>1.03</td>
<td>0.97</td>
<td>0.99</td>
<td>0.98</td>
<td>0.95</td>
</tr>
<tr>
<td>-----------------------------</td>
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<tr>
<td>(0.080)</td>
<td>(0.074)</td>
<td>(0.072)</td>
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<td>(0.050)</td>
<td>(0.075)</td>
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<td>Catholic</td>
<td>0.97</td>
<td>0.94</td>
<td>0.95</td>
<td>0.96</td>
<td>0.95</td>
<td>0.95</td>
<td>0.90</td>
</tr>
<tr>
<td>(0.076)</td>
<td>(0.076)</td>
<td>(0.071)</td>
<td>(0.06)</td>
<td>(0.05)</td>
<td>(0.051)</td>
<td>(0.067)</td>
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<tr>
<td>Jewish</td>
<td>1.07</td>
<td>1.42**</td>
<td>1.32**</td>
<td>0.97</td>
<td>0.96</td>
<td>1.06</td>
<td>0.98</td>
</tr>
<tr>
<td>(0.20)</td>
<td>(0.18)</td>
<td>(0.13)</td>
<td>(0.11)</td>
<td>(0.08)</td>
<td>(0.063)</td>
<td>(0.13)</td>
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</tr>
<tr>
<td>Other Christian</td>
<td>1.07</td>
<td>1.04</td>
<td>1.24</td>
<td>0.82</td>
<td>0.79*</td>
<td>0.92</td>
<td>1.04</td>
</tr>
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<td>(0.15)</td>
<td>(0.15)</td>
<td>(0.13)</td>
<td>(0.09)</td>
<td>(0.11)</td>
<td>(0.15)</td>
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</tr>
<tr>
<td>Jewish</td>
<td>0.75</td>
<td>0.93</td>
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<td>(0.15)</td>
<td>(0.18)</td>
<td>(0.30)</td>
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<tr>
<td>Other Non-Christian</td>
<td>1.08</td>
<td>0.94</td>
<td>0.93</td>
<td>1.05</td>
<td>1.03</td>
<td>0.93</td>
<td>0.83**</td>
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<td>(0.069)</td>
<td>(0.060)</td>
<td>(0.06)</td>
<td>(0.05)</td>
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<tr>
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<td>0.97</td>
<td>0.99</td>
<td>1.00</td>
<td>0.99</td>
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<td>(0.05)</td>
<td>(0.048)</td>
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<tr>
<td>Region (ref is Northeast)</td>
<td>1.05</td>
<td>0.96</td>
<td>1.09</td>
<td>1.10</td>
<td>0.99</td>
<td>1.00</td>
<td>1.16</td>
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<td>(0.085)</td>
<td>(0.07)</td>
<td>(0.06)</td>
<td>(0.049)</td>
<td>(0.089)</td>
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<td>Mid-West</td>
<td>1.02</td>
<td>1.00</td>
<td>1.03</td>
<td>1.02</td>
<td>1.04</td>
<td>0.95</td>
<td>1.17*</td>
</tr>
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<td>(0.075)</td>
<td>(0.06)</td>
<td>(0.06)</td>
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<td>(0.083)</td>
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<td>0.99</td>
<td>1.08</td>
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<td>(0.078)</td>
<td>(0.075)</td>
<td>(0.088)</td>
<td>(0.06)</td>
<td>(0.06)</td>
<td>(0.055)</td>
<td>(0.083)</td>
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<tr>
<td>Religious Service Attendance (ref is more than once a week)</td>
<td>0.97</td>
<td>1.10</td>
<td>1.19</td>
<td>1.00</td>
<td>0.93</td>
<td>0.98</td>
<td>1.02</td>
</tr>
<tr>
<td>(0.089)</td>
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<td>(0.11)</td>
<td>(0.08)</td>
<td>(0.06)</td>
<td>(0.073)</td>
<td>(0.11)</td>
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<tr>
<td>Once a week</td>
<td>0.85</td>
<td>0.79*</td>
<td>0.91</td>
<td>0.78**</td>
<td>0.74***</td>
<td>0.93</td>
<td>0.97</td>
</tr>
<tr>
<td>(0.11)</td>
<td>(0.093)</td>
<td>(0.10)</td>
<td>(0.07)</td>
<td>(0.06)</td>
<td>(0.081)</td>
<td>(0.12)</td>
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<tr>
<td>Once or twice a month</td>
<td>0.94</td>
<td>0.96</td>
<td>1.15</td>
<td>0.96</td>
<td>0.90</td>
<td>1.03</td>
<td>1.18</td>
</tr>
<tr>
<td>(0.095)</td>
<td>(0.099)</td>
<td>(0.12)</td>
<td>(0.08)</td>
<td>(0.07)</td>
<td>(0.080)</td>
<td>(0.13)</td>
<td></td>
</tr>
<tr>
<td>A few times a year</td>
<td>1.00</td>
<td>0.96</td>
<td>1.22*</td>
<td>1.01</td>
<td>0.93</td>
<td>1.03</td>
<td>1.07</td>
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<td>(0.12)</td>
<td>(0.08)</td>
<td>(0.07)</td>
<td>(0.079)</td>
<td>(0.12)</td>
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</tr>
<tr>
<td>Once a year or less</td>
<td>0.96</td>
<td>1.02</td>
<td>1.14</td>
<td>1.14</td>
<td>1.09</td>
<td>1.06</td>
<td>1.15</td>
</tr>
<tr>
<td>(0.11)</td>
<td>(0.12)</td>
<td>(0.12)</td>
<td>(0.11)</td>
<td>(0.09)</td>
<td>(0.092)</td>
<td>(0.14)</td>
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<tr>
<td>Constant</td>
<td>25.2***</td>
<td>18.5***</td>
<td>18.8***</td>
<td>36.5***</td>
<td>45.1***</td>
<td>34.8***</td>
<td>16.1***</td>
</tr>
<tr>
<td>(4.83)</td>
<td>(3.38)</td>
<td>(3.78)</td>
<td>(5.62)</td>
<td>(6.25)</td>
<td>(5.24)</td>
<td>(3.48)</td>
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<td>1,582</td>
<td>1,559</td>
<td>1,554</td>
<td>1,547</td>
<td>1,541</td>
<td>1,548</td>
<td>1,548</td>
</tr>
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</table>

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

* Asked of Baptists, Protestants, Catholics and other Christians

b Asked of respondents who report having a religion
Americans who come into personal contact with abortion patients believe abortion is more common than Americans who do not come into personal contact. This difference is statistically significant only for Americans who have the most contact. The model predicts that Americans with no contact estimate that 23 percent of women will have an abortion in their lifetimes while Americans who know of four or more women in their acquaintance with abortion histories estimate that 32 percent of women will. These data support hypothesis 1a.

With regard to the characteristics of abortion patients, contact significantly affects Americans’ estimates of what proportion of women who have abortions are mothers, attend religious services regularly and are high school graduates when controlling for other relevant factors as can be seen in columns two, three and four of Table 4.2. Contact does not significantly affect estimates of abortion patients’ marital status, poverty status or age.

Americans who have heard of women in their acquaintance who have had abortions estimate that more abortion patients generally are mothers; this difference is statistically significant for Americans who know of two women’s abortions (p<.05) and those who know of four or more (p<.001). Americans who know of no women who have had an abortion are predicted to estimate that 28 percent of patients are mothers whereas those who know of four or more women are predicted to estimate that 37 percent of patients are mothers.

The patterns are similar with regard to estimating what proportion of patients attend religious services regularly. Americans who have contact with women with abortion histories estimate that more patients attend religious services regularly than Americans without contact. This difference, however, is only significant for those Americans who know of four or more women who have had abortions. The difference between the estimates of Americans in no contact and those in the most is 6 percentage points.

Americans who know four or more women who have had abortions also perceive more abortion patients are high school graduates than Americans who know of no woman who has had an abortion (p<.01). Americans who know four or more women who have had abortions are predicted to believe that half of patients are high school graduates whereas those who are not in contact at all are predicted to perceive that 42 percent do.

These data partially support hypothesis 1a which suggests that the “pictures inside Americans’ heads” of abortion patients differs by the level of personal contact with women who have had abortions.

Personal experience with abortion is associated with perceiving that more abortion patients are mothers, regularly attended religious services and were high school graduates. Personal experience is not determinative of Americans’ perceptions of abortion patients’ education, poverty status or age. This largely supports hypothesis 1b.

