POWER AND STIGMA: EXAMINING CHINESE STUDENTS' STIGMATIZED RESPONSES TO CHRONIC HBV CARRIERS

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Communication – Master of Arts

2014

ABSTRACT

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This study examines the influence of power differentials on stigma with respect to separation and status loss regarding an interaction with an individual who has hepatitis B. Rooted in Link and Phelan's (2001) stigma model and Trope and Liberman's (2010) construal level theory (CLT), the current study posits that power relations change stigma such that power holders show more agreement with statements about separation and status loss when they interact with a powerless disease carrier, as compared to the powerless interacting with a powerful disease carrier. In addition, the study tests CLT's prediction on the relationship between power and levels of mental construal. It is expected that an elevated sense of power should trigger higher level of construal, as demonstrated by abstract thinking. A written survey was conducted with one hundred and fifty Chinese college students. Results indicated that power differentials between the healthy participants and the hypothetical disease carrier exerted no impact on self-report stigma measures. Instead, the strongest indicators for stigma outcomes were interpersonal liking and perceived similarity. However, power relations significantly predicted attitude toward the university segregation policy and whether participants agreed to share food with the disease carrier. Contrary to CLT's prediction, participants in low power conditions generated more abstract descriptions assessed by the number of adjectives and state verbs compared to participants in high power conditions. Implications, future directions and limitations are discussed.

ACKNOWLEDGMENTS

There are many people to whom I am deeply grateful. This thesis cannot be accomplished without their help and support.

I wish to thank my advisor, Dr. Mary Bresnahan. It is her immeasurable patience, priceless insights and sincere caring that make my journey in communication science enjoyable. By making time for me, she offered me the inspiration to follow this line of research and helped me throughout the whole process of completing my Master program. I would like to thank my committee members: Dr. Kelly Morrison and Dr. Wei Peng. They provided me with the courage to challenge assumptions, and insightful suggestions to polish my idea.

I am very grateful to the faculty and students in the Department of Communication. I would especially like to acknowledge Dr. Steven McCornack and Dr. Franklin Boster. They not only walk me through theories and research methods, but also teach me what a good science should be. I would like to thank Xiaowen Xu and Jiajia Wang for their great support for coding the open-ended data. For friends who grace me with your good-heartedness: Jie Zhuang, Yi Zhu, Ying Cheng, Wuyu Liu, I want to say, “Xie Xie Ni Men!”

I would like to thank my parents, Xiaoqing Zhu and Ping Zong, and my grandmother, Xiuhua Zhang for their unconditional love!

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INTRODUCTION

One may be surprised, even startled, by the extent to which stigma perpetuates throughout history. For example, Falk (2001) describes that the Greeks marked slaves with brands to ensure that their valuable property would be secured and under control. Such marks were called stigma because in Greek the word "stig" stands for "to prick" a form of tattooing socially marginalized people to ensure that they would be kept separate from others (Falk, 2001). Since then, attempts to demarcate the limits of inclusion have always accompanied the development of human civilization. Christian Europe during the Middle Ages showed stigma against Jews. Similarly, stigma was revealed in the witchcraft trials in seventeenth-century New England, and, more recently, in the McMartin Preschool trial in twentieth-century California. These are all typical but appalling examples of stigmatization (For a thorough illustration, see Falk, 2001, p. 1-27). Although modern expressions of stigma are not as brutal as tattooing the slaves with pointed instruments in ancient Greece, its pervasiveness and insidiousness have not diminished with time (Crocker, Major, & Steele, 1998; Jones et al., 1984; Major & O'Brien, 2005; Link & Phelan, 2001).

Contemporary discussions and applications of stigma were resurrected by sociologist Erving Goffman's (1963) seminal book *Stigma: Notes on the Management of Spoiled Identity*. Built upon Goffman's ideological conceptualization, later theorists contributed to the stigma construct from different specializations. Social psychologists embedded stigma in characteristics of individuals (Yang et al, 2007). For example, Crocker and her colleagues viewed stigma as a product of devalued social identity and situational stimulus applied to an individual (Croker et al., 1998). Fiske (1998) approached stigma by examining the interplay among inferences, judgments and behaviors of an individual on the basis of membership in a given social group.

However, the social psychological approach has been criticized for focusing too narrowly on individual factors at the expense of a more general picture of how societal-level forces influence stigmatization (Parker & Aggleton, 2003).

Sociologists such as Link and Phelan (2001) attempted to understand the concept of stigma from a macro perspective. Unique to their model is the introduction of the concept of power as a determinant of stigmatic processes. In their view, power serves as a reference point that prevents stigma from evolving into a broad and all-encompassing concept that may finally end up with no utility. This insight is both theoretically and empirically important. Theoretically, it departs from previous conceptualizations by viewing stigma as "processual" and created by "structural power" (Yang et al, 2007, p. 1525). Empirically, it opens a new path for anti-stigma campaigns; that is, given that stigma is entirely dependent on power differentials, stigmatic attitude may be modified by identifying and challenging prejudicial attitudes held by those in power and internalized by recipients of these stigmatized attitudes who often have no resources to challenge these stigmatizing processes. Anti-stigma campaigns both must diminish the impact of these attitudes held by the stigmatizers and the stigmatized as well as create a path of empowerment and effective response for both partners to reduce differences based on power perceptions. Despite its acknowledged significance, power has not been experimentally manipulated or measured in the stigma literature. It is still unclear in what ways and to what extent personal and social power differences influence each component of stigma. The lack of empirical investigation hinders efforts to develop effective anti-stigma messages by bridging power-perception discrepancies. This study aims at filling these gaps. Specifically, the study is rooted in construal-level theory (Trope & Liberman, 2003) to examine how perceived power differentials, as a dimension of psychological distance, impact Chinese college students'

hepatitis B-virus-related stigma. Construal level theory makes novel predictions regarding the effects of power differentials on the levels of mental abstraction, and therefore offers new insights on why and how power holders perceive social stimuli differently from the powerless. Moreover, empirical data support the abstraction hypothesis of construal level theory better than other predictions derived from classical power-processing models (i.e., power-as-control and power-as-inhibition).

Hepatitis B is a highly contagious and sometimes fatal disease that is prevalent among young adults and middle-age individuals in western provinces in China. Because of the severity of this disease and its highly contagious nature, people who are infected with HBV often report that they suffer from stigma. They are socially ostracized by others and deprived of jobs and advancements when their disease is disclosed even though this is illegal (Na & Na, 2013). Stigma theory provides a powerful framework to explain their experience (felt stigma) and to also consider stigmatizers (enacted stigma; Scambler, 2004).

The paper begins with a brief discussion of hepatitis B in China, followed by discussions of stigma based on Link and Phelan's (2001) model. Then a synopsis of research on the relationship between power and stigma will be discussed. After that, construal-level theory is introduced, which is used to develop hypotheses and research questions. The method and results are then presented, followed by discussion and implications for future research.

LITERATURE REVIEW

HBV and HBV Related Stigma in China

Hepatitis B is a potentially life-threatening liver disease (HBV; World Health Organization, 2013). According to the World Health Organization (2013), around 2 billion people worldwide are infected with HBV, among whom over 240 million are chronic HBV carriers. Patients with chronic infection have a 15% to 40% risk of developing liver damage, cirrhosis, or hepatocellular carcinoma (Alexander & Kowdley, 2006).

China has been identified as one of the "high" prevalence regions where HBV is highly endemic. Despite a vaccination program for newborn babies since the 1990s, the reported incidence of HBV is still increasing. There are approximately 93 million chronic carriers of HBV, and 300,000 people die from HBV-related diseases every year (Liu & Fang, 2007). HBV cannot be spread by sharing food utensils and casual contacts such as hugging, kissing and holding hands (Center for Disease Control and Prevention, 2010). The most common transmission routes in China are neonatal infection and horizontal transmission, e.g. drug use or sexual contact (Liu & Fang, 2007). Noticeably, a recent countrywide epidemiology investigation found that young adults between 22 to 24 years old are most vulnerable among all sectors, with a rate of 144.41/100,000 (Li & Liang, 2009).

Due to its contagious and potentially lethal nature, stigma toward chronic HBV carriers is not uncommon in a wide range of social contexts (e.g., Bao, 2007; Lai & Salili, 1998; Liu & Zhou, 2010; Na & Na, 2013; Shi, Chyun, Sun, Zhou, 2013). For example, Na and Na (2013) coded messages posted on the online bulletin board system (the Hepatitis B Camp Network) for people with HBV in China and reported that HBV carriers suffered from institutional discrimination, relationship difficulty and limitations in the health care system. In one case, an

elementary school physical education teacher announced a little girl's disease (HBV) to the whole class and her friends began to shun her. The girl's father wronged her intentionally by accusing her of theft in order to prevent her from visiting the family. In another case, a hepatitis B patient said doctors would "try everything to hospitalize patients and prescribe expensive medication to make profits" without any concern about their health (Na & Na, 2013, p. 79). Bao (2007) found that 64% of survey participants feared being infected and wanted to intentionally keep distance from HBV carriers, even though in a "covert" manner. Although the government has promulgated a new labor law to ban any form of discrimination against one's HBV status, equal educational and working opportunities are still far from being guaranteed (Beijing Yirenping Center, 2011).

In addition to the status loss, stigma against people living with the illness also negatively affects their psychological well-being and life satisfaction. This link has been well supported by stigma literature (e.g., Major & O'Brien, 2005). Stigma against people living with the virus is positively associated with depression (Kunkel et al., 2000), stress (Link & Phelan, 2006), and avoidance of social support (Smith, Rossetto, & Peterson, 2008). The family members of the stigmatized are also negatively affected. Parents of children living with HBV reported more somatic problems than parents of healthy children. They felt more panicky, less secure, and perceived themselves less competent in daily tasks and interactions than the healthy group of parents (Lai & Salili, 1998).

Definition of Stigma and Link and Phelan's Model

Few problems in stigma literature are more perplexing than the clarity of the concept. Indeed, the first core criticism of research on stigma is the variability entrenched in its definition (Link & Phelan, 2001; Smith, 2007). A frequently cited definition of stigma is Goffman's (1963)

classic formulation. For Goffman (1963), stigma is defined as "an attribute that is deeply discrediting" and "the situation of the individual who is disqualified from full social acceptance" (p. 3). He further identified three types of attributes that may result from stigmatization: tribal stigma (generation-to-generation, or membership based stigma), "abominations of the body" (devalued social identity due to physical characteristics such as obesity), and "blemishes of individual characteristics" (attributes based on personality or behavior). Drawing on Goffman's organizing scheme, Jones et al. (1984) viewed stigma as a "mark" of deviance and specified six dimensions along which stigmatizing conditions vary: concealability, course, disruptiveness, aesthetic qualities, origin and peril (For a detailed discussion, see Crocker et al., 1998). Crocker et al. (1998) placed a stigma in a social context that defines a spoiled or flawed identity, suggesting that pervasiveness, ambivalence, anxiety and discrepancy between attitude and behavior are critical to stigmatization.

Even though these conceptualizations of stigma and stigmatizing conditions are, at best, considered to be fuzzy (Crocker et al., 1998), inherently they converge on several insightful perspectives. First, the stigmatized possess "marks" that are devalued in a given society. Stigmatizing conditions are not necessarily objective and clearcut. Instead, they tend to be based on the belief that an individual's possession of undesirable characteristics is sufficient to lead to devaluation (Crocker et al., 1998). For example, a person's body size may be stigmatized not because the body shape fails to meet scientific, medical standards (e.g., BMI), but because stigmatizers feel there is a discrepancy between perceptions that someone holds compared to a socially ideal body which few people achieve (Anderson & Bresnahan, 2013). Devalued marks can be visible or invisible, controllable or uncontrollable (Crocker et al., 1998), and are associated with appearance, behavior and group identity (Major & O'Brien, 2005). Second,

stigma is socially constructed. Consistent with Goffman's (1963) definition, stigma is a "special relationship between an attribute and a stereotype" (p. 4) and is manifested in "a language of relationships" (p. 3). It is not inherently an attribute, but rather emerges in social interactions where an attribute is associated with devaluating meanings. Third, stigma is a multidimensional construct. Theorists disagree on the number of dimensions, but they all attempt to organize stigma into multiple categories conceding the salience of each category is dependent on relationships, contexts and cultures (Katz, 1981). Finally, although these theorists did not consider power as an antecedent of stigma, they describe (e.g., Jones et al., 1984) the role of power in influencing one's susceptibility and reaction toward stigma (Yang et al., 2007).

The definitional murkiness of stigma results in an arbitrary boundary between the concept and its "intellectual cousin," prejudice (Schafer & Ferraro, 2011, p. 78). Recent theoretical discussions about stigma and its associates have admitted their definitional overlap, and suggested that stigma scholarship diverges from that of prejudice more in terms of subjects of interests rather than real and substantial conceptual meanings (Stuber, Meyer, & Link, 2008). The research tradition of stigma focuses on people with "unusual" conditions such as disability and infectious diseases; whereas, research on prejudice is traditionally more concerned about "usual" aspects such as social conflict based on race, gender, and nationality. Reviewing 18 key conceptual models of stigma and prejudice across domains, Phelan, Link and Dovidio (2008) concluded that stigma and prejudice, at best, described "a single animal."

Given the complexity of the stigma phenomenon, Link and Phelan (2001) argued that, rather than seeking a single reasonably sufficient definition, it might be wise to allow variations in conceptualizations. To that end, they constructed stigma as a broad umbrella concept that links interrelated components co-occurring in a situation of power imbalance: namely, labeling,

negative attribution, separation, status loss and discrimination. Their categories for stigma bear similarity with several other models (e.g., Smith, 2007).