Turning to our last hypothesis with regard to the basis of Americans’ perceptions of abortion patients, education is determinative of prevalence of abortion and four of the six demographic estimates of abortion patients: religious service attendance, marital status, poverty status and age. It is most consistently determinative of marital rates; in this model, Americans of all three educational strata have significantly different estimates than Americans who have not graduated from high school. Holding all else at its mean, Americans who have not graduated from high school are predicted to believe that 19 percent of abortion patients are married when those who have at least a college degree believe that 27 percent are. These are very similar to the results from the bivariate analysis.

Many of the control variables are significant for some of the models, none, however, as consistently as personal contact, personal experience or education. Race and religion are relevant
for predicting three estimates; age, income, marital status and the frequency of religious service attendance for predicting two estimates. Gender and fundamentalist affiliation are important for one estimate and the urban status of the respondents’ home and the region are not relevant.

Perceptions of Why Women in America Have Abortions

Personal contact with abortion patients is the most consistently important factor associated with Americans’ understandings of why women have abortions. It is true for all of the reasons except that a woman may seek an abortion because she has concluded childbearing or because of concerns about the health of the baby. This can be seen in Table 4.3 which presents bivariate analyses of Americans’ perceptions of why women have abortions. The perceptions are provided for the population as a whole and by the three hypothesized bases of these perceptions: personal contact, personal experience and education.

By and large, the more contact Americans are in with women who have had abortions, the more common they believe any of the reasons are. The notable exception is for the reason that the health of the woman is in danger. This is an infrequent reason for abortion (Finer et al 2005) and those in the most contact have a more accurate sense, though still believe it to be fairly common. Americans’ perceptions of why women have abortions vary by the level of contact they have with abortion patients. This is particularly true for the reasons that the woman is having relationship problems and that having another child would interfere with her caring for her current children.

The bivariate analysis provides support for the hypothesis that personal contact is a basis for Americans’ perceptions of why women have abortions (hypothesis 2a) and modest evidence that personal experience is a basis (hypothesis 2b). Personal experience with abortion is relevant for only two of the nine reasons analyzed here. Education is relevant for only one reason and so provides limited support to the hypothesis that education is a basis of Americans’ perceptions (hypothesis 2c).

The multivariate analyses reveal that of the three bases tested here for Americans’ perceptions of why women have abortions, there is evidence only for personal contact, as can be seen in Table 4.4. Personal experience with abortion and education are not predictive of Americans’ perceptions of abortion patients motivations.

The significance of personal contact differs across the reasons. For relationship problems, knowing any number of women is determinative of one’s perception of how common this reason is for having an abortion. For the reasons that a woman might seek an abortion because she does not want to be a single mother or her health is in danger, knowing at least three women is relevant. In the other cases, the association between contact and perceptions of why women have abortions is not as clear-cut. In some of these remaining instances, knowing two or three women is relevant but not one or four or more as it is in the case of women seeking abortion because they cannot care for their current children. In others we see different levels of contact are determinative of one’s perceptions.

There are few background characteristics that are relevant for these perceptions and those the literature has found relevant in the past – personal experience and education – are not relevant here. Those that are determinative are not consistently so. Age is relevant for financial concerns and not wanting to be a mother now. Gender is determinative for four of the concerns. Race/ethnicity is relevant for four reasons but only for non-Hispanic blacks and Hispanics. Marital status is determinative only for divorced Americans’ perceptions of how commonly
<table>
<thead>
<tr>
<th></th>
<th>Interfere with Education or Work</th>
<th>Care Current Children</th>
<th>Financial Concerns</th>
<th>Not Want to be a Single Mother</th>
<th>Done with Childbearing</th>
<th>Not Want to be a Mother Now</th>
<th>Relationship Problems</th>
<th>Health of Woman in Danger</th>
<th>Baby not Born Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sample</strong></td>
<td>4.53</td>
<td>3.92</td>
<td>5.01</td>
<td>4.87</td>
<td>3.99</td>
<td>5.26</td>
<td>4.43</td>
<td>4.25</td>
<td>4.20</td>
</tr>
<tr>
<td><strong>Number of Abortion Patients R Knows</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>4.38</td>
<td>3.69</td>
<td>4.88</td>
<td>4.70</td>
<td>3.87</td>
<td>5.11</td>
<td>4.16</td>
<td>4.31</td>
<td>4.15</td>
</tr>
<tr>
<td>1 or 2</td>
<td>4.65*</td>
<td>4.07**</td>
<td>5.03</td>
<td>4.96*</td>
<td>4.05</td>
<td>5.36*</td>
<td>4.59***</td>
<td>4.29</td>
<td>4.29</td>
</tr>
<tr>
<td>3+</td>
<td>4.68</td>
<td>4.23**</td>
<td>5.35**</td>
<td>5.11**</td>
<td>4.18</td>
<td>5.47*</td>
<td>4.79***</td>
<td>3.94*</td>
<td>4.12</td>
</tr>
<tr>
<td><strong>R/Partner had an Abortion</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4.52</td>
<td>4.43***</td>
<td>5.14</td>
<td>4.83</td>
<td>4.30</td>
<td>5.30</td>
<td>4.61**</td>
<td>4.40</td>
<td>4.18</td>
</tr>
<tr>
<td>No</td>
<td>4.53</td>
<td>3.86</td>
<td>4.99</td>
<td>4.86</td>
<td>3.96</td>
<td>5.27</td>
<td>4.41</td>
<td>4.24</td>
<td>4.21</td>
</tr>
<tr>
<td><strong>Educational Attainment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School&lt;sup&gt;3&lt;/sup&gt;</td>
<td>4.74</td>
<td>3.91</td>
<td>4.95</td>
<td>4.68</td>
<td>4.06</td>
<td>5.20</td>
<td>4.35</td>
<td>4.29***</td>
<td>4.03</td>
</tr>
<tr>
<td>High School</td>
<td>4.45</td>
<td>4.02</td>
<td>5.03</td>
<td>4.80</td>
<td>4.24</td>
<td>5.26</td>
<td>4.46</td>
<td>4.42</td>
<td>4.30</td>
</tr>
<tr>
<td>Some College</td>
<td>4.54</td>
<td>3.86</td>
<td>5.00</td>
<td>4.98</td>
<td>3.88</td>
<td>5.28</td>
<td>4.54</td>
<td>4.22</td>
<td>4.10</td>
</tr>
<tr>
<td>Bachelor's Degree or More</td>
<td>4.52</td>
<td>3.90</td>
<td>5.01</td>
<td>4.90</td>
<td>3.81</td>
<td>5.27</td>
<td>4.31</td>
<td>4.10</td>
<td>4.27</td>
</tr>
</tbody>
</table>

<sup>1</sup> Significance indicates whether the estimate differs from the estimate by Americans who do not report knowing any woman who has had an abortion.

<sup>2</sup> Significance indicates whether the estimates for Americans who personal experience with abortion differs from those who do not

<sup>3</sup> Significance was determined using analysis of variance

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<sup>*** p<0.001, ** p<0.01, * p<0.05</sup>
## Table 4.4: Negative Binomial Regression Predicting Americans' Beliefs About Why Women Have Abortions, Incident Rate Ratios