Labeling refers to a negative and oversimplified designation that is arbitrarily attached to members of a social group in the function of a socially salient identifier. Labels dehumanize a person so that devaluing characteristics are perceived as the most salient manifestations of his/her primary identity (Anderson & Bresnahan, 2013; Hogg & Reid, 2006). In the case of HBV stigma, labels can oversimplify an HBV carrier's identity as contagion, such as calling people infected "a mammoth disaster" or "a filthy vessel of disease." Labels are often taken for granted and therefore become naturalized and invisible (Link & Phelan, 2001). Research has shown that labelling is the easiest, most socially acceptable and least prejudicial form of stigma (Green, Davis, Karshmer, Marsh, & Straight, 2005).

Negative attribution refers to an association between labeled differences and stereotypes. When people are exposed to labeled demarcations, they may have the tendency to assign to the stigmatized a set of undesirable characteristics that exist in their stereotypical knowledge structure (Fiske, 1998). For example, a person living with chronic HBV may be seen as "dirty", "less competent" and "dangerous." Negative attribution is cognitively efficient since it provides stigmatizers with "a means of making shorthand decisions that frees them to attend to other matters" (Link & Phelan, 2001, p. 369). In contrast to labeling, negative attribution focuses on the process in which unfavorable traits are linked to people who are socially isolated (Zhuang & Bresnahan, 2012).

Separation deals with the belief that stigmatizers should avoid contact with people who are derogated. Separation is a natural product of labeling and negative attribution given that these two components rationalize the existence and maintenance of group-based inequality (Pratto,

Sidanius, & Levin, 2006). That is, the belief that chronic HBV carriers are "a filthy vessel of disease" and thus "dangerous" justifies a decision to avoid this menace by psychologically and physically keeping away from them.

Status loss and discrimination are the consequences of the other components. When the stigmatized are labeled, linked to unfavorable characteristics, and held apart, they are also vulnerable to denial of life chances such as employment, education, nutritional food, health care and psychological well-being. HBV carriers in China are confronted with employment discrimination, denial of admission into universities, unaffordable treatment expenses, and a restricted range of social support (Lai & Salili, 1998; Na & Na, 2013).

More relevant to this research, Shi, Chyun, Sun, and Zhou (2013) developed an HBV-stigma scale with 717 Chinese college students. They found that separation and status loss combined explained almost 50% of variance, while the other dimensions altogether accounted for less than 15%. Therefore, the current study will focus on the influence of perceptual power differences on separation and status loss against chronic HBV carriers.

Link and Phelan's (2001) stigma model holds that the production and maintenance of stigma rely on a context of power imbalance where the components converge. Power difference is a necessary condition for stigma to occur. Stigma would not exist in a condition where stigmatizers and the stigmatized share equal status because the former would lack social, economic and political power to imbue their cognition with serious negative consequences. In their views, stigma exists when the Nazis labeled the Jews as "a poisonous race" and linked the Jewish people with characteristics such as "inferior" and "corrupted" because the political, economic, cultural, and military power of the Nazis paved the way to transform stigmatizing cognition into the devastating Holocaust.

Moving one step forward, the model presupposes that the impact of power should be unidirectional: the possession of power, whatever its form, equips the dominant group with the ability to define the differences, to couple them with undesirable characteristics, and to make the demarcations culturally and socially recognized. With social recognition of artificial categories, devaluing meanings become salient during interactions and gradually internalize as the primary identity of the subordinate group (Hogg & Reid, 2006). Separation, status loss and discrimination are logical outcomes of power-driven cognition when the oversimplified and stereotyped identities perpetuate in social encounters. Conversely, without a reference to power imbalance, stigmatizers may hardly be able to translate negative designations and attributions into culturally accepted segregations, not even to mention status loss and discrimination. Therefore, even though the Jews might call the Nazis "butchers" and thought of them as "ferocious" and "inhumane," the Nazis cannot be counted as the stigmatized because they did not suffer from correspondingly serious discriminatory consequences.

The inclusion of power as a core concept in the stigma model has gained considerable currency in both theoretical and empirical discussions (e.g., Monaghan, 2010; Park & Aggleton, 2003; Rutledge, Abell, Padmore, & McCann, 2009; Sayce, 2003; Scambler, 2009; Trammell & Morris, 2012). For example, Park and Aggleton (2003) combined Foucault's work on cultural production of differences with Goffman's formulation, arguing that the influence of power on stigma is exercised not through physical force or coercion, but through cultural "subjectification" (p. 17). Power applies to everyday symbolic transaction, which categorizes a person, marks him by negatively valued differences, and "imposes a law of truth on him which he must recognize and which others have to recognize in him" (Foucault, 1982, p. 781). Therefore, power creates a class of docile subjects who conform to an established regime of knowledge and regard social

inequality as justifiable and legitimate. Supporting power as a central component of stigma, Trammell and Morris (2012) examined how community leaders discussed gender stigma toward women in Yemen. They found that women who had committed fornication were subject to imprisonment and banishment while men were allowed to engage in mediation rituals in order to help them readjust to society in spite of sexual infidelity. In their analysis, they attributed the persistence of gender stigma to Sharia law (legal power), clan-based and tribal society (structural power), and gender norms (ritual power). Regarded as a "major reconceptualization" (Sayce, 2003, p. 627), power has been used as a reference point to analyze a wide variety of stigma-related topics such as schizophrenia (Schulze & Angermeyer, 2003), HIV (Rutledge et al., 2009), obesity (Monaghan, 2010), energy practice (Hards, 2013), and anti-stigma strategies (Sayce, 2003).

Although discussions that prioritize power contribute to the understanding of stigma produced by structural and cultural inequality, it is still unclear how psychologically represented power imbalance changes individuals' perception and verbal responses to the stigmatized. In other words, how does structural power at a national and cultural level internalize in an individual's cognition and determine the magnitude of stigma? As Scambler (2009) argued, it is pivotal to understand that individuals who might stigmatize possess, both psychologically and physically, enough power to "underwrite and maintain a separation of 'us' from 'them'" (p. 450).

A number of studies have found that people felt more empowered when anticipating interaction with a stigmatized outgroup than a nonstigmatized ingroup (e.g., Baldwin, Kiviniemi, & Snyder, 2002; Klein, Snyder, & Gonzalez, 2009). In one experiment, Klein et al. (2009) showed participants photographs of either obese or normal-weight people, and measured their perceptions of power when interacting with targets. As expected, participants reported

themselves more powerful when the anticipated target was overweight rather than normal weight. More relevant to the current study, they also found that participants reported stronger negative judgments on the targets' ability of self-control and sense of responsibility when expecting to interact with an obese rather than a thin person. Since the study did not experimentally manipulate power perceptions, it is not clear whether negative responses toward obese people were due to an elevated sense of power. But Klein et al.'s (2009) results suggested that individuals' internal representation of power differential might have an effect on their subsequent stigma toward members of an outgroup. In addition, Klein et al. (2009) did not control the actual power differential *a priori* in experimental manipulations, indicating that power relations might be restructured psychologically within groups or dyads regardless of actual power gaps. Filling the holes in the literature, the current study is designed to map out a clearer relationship between perceptual power differentials and stigma toward HBV carriers.

Previous Research on Power and Stigma from the Social Cognitive Perspective

In the current study, power is defined as "A's ability to affect the quality of outcomes attained by B" (Thibaut & Kelley, 1959, p. 101). Power is a source to "modify others' states by providing or withholding resources or administering punishments" (Keltner, Gruenfeld, & Anderson, 2003, p. 5). Reviewing the social psychological literature on this topic, Fiske and Berdahl (2007) argued that an outcome-focused definition of power is more inclusive because it not only explains the origins of the capacity to influence, but also admits that the experience of power is detached from target volitions. People who have control over others' outcomes possess power regardless of whether they intend to use their power. Outcomes, in this definition, can be physical, economic and social. French and Raven (1959) outlined five bases of power on which a person manipulates resources to exert influence: rewards (e.g., benefits, promotion), coercion

(undesirable assignment, abuse), legitimacy (socially-approved responsibilities, right to order), expertise (knowledge, professional advice), and reference (reputation, importance, admiration).

Social cognition research on the interplay between power and stigma has been based on two different foci: the link between power and stereotype activation (Fiske, 1993), and the link between power and behavioral approach and inhibition system (Keltner et al, 2003). The power-as-control (PAC) model (Fiske, 1993; Goodwin, Gubin, Fiske, & Yzerbyt, 2000) proposed that power influences stereotyping through attention. According to PAC, stereotyping activates via two routes: by default and individuation. Stereotyping by default occurs when people are not motivated or simply lack cognitive ability to process information. In this case, they engage in effortless category-based processing, pay little attention to stereotype inconsistent information, and form simplistic and stereotypical impressions. In contrast, stereotyping by individuation occurs when people are interested in information or are motivated to make accurate predictions. To that end, they engage in more effortful noncategory-based processing, pay much attention to cues that disconfirm stereotypes, and make judgments based on individuating information. Fiske (1993) argued that power should be one of the triggers that determines the routes of stereotype activation. Specifically, the powerful 1) *do not need* to attend closely to others who have no or little control over outcomes, 2) *may not want* to if they are high in need for dominance, and 3) *cannot* because they are attentionally overloaded by multiple subordinates. Therefore power holders are more likely to stereotype the powerless by default. In contrast, the powerless are expected to distinguish individuating information carefully in order to form an accurate understanding about their superordinates who decide rewards and punishment. When expanding to stigma, PAC would predict that an elevated sense of power should encourage stigma. That is, the extent of stigma should be stronger when uninfected power holders interact with the

powerless HBV carriers, as compared to when uninfected powerless interact with powerful disease carriers.

Another approach is Keltner et al.'s (2003) power-as-activation (PAA) model. According to PAA, people enter interactions with the stigmatized with an assessment of power. An elevated perception of power is posited to relate with the behavioral activation system (BAS), which is characterized by sensitivities to rewards, nonpunishments, and avoidance of costs. A decreasing sense of power is related with the behavioral inhibition system (BIS), which is a source of aversive motivation in response to punishment, nonreward and uncertainty (Gray, 1990). People who feel empowered when interacting with the stigmatized activate the BAS, pay attention to benefits and mutual enhancement of the interactions, and are thus expected to feel positive emotions, perceive the environment as supportive to the self-image, and judge the interactions as smooth and rewarding. In contrast, as a response to a decreasing sense of power, the BIS is activated, which results in the powerless focusing on costs and punishments, seeking vigilantly for environmental threats, experiencing negative emotions, and making discrediting judgments on targets. Applying to stigma, PAA would make opposite predictions with PAC: An increase in perceptual power is expected to shrink the magnitude of stigma toward targets of the interaction. That is, the extent of stigma should be stronger when the uninfected powerless interact with powerful HBV carriers, as compared to when the uninfected powerful interact with HBV carriers low in power.

Though making competing predictions about power and stigma, both the PAC and the PAA models only received partial support from empirical data. Data were consistent with PAC's predictions about relationships between power and attention to stereotype-consistent information, but failed to support the effects of power on impression formations (e.g., Fiske & Depret, 1996;

Goodwin et al., 2000). For example, in one of Goodwin et al.'s (2000) studies, participants were asked to evaluate fictitious job applicants whose ethnicities were either Hispanic or Anglo. Half of participants were told that their evaluations would affect decisions about which applicant to retain in the program (high power), whereas the other half were told their evaluation played no role in final decisions (low power). Then they were asked to respond orally to information that came to their mind. As predicted, powerful participants spent significantly more time on reading stereotype-consistent information than their non-powerful counterparts, suggesting that power holders stereotype the targets by default while the powerless seek stereotype-disconfirming information. However, participants' impressions ratings toward applicants with different ethnicities did not significantly differ between power conditions in all three studies they reported.

More importantly, the PAC model is even more problematic by equating power change with attentional process. Assuming that power inequality maintains stigma via intentionally and strategically controlling individual attention, it is reasonable to expect that stigma can be eliminated by getting power holders to allocate attention to the powerless (Reid & Ng, 1999). However, this conclusion can be easily refuted by a bulk of studies which suggested that the more attention given to one's devaluing mark (e.g., obesity), the more derogatory comments and separating behavior one experiences (see Major & O'Brien, 2005; Smith, 2007).

Similarly, empirical studies testing the PAA model reported mixed findings. Specifically, the model gained stronger evidence on the link between high power and the BAS than the link between low power and the BIS (e.g., Berdahl & Martorana, 2006; Cook, Arrow, & Malle, 2011; Galinsky, Gruenfeld, & Magee, 2003). People high in personality dominance expressed more open opinions during group discussion (Berdahl & Martorana, 2006), were more likely to remove disturbing sources (Galinsky et al., 2003), and relied more on social target's

usefulness when deciding approach or avoid. These findings generally lent strong support to power holders' tendency to approach rewards, even though most evidence was correlation-based and contributed little to establish a causal link as predicted by the model (Cook et al., 2011). However, one challenge for the PAA model is the minimal connection between low power and BIS. Most studies had difficulties in distinguishing participants in low power from those in control conditions on relevant outcomes. For example, Smith and Bargh (2008) directly measured BAS/BIS after priming participants for high or low power. Participants primed for high power scored significantly higher on BAS than those primed for low power, but no significant differences in BIS were found across three conditions (high, low power, and control). The authors attributed no differences to the failed manipulations. However, it is equally possible that reduced power may not associate with BIS or the association is mediated by an undiscovered variable. Even if in studies where low power participants gained significantly higher scores on BIS than high power individuals, it is still possible that the results were mainly driven by "the disinhibiting effects of high power rather than the inhibiting effects of low power" due to their correlational designs (Cook et al., 2011, p. 175).

Taken together, both models shed light on how power shapes stigma outcomes via cognitive processes, but part of each model was poorly supported by empirical data. The null results suggested that they might not be the sufficient approaches to account for the relationship of interests. On that basis, the current study seeks for explanations from a new perspective—construal level theory.