<table>
<thead>
<tr>
<th>Knowledge of Others' Abortions</th>
<th>Interfere with Education or Work</th>
<th>Care Current Children</th>
<th>Financial Concerns</th>
<th>Not Want to be a Single Mother</th>
<th>Done with Childbearing</th>
<th>Not Want to be a Mother Now</th>
<th>Relationship Problems</th>
<th>Health of Woman in Danger</th>
<th>Baby not Born Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knows of 1 Woman's Abortion</td>
<td>1.05(0.030)</td>
<td>1.05(0.038)</td>
<td>1.02(0.027)</td>
<td>1.05(0.028)</td>
<td>1.04(0.038)</td>
<td>1.05*(0.025)</td>
<td>1.09**(0.033)</td>
<td>1.02(0.035)</td>
<td>1.04(0.036)</td>
</tr>
<tr>
<td>Knows of 2 Women's Abortions</td>
<td>1.09**(0.034)</td>
<td>1.10**(0.040)</td>
<td>1.02(0.028)</td>
<td>1.04(0.033)</td>
<td>1.08(0.040)</td>
<td>1.05(0.028)</td>
<td>1.11**(0.035)</td>
<td>0.96(0.038)</td>
<td>0.99(0.038)</td>
</tr>
<tr>
<td>Knows of 3 Women's Abortions</td>
<td>1.09(0.052)</td>
<td>1.12*(0.056)</td>
<td>1.11**(0.040)</td>
<td>1.11*(0.046)</td>
<td>1.00(0.064)</td>
<td>1.09*(0.038)</td>
<td>1.14**(0.050)</td>
<td>0.87*(0.049)</td>
<td>0.99(0.048)</td>
</tr>
<tr>
<td>Knows of 4+ Women's Abortions</td>
<td>1.12*(0.056)</td>
<td>1.07(0.063)</td>
<td>1.06(0.044)</td>
<td>1.12**(0.047)</td>
<td>1.10(0.062)</td>
<td>1.07(0.041)</td>
<td>1.12*(0.061)</td>
<td>0.89*(0.052)</td>
<td>0.98(0.059)</td>
</tr>
<tr>
<td>Respondent/Partner had an Abortion</td>
<td>0.98(0.039)</td>
<td>1.05(0.049)</td>
<td>1.01(0.034)</td>
<td>0.98(0.034)</td>
<td>1.04(0.050)</td>
<td>0.99(0.029)</td>
<td>1.00(0.041)</td>
<td>1.02(0.044)</td>
<td>0.96(0.043)</td>
</tr>
<tr>
<td>Education (ref is less than high school)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS</td>
<td>0.94(0.043)</td>
<td>1.01(0.058)</td>
<td>1.02(0.043)</td>
<td>1.05(0.052)</td>
<td>1.04(0.060)</td>
<td>0.99(0.036)</td>
<td>1.02(0.053)</td>
<td>0.99(0.054)</td>
<td>1.01(0.060)</td>
</tr>
<tr>
<td>Some College</td>
<td>0.95(0.044)</td>
<td>0.97(0.057)</td>
<td>1.01(0.043)</td>
<td>1.08(0.054)</td>
<td>0.97(0.058)</td>
<td>0.99(0.037)</td>
<td>1.03(0.054)</td>
<td>0.97(0.056)</td>
<td>0.98(0.061)</td>
</tr>
<tr>
<td>Bachelor's degree or higher</td>
<td>0.95(0.046)</td>
<td>0.98(0.060)</td>
<td>1.02(0.045)</td>
<td>1.04(0.054)</td>
<td>0.94(0.058)</td>
<td>0.98(0.038)</td>
<td>0.97(0.053)</td>
<td>0.94(0.056)</td>
<td>1.02(0.064)</td>
</tr>
<tr>
<td>Age (ref 18-24)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td>0.95(0.048)</td>
<td>1.00(0.065)</td>
<td>0.88**(0.038)</td>
<td>0.95(0.048)</td>
<td>1.03(0.072)</td>
<td>0.89**(0.036)</td>
<td>1.02(0.059)</td>
<td>1.04(0.066)</td>
<td>1.00(0.066)</td>
</tr>
<tr>
<td>35-44</td>
<td>0.92(0.045)</td>
<td>0.99(0.064)</td>
<td>0.91**(0.038)</td>
<td>0.93(0.048)</td>
<td>1.03(0.070)</td>
<td>0.92**(0.036)</td>
<td>1.01(0.055)</td>
<td>1.01(0.063)</td>
<td>1.03(0.066)</td>
</tr>
<tr>
<td>45-54</td>
<td>0.96(0.048)</td>
<td>1.02(0.065)</td>
<td>0.91**(0.038)</td>
<td>0.95(0.049)</td>
<td>1.01(0.070)</td>
<td>0.93(0.037)</td>
<td>1.01(0.056)</td>
<td>0.98(0.064)</td>
<td>1.02(0.067)</td>
</tr>
<tr>
<td>55+</td>
<td>0.91(0.043)</td>
<td>1.02(0.061)</td>
<td>0.90**(0.035)</td>
<td>0.93(0.045)</td>
<td>1.10(0.070)</td>
<td>0.90**(0.033)</td>
<td>0.91(0.052)</td>
<td>1.04(0.061)</td>
<td>1.02(0.063)</td>
</tr>
<tr>
<td>Male</td>
<td>1.01(0.023)</td>
<td>0.92**(0.027)</td>
<td>0.96**(0.020)</td>
<td>0.98(0.021)</td>
<td>0.96(0.028)</td>
<td>0.99(0.018)</td>
<td>0.97(0.023)</td>
<td>0.94*(0.026)</td>
<td>0.94*(0.026)</td>
</tr>
<tr>
<td>Race (ref is White, Non-Hispanic)</td>
<td>1.02</td>
<td>1.15**</td>
<td>1.01</td>
<td>0.90*</td>
<td>1.09</td>
<td>0.96</td>
<td>1.00</td>
<td>1.14**</td>
<td>1.00</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>(0.044)</td>
<td>(0.056)</td>
<td>(0.037)</td>
<td>(0.041)</td>
<td>(0.055)</td>
<td>(0.033)</td>
<td>(0.049)</td>
<td>(0.056)</td>
<td>(0.053)</td>
</tr>
<tr>
<td>Other, Non-Hispanic</td>
<td>1.08</td>
<td>1.07</td>
<td>0.94</td>
<td>0.95</td>
<td>1.06</td>
<td>0.97</td>
<td>1.06</td>
<td>0.93</td>
<td>1.01</td>
</tr>
<tr>
<td>Hispanic</td>
<td>(0.071)</td>
<td>(0.087)</td>
<td>(0.055)</td>
<td>(0.061)</td>
<td>(0.097)</td>
<td>(0.049)</td>
<td>(0.062)</td>
<td>(0.078)</td>
<td>(0.081)</td>
</tr>
<tr>
<td>2+ races, Non-Hispanic</td>
<td>1.01</td>
<td>1.07</td>
<td>1.08</td>
<td>1.05</td>
<td>1.09</td>
<td>1.00</td>
<td>1.07</td>
<td>1.07</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>(0.078)</td>
<td>(0.095)</td>
<td>(0.064)</td>
<td>(0.074)</td>
<td>(0.095)</td>
<td>(0.066)</td>
<td>(0.065)</td>
<td>(0.068)</td>
<td>(0.065)</td>
</tr>
<tr>
<td>Income (ref is less than $15k)</td>
<td>1.02</td>
<td>0.99</td>
<td>1.05</td>
<td>1.04</td>
<td>1.05</td>
<td>1.05</td>
<td>1.05</td>
<td>0.96</td>
<td>1.05</td>
</tr>
<tr>
<td>$15k-$30k</td>
<td>(0.056)</td>
<td>(0.059)</td>
<td>(0.049)</td>
<td>(0.052)</td>
<td>(0.066)</td>
<td>(0.044)</td>
<td>(0.057)</td>
<td>(0.051)</td>
<td>(0.061)</td>
</tr>
<tr>
<td>$30k-$50k</td>
<td>1.07</td>
<td>0.98</td>
<td>1.06</td>
<td>1.00</td>
<td>1.02</td>
<td>1.05</td>
<td>1.05</td>
<td>0.92</td>
<td>0.96</td>
</tr>
<tr>
<td>$50k-$75k</td>
<td>(0.054)</td>
<td>(0.054)</td>
<td>(0.046)</td>
<td>(0.047)</td>
<td>(0.060)</td>
<td>(0.043)</td>
<td>(0.053)</td>
<td>(0.049)</td>
<td>(0.053)</td>
</tr>
<tr>
<td>$75k-$100k</td>
<td>1.02</td>
<td>0.98</td>
<td>1.08</td>
<td>1.02</td>
<td>1.07</td>
<td>1.07</td>
<td>1.05</td>
<td>0.96</td>
<td>0.97</td>
</tr>
<tr>
<td>$100k-$125k</td>
<td>(0.053)</td>
<td>(0.055)</td>
<td>(0.047)</td>
<td>(0.048)</td>
<td>(0.065)</td>
<td>(0.042)</td>
<td>(0.054)</td>
<td>(0.054)</td>
<td>(0.056)</td>
</tr>
<tr>
<td>$125k+</td>
<td>1.08</td>
<td>1.02</td>
<td>1.09</td>
<td>1.02</td>
<td>1.08</td>
<td>1.07</td>
<td>1.06</td>
<td>0.91</td>
<td>0.94</td>
</tr>
<tr>
<td>Marital Status (ref is never married)</td>
<td>1.07</td>
<td>0.99</td>
<td>1.06</td>
<td>1.10</td>
<td>0.99</td>
<td>0.98</td>
<td>1.08</td>
<td>0.88</td>
<td>1.01</td>
</tr>
<tr>
<td>Widowed</td>
<td>(0.072)</td>
<td>(0.084)</td>
<td>(0.057)</td>
<td>(0.067)</td>
<td>(0.079)</td>
<td>(0.058)</td>
<td>(0.068)</td>
<td>(0.073)</td>
<td>(0.080)</td>
</tr>
<tr>
<td>Divorced</td>
<td>1.04</td>
<td>1.12*</td>
<td>1.03</td>
<td>1.03</td>
<td>1.02</td>
<td>1.00</td>
<td>1.05</td>
<td>1.04</td>
<td>1.04</td>
</tr>
<tr>
<td>Married</td>
<td>(0.053)</td>
<td>(0.065)</td>
<td>(0.044)</td>
<td>(0.048)</td>
<td>(0.061)</td>
<td>(0.040)</td>
<td>(0.056)</td>
<td>(0.057)</td>
<td>(0.057)</td>
</tr>
<tr>
<td>Living with Partner</td>
<td>1.01</td>
<td>1.09</td>
<td>1.07</td>
<td>1.04</td>
<td>1.02</td>
<td>1.06</td>
<td>1.06</td>
<td>1.10</td>
<td>1.04</td>
</tr>
<tr>
<td>Religion (ref is Protestant)</td>
<td>(0.058)</td>
<td>(0.064)</td>
<td>(0.053)</td>
<td>(0.055)</td>
<td>(0.065)</td>
<td>(0.048)</td>
<td>(0.063)</td>
<td>(0.058)</td>
<td>(0.064)</td>
</tr>
<tr>
<td>Catholic</td>
<td>1.07*</td>
<td>1.03</td>
<td>1.04</td>
<td>1.03</td>
<td>1.02</td>
<td>1.03</td>
<td>1.07*</td>
<td>1.04</td>
<td>1.02</td>
</tr>
<tr>
<td>Jewish</td>
<td>(0.035)</td>
<td>(0.041)</td>
<td>(0.030)</td>
<td>(0.033)</td>
<td>(0.041)</td>
<td>(0.028)</td>
<td>(0.034)</td>
<td>(0.040)</td>
<td>(0.042)</td>
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<td>0.92</td>
<td>0.97</td>
<td>0.98</td>
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<td>1.00</td>
<td>0.98</td>
<td>0.93</td>
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<td>(0.98)</td>
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<td>(0.97)</td>
<td>(0.91)</td>
<td>(0.97)</td>
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<td>--------</td>
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<td>((0.083))</td>
<td>((0.076))</td>
<td>((0.070))</td>
<td>((0.077))</td>
<td>((0.066))</td>
<td>((0.069))</td>
<td>((0.091))</td>
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<td>((0.069))</td>
<td>((0.062))</td>
<td>((0.099))</td>
<td>((0.059))</td>
<td>((0.096))</td>
<td>((0.088))</td>
<td>((0.083))</td>
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<td>((0.13))</td>
<td>((0.085))</td>
<td>((0.073))</td>
<td>((0.13))</td>
<td>((0.087))</td>
<td>((0.10))</td>
<td>((0.17))</td>
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<td>((0.037))</td>
<td>((0.028))</td>
<td>((0.030))</td>
<td>((0.037))</td>
<td>((0.025))</td>
<td>((0.033))</td>
<td>((0.035))</td>
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<td>Urban</td>
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<td>((0.037))</td>
<td>((0.028))</td>
<td>((0.030))</td>
<td>((0.036))</td>
<td>((0.024))</td>
<td>((0.031))</td>
<td>((0.035))</td>
<td>((0.034))</td>
</tr>
<tr>
<td>Region (ref is Northeast)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mid-West</td>
<td>((0.040))</td>
<td>((0.043))</td>
<td>((0.034))</td>
<td>((0.034))</td>
<td>((0.045))</td>
<td>((0.031))</td>
<td>((0.036))</td>
<td>((0.040))</td>
<td>((0.041))</td>
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<tr>
<td>South</td>
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<td>((0.041))</td>
<td>((0.032))</td>
<td>((0.033))</td>
<td>((0.043))</td>
<td>((0.030))</td>
<td>((0.034))</td>
<td>((0.037))</td>
<td>((0.038))</td>
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<td>West</td>
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<td>((0.035))</td>
<td>((0.036))</td>
<td>((0.048))</td>
<td>((0.034))</td>
<td>((0.038))</td>
<td>((0.044))</td>
<td>((0.044))</td>
</tr>
<tr>
<td>Religious Service Attendance (ref is more than once a week)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once a week</td>
<td>(0.91^*)</td>
<td>(1.02)</td>
<td>(0.96)</td>
<td>(0.97)</td>
<td>(0.91)</td>
<td>(0.95)</td>
<td>(0.93)</td>
<td>(1.02)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>(0.83^{**})</td>
<td>(0.98)</td>
<td>(0.90^*)</td>
<td>(0.92)</td>
<td>(0.89)</td>
<td>(0.85^{**})</td>
<td>(0.90)</td>
<td>(1.02)</td>
<td>(0.92)</td>
</tr>
<tr>
<td>A few times a year</td>
<td>(0.92)</td>
<td>(0.97)</td>
<td>(0.94)</td>
<td>(0.95)</td>
<td>(0.93)</td>
<td>(0.93^*)</td>
<td>(0.91^*)</td>
<td>(1.07)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>Once a year or less</td>
<td>(0.87^{**})</td>
<td>(1.00)</td>
<td>(0.93)</td>
<td>(0.94)</td>
<td>(0.91)</td>
<td>(0.89^{**})</td>
<td>(0.91)</td>
<td>(1.12)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>Never</td>
<td>(0.94)</td>
<td>(1.04)</td>
<td>(0.98)</td>
<td>(0.97)</td>
<td>(0.93)</td>
<td>(0.93)</td>
<td>(0.95)</td>
<td>(1.10)</td>
<td>(1.03)</td>
</tr>
<tr>
<td>Constant</td>
<td>(4.61^{***})</td>
<td>(3.63^{***})</td>
<td>(4.95^{***})</td>
<td>(4.61^{***})</td>
<td>(4.10^{***})</td>
<td>(5.56^{***})</td>
<td>(3.99^{***})</td>
<td>(4.66^{***})</td>
<td>(4.47^{***})</td>
</tr>
<tr>
<td>Observations</td>
<td>(1,569)</td>
<td>(1,570)</td>
<td>(1,568)</td>
<td>(1,566)</td>
<td>(1,560)</td>
<td>(1,564)</td>
<td>(1,564)</td>
<td>(1,567)</td>
<td>(1,568)</td>
</tr>
</tbody>
</table>