Construal Level Theory

Construal level theory (CLT) addresses how psychological distance influences individuals' mental representations (Trope & Liberman, 2003, 2010). Within CLT, psychological

distance is defined as the gap between the reference point of the self and the object that is not present in the direct experience of reality (Trope, Liberman, & Stephan, 2007). It varies along four distinct but interrelated dimensions: time, space, social distance and hypotheticality. CLT assumes that people develop multiple levels of construals in order to traverse different psychological distances. A high-level construal is characterized in abstract, deindividualized, and schematic representation, while a low-level construal consists of concrete, contextualized, and detailed information (Nan, 2007). For example, HBV can be construed as "a contagious virus that can survive outside the body for at least seven days" at low levels, and can be construed as "a disease" at high levels. According to CLT, moving from a concrete to an abstract representation requires recognition of central features and omissions of functionally secondary information (Trope & Liberman, 2010).

CLT postulates that people represent an object with higher levels of construal when the psychological distance from the object increases. Specifically, people are more likely to form a simpler, more ambiguous, and more prototypical representation when the object is psychologically distant rather than proximal to the self. The first empirical support for CLT comes from studies on temporal distance. Liberman and Trope (1998) asked participants to imagine themselves engaging in activities such as "reading a science fiction story" and "moving into a new apartment" either "tomorrow" or "next year", and then to describe these activities. In support of the theory, participants in the "tomorrow" condition produced significantly more detailed information (e.g., packing and carrying boxes) than those in the "next year" condition. Recent studies testing the effects of temporal distance on construal levels are consistent with CLT's predictions. Participants in distant futures classified events with fewer but more abstract and ambiguous categories (Liberman, Sagristano, & Trope, 2002), were less restrained by

situations when making decisions (Nussbaum, Trope, & Liberman, 2003), made more "why" statements, which are hallmarks of high-level construals (Freitas, Gollwitzer, & Trope, 2004), and performed better in insight tasks (Forster, Friedman, & Liberman, 2004), as compared to those in near futures. Semin and Smith (1999) found similar results on the effects of past temporal distance on levels of construal. They asked participants to recall significant events that happened either in the distant or recent past. Expectedly participants used more abstract language to describe distant than recent past events.

Liberman and Trope (2010) argued that temporal construal theory is a special case of a general theory of psychological distance, whose four dimensions should influence level of construals in a similar way. Indeed, the experimental technique that used spatial distance (e.g., the distance of a seat from a person) as an indicator of social distance suggested that different types of psychological distance are mentally associated. Therefore, it is reasonable to expect that, similar to temporal distance, people mentally represent an object at higher levels of construal with an increase of social distance from the object. In support of this proposition, Nan (2007) found that participants who were asked to make judgments about hepatitis C virus tests from the perspective of an average undergraduate held more positive attitudes than those from the perspective of their best friend, indicating that participants produced more general thoughts in distal than proximal conditions. In one of Libby and Eibach's (2002) studies, descriptions of an activity (e.g., playing a drum) from a first-person perspective involved more specific and vivid expressions than those from a third-person perspective. In light of CLT, this finding suggested that mental representations from a socially distant position (e.g., a third-person perspective) are at a high level.

Power constitutes social distance in a way that an elevated sense of power entails socially

distant perceptions (e.g., Hogg & Reid, 2001; Lee & Tiedens, 2001; Overbeck & Park, 2001; Smith and Trope, 2006). Consistent with social identity theory, power holders view themselves as distinct and independent, and feel psychologically and socially independent from their subordinates. They adopt different rhetorical styles to enhance prototypicality and power hierarchies, but meanwhile parse themselves out from the rest of the group (Hogg & Reid, 2001). Lee and Tiedens (2001) argued that the pyramidical structure of society decides that only few people can occupy powerful positions, which in turn creates an identity in them as "a subjective sense of separation and distinctiveness" (p. 43). Trope and Liberman (2010) concluded that power has become an operational definition of social distance in the social psychological literature.

If power induces social distance, based on the CLT, the current study hypothesizes:

H1: Participants in the high-power condition should mentally form impressions about chronic HBV carriers at higher construal levels than those in the low-power and control condition.

In light of the previous discussion, cognitive representations of objects at high levels entail extracting the most salient and central characteristics of the objects, disregarding the secondary and peripheral aspects, and thus categorizing the objects based on schematic and generalized aspects (Smith & Trope, 2006). Logically, people should give more credit to abstract and decontextualized features in impression formations when the targets are socially distant than proximal. In a series of studies, Kray and Gonzalez (1999, study 2) found that participants rated personal satisfaction (the central dimension) more important than salary and location (the secondary dimensions) when recommending jobs to their friends (socially distant targets). However, participants rated all three aspects equally important when they were instructed to

recommend jobs to themselves (socially proximal targets). Similar results were replicated and even stronger in a subsequent study in which participants were asked to select a major for their cohort or students from other departments (study 3). These results suggested that central and schematic features will guide impressions about socially distant objects, while contextualized and specific aspects will play a major role in attitudes toward socially proximal objects (Liberman et al., 2007).

Previous research found that contagion is rated as the most salient attribute when people think of an individual infected with the disease such as HIV and HBV (e.g., Colter et al., 2012). For example, Colter et al. (2012) found that over 70% of people agreed that putting others at risk was a main characteristic of HBV carriers. Research in HIV-related stigma discussed a phenomenon called "Magical law of contagion," which describes the belief that HIV can be spread through casual contact with objects that had been touched by people living with HIV (Rozin, Markwith, & McCauley, 1994). In the current study, participants primed with high power may imagine interactions with the infected powerless at higher levels of construal, extracting the most central feature of HBV carriers (contagion), giving it heavy weight and omitting other secondary features (e.g., personality, desirability) during impression formation. Given that fear of being infected may predominate their cognition, power holders are likely to separate themselves psychologically and emotionally from the infected powerless, and agree with actions that deprive HBV carriers of life chances in order to keep away from threats. In contrast, the powerless represent interactions with the infected powerful at low levels of construal, giving equal weights to each feature of HBV carriers. They may also recognize the contagious potential of HBV, but unlike the powerful, they also take other information into consideration and sum the contribution of each attribute to the overall value. Viewing the

infected powerful as friendly and supportive may counteract fear of contagion. Therefore, the powerless may not keep distant from the infected powerful, and agree with actions that result in status loss. Dependent on the results of H1, this study further hypothesizes:

H2: Participants in the high-power condition should hold stronger stigma toward chronic HBV carriers than those in the low-power and control condition. Specifically, the powerful should show more agreement with statements about a) separation, and b) status loss against HBV carriers, as compared to the powerless.

H3: Participants in the high-power condition should hold more positive attitudes toward the university's policy on separating HBV carriers from other students and faculty than those in low power and control condition.

In terms of power's effects on information processing, both PAC and PAA predict that power holders, as compared to the powerless, process information less deliberately and more heuristically because the powerful may simply rely on existing stereotypical structures as a cognitive shortcut to form understanding and attitudes. According to Fiske's PAC (1993), elevated power is expected to result in the use of effortless processing, less attention paid to other interactants and rapid judgments, while feeling disempowered triggers controlled cognition, which is characterized by deliberate considerations of situational constraints as well as others' behavior. Similarly, propositions seven and eight of the PAA (Keltner et al., 2003) predict respectively that "elevated power increases the automaticity of social cognition" (p. 29) and "reduced power increases controlled social cognition" (p. 32). In contrast, CLT does not admit power-driven distinctions in the depth of processing. It implies that the effects of psychological distance on construal may not induce systematic differences in the magnitude of elaborations. As they argued, "extracting the general meaning and invariant characteristics of

objects is not necessarily more or less effortful than fleshing out the minute details of the objects" (Liberman & Trope, p. 15). In one of the frequently-cited evidences, they found that the number of thoughts participants listed did not differ between the psychologically distant and proximal conditions (Ledgerwood, Trope, and Chaiken, 2010, Study 4). The authors interpreted the results as direct support for the claim that abstract thinking did not equal shallow cognition. However, the study did not pretest the students' capacity to produce concrete arguments about the topic (universal health care). Therefore the null findings may be explained by the inability to produce concrete descriptions about a complex social issue rather than the lack of processing depth. In addition, the experiment did not include a control condition in its design, thus leaving uncertainty about how participants would perform without priming manipulations. Based on the above discussion, the following research question was proposed.

RQ1: Will there be differences in the depth of information processing among three conditions?

PILOT TEST STUDY

The purpose of the pilot test study was to establish the scenarios to be used in the main study. The scenarios, by design, should successfully elicit different power perceptions without producing systematic variations in self-reported liking about hypothetical HBV carriers. In addition, the constructed scenarios should be viewed as equally realistic by participants.

Participants, Procedures and Stimuli Material

A pilot study with 60 undergraduates (19 men, 39 women and 2 unwilling to disclose; age M = 20.88, SD = 0.89, range = 19-24) from a large western university in China was conducted to test experimental manipulations. Students were compensated with research credit. Since the current study aimed at understanding HBV stigma from the perspective of stigmatizers (non-disease carriers), two participants (3.3%) who reported being HBV positive were excluded from analysis. The majority of the resulting working sample were juniors (n = 54, 93.1%) and immunized (n = 49, 84.5%) in the past three years. 11 out of 58 (19%) reported having either friends or family members who were chronic HBV carriers.

The pilot study employed a three-condition (high-, low-power and control) between-subjects design. Upon completing consent forms, participants were randomly given one of three questionnaires. All three versions were identical except for the stimuli material. Questionnaires started with the instruction, "On the next page, you will read a scenario. Please assume that you encounter the issue described in the message. We are interested in your authentic response in the given setting. Your responses are anonymous and confidential." Then participants were instructed to read one of three power manipulations. In the high-power scenario, participants were assigned to be a student consultant for an HBV-infected freshman. The scenario described specific aspects in which the participant may exert influence over the new student (e.g., determining rewards and punishments by the end of each semester). Participants in the low-

power condition were presented with a scenario in which their advisor was diagnosed as HBV positive. The message also described specifically how the advisor has power over the participants (e.g., writing letters of recommendation that warrant a good position in the company). The control condition did not have any statements related to power, and instead offered factual information such as the university history. The scenarios were designed to be gender neutral and approximately comparable in length (see the Appendix A). After power priming, participants responded to items measuring personal power relative to the hypothetical individual and liking. Following Brislin (1970), the questionnaires were translated and back-translated by the researcher and a qualified bilingual translator blind to the project. Disagreement was resolved through discussion.

Key Measures

Personal power relative to the hypothetical individuals was assessed with six semantic differential items developed by the author (i.e. Compared with Prof. Wang/Xiao Wang, I am *powerless/powerful, uninfluential/influential, not respected/respected, low/high status*). Confirmatory factor analysis (CFA) using AMOS 19 showed that the power measurement was unidimensional (GFI = .97, NFI = .95, CFI = .99, RMSEA = .05). The reliability of the scale was acceptable (α = .82). The description of Xiao Wang's over-reliance on other's advice in the high-power condition might be viewed as annoying by participants, and therefore liking was a potential confound in the design. A 7-item sematic differential scale of liking was developed by the author. Sample items included: *I think Wang is popular/unpopular, unfavorable/ favorable, not nice/nice*. CFA (AMOS 19) showed that the liking measurement was unidimensional (GFI = .98, NFI = .96, CFI = .99, RMSEA = .06). Despite the small sample size in each cell (n = 20), the reliability of the scale was acceptable (α = .71). Since participants were asked to write down

actual messages in response to the requests from hypothetical figures (i.e. sharing bread), realism is important in the design. It was checked by one item asking, "*The scenario I just read is realistic*."

Results for the Pilot Study

A manipulation check was used to ensure that the scenarios aroused effects on participants as theoretically intended. That said, participants who read the high-power scenario should evaluate themselves more powerful than the hypothetical figure. In contrast, participants who read the low-power scenario should evaluate the hypothetical figure more powerful than themselves. Ideally, the power manipulation should not result in significant differences in other variables (i.e. liking and realism) across scenarios.

A one-way ANOVA with condition as IV and power as DV was performed. Analysis revealed that the power manipulation in messages was appropriately perceived: the HBV carrier in the high power condition ($M = 5.69_a$, $SD = 0.82$) was judged as significantly and substantially more powerful than the carrier in low power ($M = 4.53_b$, $SD = 0.94$) and control conditions ($M = 3.65_c$, $SD = 0.90$), F (2, 57) = 26.38, $p < .001$, $\eta^2 = .48$. A one-way ANOVA with condition as the IV and liking as the DV was performed. Mean scores of liking were significantly different across conditions, F (2, 57) = 4.48, $p < .05$, $\eta^2 = .14$. Tukey post hoc analysis showed that this result was mainly driven by the difference between high power ($M = 5.49_a$, $SD = 0.85$) and control condition ($M = 4.66_b$, $SD = 0.98$). There was no significant difference between high ($M = 5.49_a$, $SD = 0.85$) and low power manipulations ($M = 5.35_{ab}$, $SD = 0.97$). This result may be a function of the small cell size in the pilot test ($n = 20$). A one-way ANOVA revealed no significant difference in self-reported realism across conditions, F (2, 57) = 0.71, $p = .50$. The mean score for each condition was above the midpoint of the scale, suggesting that participants

perceived the situations described as realistic.

The results of the pilot test study provided clear support to the constructed scenarios. Participants who were randomly assigned to experimental conditions reported significant differences in power perceptions, but not in liking and realism. Consequently, the pilot test study validated the manipulations and offered the established scenarios for the main study. The goal of the main study was to examine whether power differentials between interactants would influence attitudes toward the university policy and stigma outcomes (i.e. separation and status loss).