*** p\(<0.001\), ** p\(<0.01\), * p\(<0.05\)

\(^{a}\) Asked of Baptists, Protestants, Catholics and other Christians

\(^{b}\) Asked of respondents who report having a religion
women have abortions because they cannot care for their current children (p<.05). Religion is important for only a few sub-groups in some cases and evangelical status is relevant only for the health reasons. Geography is similarly relevant only for some regions for some reasons and the frequency of religious service attendance is determinative for the reason that having a child would interfere with education or work and not wanting to be a mother now.

In sum, Americans' understandings of women who have abortions is inaccurate. They underestimate how often women have abortions and have a largely false understanding of who has them and why. What influences these pictures in their heads? Drawing from previous literature, I hypothesized three possible bases: personal contact, personal experience and education. With regard to how many women will have abortions and their demographic characteristics, there is partial support for all three of these bases. For Americans' perceptions of why women have abortions, there is partial support for personal contact but not for personal experience or education.

DISCUSSION AND CONCLUSION

Americans’ opinions on abortion are contingent on who is having the abortion and why. As such, investigating Americans’ perceptions of abortion patients can further our understanding of public opinion on abortion. Americans underestimate the frequency of abortion, though still consider it to be rather common. They believe that the typical abortion patient is unmarried and childless and that poor women and teenagers are over-represented among abortion patients as are people who have not graduated from high school. They believe that, on average, a quarter of abortion patients attend church services regularly. Americans are inaccurate in their perception of patients’ marital status, motherhood status, age and high school graduation rate. They are accurate, more or less, in their estimates of patient’s poverty status and religiosity.