MAIN STUDY

Participants, Procedures and Stimuli Material

Participants (n = 144) were recruited from an introductory communication course at a southwestern university in China and were offered extra credit for their participation. The data were collected through written surveys. Participants were predominantly female (64.1%), sophomores (99.3%), and rural citizens (67.4%). The majority of the current sample received vaccinations (84.4%) within the recent two years (61.2%). Only one participant was an HBV carrier and was excluded from the subsequent analysis. However, 23 out of 114 participants reported having relatives living with the disease.

The main study employed the same scenarios established by the pilot study, and replicated the procedures of power manipulation. After power priming, participants read one sentence about the hypothetical figure's HBV status (i.e. *You heard several students discussing that Prof. Wang/Xiao Wang had been diagnosed positive as a carrier for hepatitis B*). Immediately after reading the scenarios, participants responded to items assessing induced power perceptions. Then they were asked to complete three open-ended questions (i.e. *What do you think of Prof. Wang/Xiao Wang? What do you think of the Prof. Wang/Xiao Wang's behavior? What would you say to Prof. Wang/Xiao Wang?)*. Between the first and second question, participants were told that the HBV carrier (i.e. Prof. Wang/Xiao Wang) in the scenario took out two slices of bread and offered to share with them during the meeting. The questionnaire offered sufficient space so that participants could write down as many thoughts relevant to the question as they wanted. Then they responded to scales measuring liking, similarity, realism, separation, status loss, and negative affect (i.e. anxiety). The response format for all measures was a 7-point Likert scale (*1=strongly disagree, 7=strongly agree*). Finally, participants read a paragraph

describing how the HBV-infected individual was unfairly treated by the university, and indicated their attitude on a 7-point semantic differential scale. The description was held constant across the three conditions. Demographic information was collected at the end of the questionnaire.

Key Measures

The key variables in the study were subject to confirmatory factor analysis (CFA) using *R.* A centroid algorithm was employed to estimate factor loadings, and internal consistency theorem and parallelism analysis were performed to test the model fit. The internal consistency theorem was employed to generate the predicted correlation among items in one factor, and the parallelism theorem was used to generate the predicted correlations among items of different factors (Hunter & Gerbing, 1982). Predicted correlations were then compared with corresponding obtained correlations, based on which residuals were calculated. The establishment of a measurement model requires both ample factor loadings and reasonably small residuals. Predicted correlations and item residuals for each variable are given in Appendix B. All the measures in the current study are presented in Appendix A.

Power differential. Power, as a key independent variable, was manipulated through the message inductions. Five items were developed to assess induced power perceptions, and were found to be unidimensional (RMSE = .05). The Cronbach alpha was .88. Sample items included: *not prestigious/prestigious, powerless/powerful and low/high status.*

There were two covariate measures: liking and similarity.

Liking. Four items were used to assess personal liking about the infected individual. They were shown to be unidimensional (RMSE = .03), and highly reliable (α = .88). Sample items included: *unfavorable/favorable* and *not warm-hearted/warm-hearted*.

Similarity. Adapted from McCroskey, Richmond, and Daly's (1975) attitude homophily

scale, four items assessed perceived similarity with the infected individual. CFA lent support to the unidimensionality of the scale (RMSE = .05). The Cronbach alpha was .88. Sample items included: *different from me/similar to me, unlike me/like me* and *doesn't behave like me/behaves like me.*

This study included six dependent measures: levels of construal, separation, status loss, anxiety, attitude toward the university policy, and depth of information processing.

Levels of construal. Construal level in the current study was assessed in two ways widely used in the literature. First, following Joshi and Wakslak's procedure (2014), participants' descriptions of their impression about the HBV carrier and his behavior (i.e. sharing food with the uninfected) were coded as either abstract or concrete by two independent raters blind to the hypotheses and research questions. Adapted from Joshi and Wakslak (2014), descriptions were coded as abstract if they were about general or universal traits of the infected, offered reasons why the uninfected individual thinks of the disease carrier, or included general expressions of encouragement and attitude. Descriptions were coded as concrete if they were about the factual information about the disease (e.g., transmission route, symptoms), or dealt with how the disease carrier should behave to improve health or to interact with the uninfected, or included discussions of impressions depending on specific situations. Messages that fell into neither abstract nor concrete category were assigned to the uncodeable category. The intercoder reliability (Cohen's Kappa) was .88 for impression about the disease carrier, and .84 for impression about the action. The corresponding percentage of agreement was 94% and 91% respectively (See Appendix C for descriptions of abstract, concrete and uncodeable messages).

Second, using *the Linguistic Categorization Model Manual* (LCM manual; Coenen, Hedebuow, & Semin, 2006), two coders independently coded the number of adjectives, and the

number of state verbs. According to LCM, adjectives refer to "qualities or properties of a person" whereas state verbs refer to "mental and emotional states or changes therein" (p. 6). The LCM defined adjectives and state verbs as the most abstract linguistic categories (see Coenen et al., 2006, p. 10-11). The intercoder reliability for four categories ranged from .80 to .91, with the percentage of agreement ranging from 89% to 94%. A composite index for lexical abstractness was created by adding up the number of adjectives and state verbs describing the person and the action respectively.

Separation and status loss. Stigma towards chronic HBV carriers was adapted from Shi et al.'s, (2013) hepatitis B virus-related stigma scale (HBV-SS). The HBV-SS contains seven items assessing separation, and five items assessing status loss. The scale was demonstrated to be reliable, with .85 for Cronbach's coefficient. The construct validity was examined and yielded strong evidence (GFI = .93, CFI = .93, TLI = .91, RMSEA =.05). In order to link stigma measurements with power priming, the word "HBV carriers" in the original items were replaced with the names of hypothetical individuals described in the scenario. From example, the item *I would feel uncomfortable if I had an HBV carrier classmate* in the original HBV-SS was adapted to read as *I would feel uncomfortable if I had an HBV carrier advisor.* Items that could not be adapted in this way were deleted from the current study. Additional items were modified and extracted from Bresnahan and Zhuang's (2010) HIV/AIDS stigma scale and Colter et al.'s (2012) HBV stigma scale for Chinese immigrants. The resulting working scale for the current study consisted of five and four items respectively for separation ($\alpha = .77$) and status loss ($\alpha = .78$). As expected, CFA results showed that one factor model was rejected (RMSE=.11), and the two-factor model was acceptable (RMSE = .06). Sample items for separation included: a) I would not be willing to have close contact with Prof. Wang/Xiao Wang (e.g., having meal

together with separate dinner set, shake hands); b) I would stay away from Prof. Wang/Xiao Wang who has chronic HBV. Sample items for status loss included: a) The university should not hire Prof. Wang/Xiao Wang who has chronic HBV; b) HBV reduces Prof. Wang/Xiao Wang's influence. The higher score indicated stronger stigma with respect to separation and stigma one holds against HBV carriers.