On what basis are these perceptions formed? As discussed above, the existing literature points to four typical sources for these perceptions: cognitive ability or education, the media, self-projection, and local contexts. The media rarely depict women who seek or have had an abortion and as such, I examined the other three bases.

Given the paucity of outside influences, Americans infer from the experiences of those in their acquaintance and their own. Abortion, however, is a secret. Americans may not know if their friend, family member, co-worker or neighbor has had an abortion because it is often concealed (Cowan 2012). Here, I find that contact or the experienced local environment is the most consistent basis of perceptions of abortion patients, particularly if one knows four or more women who have had abortions. Personal contact predicts Americans’ perceptions of abortion prevalence, the demographic characteristics of abortion patients and their motivations to have an abortion. Personal experience and education predict Americans’ perceptions of how common abortion is and the demographic characteristics of women who have abortions. They are not relevant, however, for Americans’ perceptions of why women have abortions.

The findings presented here are not experimental; they cannot tell us what the effect of hearing abortion secrets is. They do show that Americans who have heard of others’ abortions do have different “pictures in their heads” of abortion patients. Based on existing theories and empirical evidence of contact between diverse others, we anticipate that hearing abortion secrets would alter people’s perception of abortion patients (Allport 1954; Pettigrew and Tropp 2008).

Hearing these secrets, particularly if one hears a number of them, is associated with a different understanding of how common abortion is, who has them and why. Hearing of a few
Abortions often are not correlated with a different perception of abortion patients while hearing of many is. This suggests there may be a threshold of contact whereby Americans extrapolate from the individuals one knows to the group.

Of particular relevance, Americans who have heard a number of abortion secrets are more likely to believe that women who have abortions are mothers and attend religious services regularly. The anti-abortion movement has depicted abortion as a rejection of motherhood and an un-Christian act (Luker 1984; Ferree et al 2002). In fact, most abortion patients are mothers and many attend religious services regularly (Jones et al 2010). Americans who have heard abortion secrets are less likely to adhere to the image of abortion patients that the anti-abortion social movement has promoted.

Americans who have heard of others’ abortions also have a different understanding of why women have abortions. Americans who have heard of others’ abortions are less likely to believe that women commonly have abortions because having a or another child would interfere with their lives or their capacities to care for their current children, because of financial or relationship concerns or because they do not want to be a mother now. As such, they believe the most politically palatable reasons (health concerns) are less common and the less palatable reasons are more common (interfering with life).

This is the first foray into documenting Americans’ understandings of abortion patients. I find that personal contact is often determinative of these understandings, while many of the traditionally important personal characteristics, such as education and personal experience, are not. Additional determinants of these perceptions should be examined. As an example, perhaps Americans infer patient characteristics from social movement arguments. Or perhaps they infer abortion patient characteristics from assumptions about contraceptive use. These data cannot help answer these questions but perhaps other data can.

Examining these perceptions, and their roots, may help solve some puzzles about abortion public opinion. This inquiry raises a few questions for that endeavor: first, does learning about others’ abortions secrets causally alter American’s perception of abortion patients? Does this perception causally affect attitudes as the General Social Survey data suggest it would? And finally, what are the implications of the patterns of secret disclosure on abortion attitudes? Previous work has shown how pro-choice Americans are more likely to hear about the abortions in their social network than anti-abortion Americans from whom abortion secrets are kept (Cowan 2012). Having heard many abortion secrets, however, is associated with a depiction of abortion patients that is less favorable with regard to public opinion, namely that women are not having abortions because their or the fetus’ health are in danger. Yet, Americans who have heard many abortion secrets have a picture in their head of an abortion patient who differs importantly from the picture the anti-abortion social movement has depicted.

The “pictures inside Americans’ heads” matter. They matter for forming expectations of others and in determining their welfare which is part of the role of citizen in a democracy. These pictures are often wrong and are likely more inaccurate for populations defined by concealable characteristics such as those who had abortions, those with a criminal record, a mental illness or who identify as a sexual minority. As scholars, we should inquire about those pictures and understand what forms them because they affect public opinion and policy.
CHAPTER 5: CONCLUSION

In everyday life, people influence each other by sharing their attitudes and experiences and talking about others’. But sometimes people keep secrets, their own and others’. Often, events or characteristics will be shared quite differently depending on how stigmatizing they are. This results in markedly different rates of hearing secrets. Then each community has an objective prevalence of a concealable characteristic but people in the community will hear of only some others with that characteristic. They will perceive the prevalence to be other than what it is. There are a variety of mechanisms for misperceiving our communities, some are cognitive and some are cultural. Secret-keeping is a particularly interesting mechanism because it operates interpersonally and is intentional.

When individuals keep secrets, processes of social influence – on public opinion, on tolerance and on behavior – are thwarted. They are done so with intent. Further, we draw our understandings of the world in large part on the experiences of those around us; we generalize from the local to the national and perhaps the global. This dissertation shows that our knowledge is distorted and discusses one way through which it is distorted, the keeping of secrets.

Abortion in the United States is the test case to outline this argument. In chapter three I discuss how incredibly common abortion is but in chapter four, I show how personal experience with abortion is not often spoken of, by the women who had them or others. When it is spoken of, is it with people who support legalized abortion and they are kept secret from those who oppose legalized abortion. This has implications for social influence and public opinion, as described in chapter three. These patterns of withholding and disclosing secrets also have consequences in perceiving the abortion patient population as described in the fourth chapter.

This work is the beginning of a research agenda on secrets. I take the opportunity of this conclusion to outline the future work that will build a sociology of secrets.

Political attitude secrets

In 2011, Shelley Moore Capito, Republican Representative from West Virginia and co-founder of the House Civility Caucus advised Americans to be cautious when political disagreements occur around the Thanksgiving table: “you’re better off just to have somebody come in and start a new topic. I mean, politics is dangerous… I think it can really result in some really hurt feelings” (Inskeep, 2011). Representative Capito’s counsel may make Thanksgiving more enjoyable, but by systematically avoiding political disagreement, Americans run the risk of further isolating themselves in homogeneous political discussion networks in which only liberal or conservative views are voiced, while dissent remains silent, and often times goes unacknowledged. At the macro-level, this mechanism of selective disclosure leads to the perception of a greatly polarized public opinion, and has important consequences for the democratic process.

Interpersonal influence has a major role in the formation and modification of political attitudes (Katz and Lazarsfeld 1955; Huckfeldt and Sprague 1995; Huckfeldt, Johnson, and Sprague 2004; Huckfeldt, Ikeda, and Pappi 2005; Huckfeldt 2007; Mutz 2002a; 2002b; 2006; Sunstein 2009; Baldassarri 2009). When individuals are exposed to viewpoints similar to their own, they become more extreme in their opinions whereas participating in cross-cutting conversations – or conversations between people who disagree with each other – is a bulwark against these extreme opinions (Sunstein 2009; Mutz 2006). Increasingly, however, scholars are concerned that individuals are not being exposed to those who hold viewpoints other than their
own because social networks are segregated (Skocpol and Fiorina 1999; DiPrete et al 2011 among many others).

If Americans keep their attitudes secret specifically from those with whom they disagree then cross-cutting conversations do not occur. Americans would not hear opposing viewpoints and not know that their sister, their friend, or their co-worker disagrees with them; further, in the face of this silence, they would assume political agreement (Goel et al 2010; Laumann 1969). By keeping opposing viewpoints secret, social networks consisting of people with diverse attitudes will appear homogeneous to network members.

Finally, selective disclosure does not simply lead to a misperception of the political orientation of one’s social network. Indeed, such misperception can have real consequences on the overall distribution of opinions. To the extent that voicing one’s opinion affects other people’s views, it does make a difference whether all views in a social network are voiced, or only some (Noelle-Neumann 1984). It is plausible to expect, in fact, that the perception of a homogeneous network might lead individuals to strengthen their views, through a mechanism of mutual reinforcement.

The extensive literature on the relationship between individuals’ political orientation and their social networks largely assumes that individuals accurately perceive the attitudes of those with whom they interact. If people keep their political attitudes secret, however, then individuals will necessarily misperceive the attitudes of those with whom they interact. This misperception will complicate the mechanisms traditionally outlined that link individuals’ attitudes and their social networks. While Americans keep abortions secret to avoid stigmatizing themselves or others, they keep political attitudes secret to avoid conflict. This introduces another motivation for secret-keeping and therefore broadens the conceptual framework.

Cancer Secrets

Taking secrets into a different realm, I will explore the disclosure of cancer diagnoses, comparing breast, cervical, lung and prostate cancer. Failure to disclose can affect patient outcomes through information gathering, treatment choice and the garnering of social support which in turn positively affects outcomes (DiMatteo 2004; Manning-Walsh 2006; Protière et al 2012). How news of the diagnosis spreads beyond the patient will affect structural components of the healthcare system. Individuals who have contact with patients who have a given disease are more likely to donate and advocate on behalf of that disease (Small and Simonsohn 2008; Loewenstein and Small 2007).

Whether contact occurs depends on the disease’s prevalence and survival rates. It also depends on disclosure. The work here on abortion suggests that stigma would stifle the diffusion of news of certain diagnoses. As a result, stigmatized diseases will suffer with regard to fundraising and advocacy because fewer people will know they have a personal connection to the disease. This proposed research will provide insights to other cases of stigmatized health conditions such as Type II diabetes and HIV.

Comparing across the cancers is analytically fruitful because they differ in terms of stigma, gender and identity. In addition, I can gain leverage from variation within the patient population to examine disclosure patterns. I can then investigate the aggregate effects of disclosure.

A blame stigma attends lung cancer because of its association with smoking. Fifteen percent of lung cancer patients, however, did not smoke; nonetheless, they and their confidants must manage the patient being painted with the same stigma. Cervical cancer’s stigma is through
its association with a sexually transmitted infection (Dyer 2010; Perrin et al 2006). Prostate cancer’s stigma arises because the cancer itself affects a part of the male reproductive system and the treatment side effects commonly include impotence (Fergus et al 2002).

Breast cancer is not stigmatized per se and hence serves as a stigma-control to lung and prostate cancer. Patients are not blamed for contracting breast cancer; breast cancer has largely overcome the stigma related to involving a sexualized body part (Else-Quest et al 2008; Sulik 2010). I will exploit this variation in stigma across the cancers to further explore the effects of stigma on disclosure and contact.

The cancers also vary with regard to gender and can illuminate how gender affects the experience of stigma and the widespread disclosure of secrets. All prostate cancer patients are men; all cervical cancer patients are women. Both men and women contract lung cancer. The few men who do contract breast cancer will further illuminate how gender affects the experience of stigma and its management through selective disclosure and secret-keeping.

Lastly, these cancers differ with regard to identity. Cancer can become a source of identity for the patient. This is particularly true for women who survived breast cancer because there is a social infrastructure to create, support and honor the survivor identity. When people identify with a once-stigmatized characteristic, and that identity has become culturally acceptable, disclosure patterns will be affected.

By examining communication regarding cancer diagnoses, I will extend secrets into a new health realm. This will allow me to examine the roles of gender and identity on these processes of secret-keeping and disclosing. It will further allow me to explore structural outcomes generated from different rates of hearing secrets.

Comparing Across Secrets

I hope, with support and data from the General Social Survey to gather information about Americans’ personal contact with Americans who have given secrets as well as disclosure information of those secrets. The secrets I plan to examine concern sexual orientation and unemployment.

These data will permit me to make comparisons across secrets from different domains and obtain a sense of the relative access Americans have to these secrets. They will also be able to add to a literature with regard to each substantive domain. As an example, existing literature has shown that knowing someone who is a sexual minority is associated with positive attitudes toward sexual minorities (Lewis et al 2011; Herek and Glunt 1993; Altemeyer 2002; Anderssen 2002). Little to no work, however, has examined specifically who does know someone who is a sexual minority, nor has any work examined sexual minorities actively keeping their sexual orientation a secret so as to manipulate who does or does not know their orientation.

With regard to unemployment, there is an extensive literature on from whom individuals receive assistance finding jobs. This literature examines social network composition which determines individual’s access to resources and others’ willingness to provide assistance (Granovetter 1973; Smith 2005 and Fernandez & Fernandez-Mateo 2006 for more recent work). In order for that access to be relevant and the assistance obtained, individuals must have their unemployment secret known. But being unemployed may be shameful or embarrassing and hence individuals may keep it secret.

Capturing data on these secrets will also aid in estimating hard-to-count populations if used along with the GSS network questions. Given under-reporting of stigmatized characteristics or behaviors is common in surveys, new techniques have been developed to measure the size of these populations by asking respondents about their knowledge of others’ behavior. The network
scale-up method (for a review see Bernard et al 2010; for a sample of applications see Killworth et al 1998, Kadushin et al 2006, Salganik et al 2010, Snidero et al 2007) uses data from representative surveys on respondents’ network size and knowledge of hard-to-count populations. Through these data, they infer the size of that population as a whole.

The network scale-up method assumes that individuals know whether the people with whom they interact are members of these hard-to-count populations. The limitation is, of course, that people do not know the full truth of others’ lives because people keep secrets; this results in what the scale-up literature calls “transmission effects.” Estimating transmission rates has rarely been done on a nationally representative scale, with the exception of this dissertation, but gains have been made in smaller studies (Shelley et al 1995, 2006; Paniotto et al 2010; Salganik et al 2011).

**Qualitative Data**

The empirical data of this dissertation is quantitative as will be much of the data of the future projects mentioned here. But secrets are intimate and some of the nuance of them and how they are approached and handled is lost in quantitative data. I intend to supplement the quantitative data and the arguments they make with interviews with those who have, tell, keep and learn secrets. I will do so for each of the substantive realms I have outlined here.

In addition, there are community members who by their profession hear or learn many secrets such as clergy or physicians. They have a particularly interesting role in that in small communities they may know many people involved in the secret but be disclosed to by only one. The final group of interviews will be with people who have been trained to read concealed and subtle emotional cues from others’ faces. With this training, they see what others are specifically avoiding telling them; they have access to secrets.

What is particularly interesting about clergy and those trained in expression recognition is that those with whom they interact may not know the extent of their knowledge. If a husband tells his pastor that his wife just left him, the wife may not realize the pastor knows when she speaks with him after services on Sunday. We have all been in the pastor’s position but clergy are in that position frequently. Those trained in facial recognition are frequently privy to others’ concealed emotions. These experts then know more than others let on – and choosing to know more by getting the training – will further illuminate the peculiar ways that secrets shape our everyday.

**Toward a Sociology of Secrets**

We largely react to a world we know or think we know. As W.I. Thomas and D.S. Thomas stated, “if men define situations as real, they are real in their consequences” (Thomas and Thomas 1928). This dissertation shows that what we know is shaped by what we are told, but we are not told everything. Secrets are pervasive. Each one of us has secrets; each one of us is told secrets and each one of us has secrets kept from us. Secrets – when told and when kept – affect our understanding of those around us and in turn our understanding of the members of the larger community, such as the nation, whom we do not know. Little sociological research, however, has examined secrets. Beginning with this dissertation and extending through the projects mentioned here, I intend to build a sociology of secrets where we understand not just about secrets but their consequences for our interactions with others, our actions, our opinions and our worldviews.
REFERENCES


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APPENDIX A: AMERICAN MISCARRIAGE AND ABORTION COMMUNICATION SURVEY (AMACS)

The AMACS consists of six modules. Questions from the first five modules are analyzed in this study; those modules are:
- Others’ Miscarriage
- Others’ Abortion
- Own Miscarriage
- Own Abortion
- Demographics & Attitudes

The modules on miscarriage and abortion are constructed to allow for comparisons across all four modules. The questions for the Others' Abortion module and the Others' Miscarriage module are exactly the same except that the questions reference abortions, not miscarriages. The questions for the Own Miscarriage module and for the Own Abortion module are exactly the same except the questions reference abortions, not miscarriages. The differences between the Others’ and Own modules are minimal. Comparisons can be made between any two of the four modules on miscarriages and abortions.

Respondents were randomly assigned to answer the Demographics and Attitudes module first or after the four modules on abortion and miscarriage. They were then randomly assigned to answer either the Others’ Miscarriage or Others’ Abortion module. Whichever module they had not already seen was then presented. The schema below further describes the module ordering.

<table>
<thead>
<tr>
<th>Demographics &amp; Attitudes [Randomly assigned to see first or last]</th>
<th>Others’ Miscarriage and Others’ Abortion [Respondents see both, randomly assigned which first]</th>
<th>Own Miscarriage and Own Abortion [Respondents see both, randomly assigned which first]</th>
<th>Demographics &amp; Attitudes [Seen last if haven’t seen first]</th>
</tr>
</thead>
</table>

Here are the questions analyzed from the Others’ Miscarriage module; the others modules are comparable.

Q. [female]: How many women do you know who have had a miscarriage (not including yourself)?
[male]: “How many women do you know who have had a miscarriage (not including the mother in a pregnancy if you were the father or you intended to parent the child)?

0 .........................................................0
1 .........................................................1
2 .........................................................2
3 .........................................................3
4 or more ..............................................4

[If 0, skip to next module]
Q. Now think about the most recent miscarriage you learned about, what is your relationship to the woman who had the miscarriage? She is your…

<table>
<thead>
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<th>Relationship</th>
<th>Code</th>
</tr>
</thead>
<tbody>
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<td>Spouse/Partner</td>
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</tr>
<tr>
<td>Immediate family</td>
<td>2</td>
</tr>
<tr>
<td>Girlfriend</td>
<td>3</td>
</tr>
<tr>
<td>Other family</td>
<td>4</td>
</tr>
<tr>
<td>Close friend</td>
<td>5</td>
</tr>
<tr>
<td>Other friend</td>
<td>6</td>
</tr>
<tr>
<td>Acquaintance</td>
<td>7</td>
</tr>
</tbody>
</table>

Q. How did you learn about the miscarriage?

<table>
<thead>
<tr>
<th>Source</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>The woman who had the miscarriage</td>
<td>1</td>
</tr>
<tr>
<td>told me</td>
<td></td>
</tr>
<tr>
<td>The man involved in the pregnancy</td>
<td>2</td>
</tr>
<tr>
<td>told me</td>
<td></td>
</tr>
<tr>
<td>I heard from someone else</td>
<td>3</td>
</tr>
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</table>

Q. Did you tell anyone about this miscarriage (the most recent one)?

<table>
<thead>
<tr>
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<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

Q. Did you tell anyone in your immediate family about this miscarriage (please include a spouse or partner)?

<table>
<thead>
<tr>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

Q. Please write the initials or first name of each of the people in your immediate family you told about the miscarriage in the form below. Additionally, please indicate how you are related to each person.

Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[10 Vertical boxes with entries for name and a dropdown menu to indicate relationship]

Dropdown options

<table>
<thead>
<tr>
<th>Please select one</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spouse/Partner</td>
<td>1</td>
</tr>
<tr>
<td>Daughter</td>
<td>2</td>
</tr>
<tr>
<td>Son</td>
<td>3</td>
</tr>
<tr>
<td>Mother</td>
<td>4</td>
</tr>
</tbody>
</table>
Q. What are some reasons why you told [import names from prior question, on loop] about the miscarriage?
While this may be hard to remember, please be as specific as possible as your response is important for this research.
[paragraph text box]

Q. Did you tell any of your close friends about this miscarriage (please include any boyfriends or girlfriends)?

Yes .................................................................1
No .................................................................2

[If No, skip to anyone else]

Q. Please write the initials or first name of each of your close friends you told about the miscarriage in the form below.

Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[SHOW 10 TEXTBOXES, VERTICALLY STACKED]

Q. What are some reasons why you told [import names from prior question, on loop] about the miscarriage?
While this may be hard to remember, please be as specific as possible as your response is important for this research.
[paragraph text box]

Q. Did you tell anyone else about this miscarriage?

Yes .................................................................1
No .................................................................2
[If No, skip to questions on keeping the miscarriage a secret]

Q. Please write the initials or first name of anyone else you told about the miscarriage in the form below.

Additionally, please indicate each person’s relationship to you.

Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[10 Vertical boxes and Dropdown menu for relationship]
Dropdown options
Please select one ..................................................
Other family .........................................................1
Other friend .........................................................2
Other .................................................................3

Q. What are some reasons why you told [import names from prior question, on loop] about the miscarriage?

While this may be hard to remember, please be as specific as possible as your response is important for this research.
[paragraph text box]

Q. Is there anyone you usually talk with about personal matters but you deliberately did not tell them about this miscarriage?

Yes .................................................................1
No .................................................................2

[If No, skip to next module]

Q. Is there anyone in your immediate family you usually talk with about personal matters but deliberately did not tell about this miscarriage (please include a spouse or partner)?

Yes .................................................................1
No .................................................................2

[If No, skip to close friends]

Q. Please write the initials or first name of each of the people in your immediate family you deliberately did not tell about the miscarriage in the form below. We are interested in the people you usually talk with about personal matters but deliberately decided not to tell about this miscarriage.
Additionally, please indicate how you are related to each person.
Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[10 Vertical boxes and Dropdown menu for relationship]
Dropdown options
Please select one ................................................ -1
Spouse/Partner ....................................................1
Daughter..........................................................2
Son ..................................................................3
Mother ..............................................................4
Father ................................................................5
Sister ...................................................................6
Brother ..............................................................7
Other .................................................................8

Q. What are some reasons why you deliberately did not tell [import names from prior question, on loop] about the miscarriage?
While this may be hard to remember, please be as specific as possible as your response is important for this research.

[PARAGRAPH TEXT BOX]

Q. Are there any close friends you usually talk with about personal matters but deliberately did not tell about this miscarriage (please include a boyfriend or girlfriend)?
Yes .................................................................1
No .......................................................................2

[If No, skip to anyone else]

Q. Please write the initials or first name of each of your close friends you deliberately did not tell about the miscarriage in the form below. We are interested in the people you usually talk with about personal matters but deliberately decided not to tell about this miscarriage.

Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[SHOW 10 TEXTBOXES, VERTICALLY STACKED]

Q. What are some reasons why you deliberately did not tell [import names from prior question, on loop] about the miscarriage?
While this may be hard to remember, please be as specific as possible as your response is important for this research.

[PARAGRAPH TEXT BOX]
Q. Is there anyone else you deliberately did not tell about this miscarriage?

Yes ................................................................. 1
No ................................................................. 2

[If No, skip to next module]

Q. Please write the initials or first name of anyone else you deliberately did not tell about the miscarriage in the form below. We are interested in the people you usually talk with about personal matters but deliberately decided not to tell about this miscarriage. Additionally, please indicate each person’s relationship to you.
Please note, we are not interested in knowing the identity of these people but we are going to ask follow-up questions about them so please write something so you can identify them later.

[10 Vertical boxes and Dropdown menu for relationship]
Dropdown options

Please select one ............................................ -1
Other family .................................................. 1
Other friend .................................................. 2
Other ............................................................. 3

Q. What are some reasons why you deliberately did not tell [import names from prior question, on loop] about the miscarriage?

While this may be hard to remember, please be as specific as possible as your response is important for this research.

[PARAGRAPH TEXT BOX]

[END OF MODULE]

As mentioned above, the questions regarding respondents’ knowledge of others’ abortions and the questions regarding their own experiences with abortion and miscarriage are directly comparable.

Standard demographic questions were asked. In order to measure attitude toward abortion, respondents were asked:
Which of these comes closest to your view?

Abortion should be generally available to those who want it .................. 1
Abortion should be available but under stricter limits than it is now ............ 2
Abortion should be against the law except in cases of rape, incest, and to save a woman's life........................................ 3
Abortion should not be permitted at all ............................................... 4

To measure gregariousness, the following questions were asked:
How often do you spend a social evening with relatives?

Almost daily ........................................................1
Several times a week ...........................................2
Several times a month .........................................3
Once a month .....................................................4
Several times a year ............................................5
Once a year .........................................................6
Never .................................................................7
Don’t know ..........................................................8

How often do you spend a social evening with friends?

Almost daily ........................................................1
Several times a week ...........................................2
Several times a month .........................................3
Once a month .....................................................4
Several times a year ............................................5
Once a year .........................................................6
Never .................................................................7
Don’t know ..........................................................8
### APPENDIX B

Table B1: Americans' Knowledge of Others' Abortions and Miscarriages and Own Experiences by Demographics and Attitude, AMACS 2012

<table>
<thead>
<tr>
<th></th>
<th>Respondent Has Heard of Someone Else's Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
<th>Respondent or Partner Has Had Miscarriage (%)</th>
<th>Abortion (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>78.52</td>
<td>52.36</td>
<td>***</td>
<td>16.58</td>
<td>11.54</td>
<td>***</td>
</tr>
<tr>
<td>Abortion Attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Generally Available</td>
<td>78.88</td>
<td>59.34</td>
<td>***</td>
<td>12.25</td>
<td>18.19</td>
<td>**</td>
</tr>
<tr>
<td>Stricter Limits</td>
<td>76.12</td>
<td>56.85</td>
<td>***</td>
<td>19.04</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>Rape/incest/life</td>
<td>79.52</td>
<td>46.1</td>
<td>***</td>
<td>21.00</td>
<td>4.96</td>
<td>***</td>
</tr>
<tr>
<td>Not at all</td>
<td>77.99</td>
<td>38.49</td>
<td>***</td>
<td>17.85</td>
<td>1.58</td>
<td>***</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>84.97</td>
<td>59.45</td>
<td>***</td>
<td>20.16</td>
<td>15.16</td>
<td>*</td>
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<tr>
<td>Male</td>
<td>71.56</td>
<td>44.78</td>
<td>***</td>
<td>12.76</td>
<td>7.65</td>
<td>**</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>61.83</td>
<td>33.59</td>
<td>***</td>
<td>7.36</td>
<td>1.48</td>
<td>*</td>
</tr>
<tr>
<td>25-34</td>
<td>85.26</td>
<td>52.63</td>
<td>***</td>
<td>14.97</td>
<td>6.06</td>
<td>**</td>
</tr>
<tr>
<td>35-44</td>
<td>81.25</td>
<td>58.16</td>
<td>***</td>
<td>22.53</td>
<td>12.71</td>
<td>**</td>
</tr>
<tr>
<td>45-54</td>
<td>81.42</td>
<td>64.8</td>
<td>***</td>
<td>18.38</td>
<td>23.69</td>
<td></td>
</tr>
<tr>
<td>55+</td>
<td>76.6</td>
<td>48.24</td>
<td>***</td>
<td>16.07</td>
<td>10.8</td>
<td>*</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, Non-Hispanic</td>
<td>80.12</td>
<td>52.43</td>
<td>***</td>
<td>17.87</td>
<td>9.52</td>
<td>***</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>75.1</td>
<td>59.58</td>
<td>**</td>
<td>21.16</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>Other, Non-Hispanic</td>
<td>74.38</td>
<td>34.27</td>
<td>***</td>
<td>3.83</td>
<td>15.05</td>
<td>*</td>
</tr>
<tr>
<td>Hispanic</td>
<td>75.44</td>
<td>52.56</td>
<td>***</td>
<td>11.83</td>
<td>11.9</td>
<td></td>
</tr>
<tr>
<td>2+ races, Non-Hispanic</td>
<td>75.34</td>
<td>58.25</td>
<td></td>
<td>13.28</td>
<td>19.37</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- ***: p < .001
- **: p < .01
- *: p < .05
<table>
<thead>
<tr>
<th>Category</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
<th>Value 4</th>
<th>Value 5</th>
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</thead>
<tbody>
<tr>
<td>Income</td>
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<td></td>
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<tr>
<td>Less than $15k</td>
<td>71.63</td>
<td>48.72</td>
<td>***</td>
<td>14.32</td>
<td>6.78</td>
</tr>
<tr>
<td>$15k-$30k</td>
<td>76.6</td>
<td>51.74</td>
<td>***</td>
<td>17.12</td>
<td>13.7</td>
</tr>
<tr>
<td>$30k-$50k</td>
<td>80.69</td>
<td>46.34</td>
<td>***</td>
<td>19.05</td>
<td>8.95</td>
</tr>
<tr>
<td>$50k-$75k</td>
<td>79.83</td>
<td>46.68</td>
<td>***</td>
<td>17.35</td>
<td>13.77</td>
</tr>
<tr>
<td>$75k-$100k</td>
<td>81.36</td>
<td>56.37</td>
<td>***</td>
<td>16.25</td>
<td>9.55</td>
</tr>
<tr>
<td>$100k-$125k</td>
<td>76.26</td>
<td>65.71</td>
<td></td>
<td>15.86</td>
<td>12.33</td>
</tr>
<tr>
<td>$125k+</td>
<td>80.79</td>
<td>60.89</td>
<td>***</td>
<td>13.51</td>
<td>15.66</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>69.19</td>
<td>45.58</td>
<td>***</td>
<td>6.45</td>
<td>8.76</td>
</tr>
<tr>
<td>Widowed</td>
<td>81.71</td>
<td>50.68</td>
<td>***</td>
<td>20.08</td>
<td>4.54</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>85.12</td>
<td>63.51</td>
<td>***</td>
<td>27.68</td>
<td>24.01</td>
</tr>
<tr>
<td>Married</td>
<td>82.13</td>
<td>50.89</td>
<td>***</td>
<td>19.02</td>
<td>9.17</td>
</tr>
<tr>
<td>Living with Partner</td>
<td>70.69</td>
<td>62.49</td>
<td></td>
<td>11.38</td>
<td>17.5</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>80.04</td>
<td>49.77</td>
<td>***</td>
<td>17.61</td>
<td>10.43</td>
</tr>
<tr>
<td>Catholic</td>
<td>75.53</td>
<td>52.88</td>
<td>***</td>
<td>15.98</td>
<td>9.37</td>
</tr>
<tr>
<td>Other Christian</td>
<td>79.53</td>
<td>48.94</td>
<td>***</td>
<td>18.37</td>
<td>7.6</td>
</tr>
<tr>
<td>Jewish</td>
<td>90.31</td>
<td>46.09</td>
<td>***</td>
<td>8.23</td>
<td>14.71</td>
</tr>
<tr>
<td>Other Non-Christian</td>
<td>86.99</td>
<td>72.93</td>
<td></td>
<td>25.45</td>
<td>16.76</td>
</tr>
<tr>
<td>None</td>
<td>76.30</td>
<td>57.99</td>
<td>***</td>
<td>13.21</td>
<td>19.45</td>
</tr>
<tr>
<td>Fundamentalist/Evangelical¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>78.82</td>
<td>50.74</td>
<td>***</td>
<td>20.48</td>
<td>9.68</td>
</tr>
<tr>
<td>No</td>
<td>78.29</td>
<td>50.47</td>
<td>***</td>
<td>15.13</td>
<td>9.75</td>
</tr>
</tbody>
</table>
## Religious Service Attendance

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Urban Not Metro</th>
<th>Urban Metro</th>
<th>Region Northeast</th>
<th>Region Midwest</th>
<th>Region South</th>
<th>Region West</th>
<th>Gregariousness Not Gregarious</th>
<th>Gregariousness</th>
<th>Very Gregarious</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Than Once a Week</td>
<td>80.17</td>
<td>52.06</td>
<td>***</td>
<td>17.66</td>
<td>8.95</td>
<td>*</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly</td>
<td>79.8</td>
<td>47.17</td>
<td>***</td>
<td>19.16</td>
<td>8.49</td>
<td>***</td>
<td>***</td>
<td>15.00</td>
<td>9.07</td>
</tr>
<tr>
<td>Once/twice a month</td>
<td>81.78</td>
<td>53.33</td>
<td>***</td>
<td>17.09</td>
<td>10.24</td>
<td>*</td>
<td>***</td>
<td>16.89</td>
<td>12.01</td>
</tr>
<tr>
<td>Few Times a year</td>
<td>80.26</td>
<td>48.47</td>
<td>***</td>
<td>16.78</td>
<td>8.21</td>
<td>***</td>
<td>***</td>
<td>15.00</td>
<td>11.29</td>
</tr>
<tr>
<td>Once a Year</td>
<td>75.11</td>
<td>56.54</td>
<td>***</td>
<td>16.14</td>
<td>16.73</td>
<td>***</td>
<td>***</td>
<td>13.53</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>78.53</td>
<td>55.44</td>
<td>***</td>
<td>13.53</td>
<td>11.29</td>
<td></td>
<td>***</td>
<td>16.89</td>
<td>12.01</td>
</tr>
</tbody>
</table>

*** p<0.001, ** p<0.01, * p<0.05 (two tailed t-tests were used to determine if the rates for miscarriage were significantly different than for abortion)

1 Asked of people who identified as Protestant, Baptist, Catholic and Other Christian

2 Asked of respondents who did not answer 'none' to a question on their religion