Anxiety. Four items measured participants' anxiety when they were in contact with HBV carriers. The scale was reliable ($\alpha = .93$), unidimensional (RMSE = .06) and sample items included: a) *I am anxious about being infected with HBV after coming into contact with Prof. Wang/Xiao Wang*; b) *I feel uneasy when interacting with Prof. Wang/Xiao Wang who lives with the disease.*

Attitude towards the university policy on HBV carriers. Six 7-point semantic differential items from Nabi (2002) were used to assess participants' attitudes towards the university policy against HBV carriers. They were: unacceptable/acceptable, unfavorable/favorable, wrong/right, negative/positive, foolish/wise, unnecessary/necessary. The scale was unidimensional (RMSE = .03) and highly reliable ($\alpha = .95$).

Depth of information processing. Following Ledgerwood, Trope, and Chaiken (2010) processing depth was measured by the number of words written in response to the open-ended questions. As a more stringent approach, the current study counted words respectively for four indicators of the processing depth: namely the number for impression about the HBV carrier, for impression about the carrier's behavior, for composite impression, and for the actual message production. Strong evidence for Ledgerwood et al.'s study should be null differences in the number of words across all four indicators.

Results

Manipulation Check

The power induction analysis with a one-way ANOVA indicated that there was a significant difference across conditions, F (2, 141) = 44.34, $p < .001$, $\eta^2 = .39$. Tukey post hoc analysis showed that participants in the low-power condition ($M = 2.48_a$, $SD = 0.93$) rated themselves less powerful than participants in the high-power ($M = 4.15_b$, $SD = 1.24$) and control conditions ($M = 4.32_b$, $SD = 0.94$). Although power was not evoked at a level significantly higher than the scale mid-point in high power manipulation, t (59) = 0.96, $p > .05$, the self-report power index was significantly lower than the scale mid-point in low power conditions, t (54) = -12.11, $p < .01$. Three one-way ANOVAs were conducted to check whether the scenarios induced different ratings on liking, similarity, and realism across conditions. The results showed that there were no differences with respect to liking (F (2, 141) = 1.09, $p >.05$), similarity (F (2, 141) = 1.29, $p >.05$), and realism (F (2, 140) = 1.25, $p >.05$). In addition, a one sample t-test showed that the scenarios were seen as highly realistic, t (142) = 7.93, $p < .01$. All the mean scores and standard deviations by condition are reported in Table 4.1. These results confirmed a significant difference in power inductions between the two experimental groups. However, the current data should be interpreted with cautions given the null difference in power index between high power and control conditions.

Table 4.1 Means and Standard Deviations

	High-Power *n = 60*	Low-Power *n = 55*	Control *n = 29*
Power	4.15 (1.24)	2.48 (0.93)	4.32 (0.94)
Liking	5.39 (1.10)	5.55 (1.25)	5.16 (1.09)
Similarity	3.66 (1.33)	4.02 (0.17)	3.78 (0.16)
Anxiety	3.74 (1.42)	3.52 (1.33)	3.27 (1.19)
Separation	3.64 (1.22)	3.17 (1.02)	3.63 (0.91)
Status Loss	3.33 (1.21)	3.31 (1.18)	3.38 (0.93)
Attitude	4.14 (1.51)	3.45 (1.42)	5.33 (1.14)
Realism	4.78 (1.17)	4.83 (1.06)	4.45 (1.06)

Notes: SD are offered in parentheses.

Correlations

A series of bivariate correlations were conducted and results are presented in Table 4.2. Power was positively correlated with the attitude toward the university policy against HBV carriers, r (142) = .18, $p < .05$. That is, an elevated sense of power over HBV carriers was related to an increasing tendency to agree with the university's segregation policy. Liking was negatively correlated with anxiety (r (142) = -.28, $p < .01$), separation (r (142) = -.27, $p < .01$) and status loss (r (142) = -.39, $p < .01$). Similar to liking, the degree of similarity with the hypothetical HBV carrier was found to be negatively correlated with anxiety (r (142) = -.21, $p < .01$), separation (r (142) = -.18, $p < .05$), status loss (r (142) = -.19, $p < .05$), and attitude toward the discrimination policy (r (142) = -.18, $p < .05$). Unsurprisingly, anxiety about being infected with HBV was positively and strongly correlated with stigma outcomes (r (142) = .58, $p < .01$ for separation and r (142) = .60, $p < .01$ for status loss) and attitude toward the policy, (r (142) = -.26, $p < .01$).

Table 4.2 Reliabilities and Zero-Order Correlations

	Power	Liking	Similarity	Anxiety	SEP	Sloss	ATT
Power	.88						
Liking	-.04	.88					
Similarity	-.04	.31**	.88				
Anxiety	.00	-.28**	-.21*	.93			
SEP	.02	-.27**	-.18*	.58**	.77		
Sloss	-.05	-.39**	-.19*	.60**	.60**	.78	
ATT	.18*	-.12	-.18*	.26**	.33**	.40**	.95

Note: *df = 142*. Reliabilities of the measurements are given on the diagonal. SEP = separation; SL = status loss; ATT = attitude towards the university policy
*$p < .05$. **$p < .01$.

Hypothesis Testing Analysis

Hypothesis 1 predicted that power holders should form impressions about the disease carrier at higher level construal than the powerless. Specifically, it was expected that participants in high power conditions should generate more abstract but less concrete messages than participants in low power conditions when describing their impressions about the disease carrier and the behavior (i.e. sharing food). A chi-square test was performed to test whether the power manipulation affected the global coding of the message abstractness. No significant results were found for both impression about the disease carrier (χ^2 (2, N = 114) = 1.49, n.s.) and impression about the action (χ^2 (2, N = 111) = 1.15, n.s.). Participants' descriptions of their impression on the disease carrier were predominantly abstract (73% in high power, 76% in low power, and 61% in control condition). When it comes to impression about the action, the percentage of abstract messages dropped to 62% in high power and 57% in low power condition. Unexpectedly, this number increased to 72% in control condition.

In addition, H1 posited that power holders' descriptions about the person and the behavior should have higher level of lexical abstractness (i.e. more adjectives and state verbs) than powerless participants' descriptions. Liking and similarity were found to be unrelated to both dependent variables, and thus were not included as covariates. Two one-way ANOVAs were used to test the hypothesis. A main effect for power was found for description of the person, F (2, 139) = 9.69, $p < .01$, $\eta^2 = .12$, but not for description of the behavior, F (2, 139) = 0.51, $p > .05$. Tukey post-hoc analysis showed that, opposite to the prediction, participants in low power conditions used more adjectives and state verbs to describe their impression about the HBV carrier ($M = 2.13_a$, SD = 1.97) than those in high power ($M = 1.13_b$, SD = 1.33) and control conditions ($M = 0.72_b$, SD = 0.88). Thus, the data were inconsistent with hypothesis 1.

A series of one-way ANCOVAs with condition as an IV were used to test H2 and H3. According to the correlation matrix (see Table 4.2), both liking and similarity were moderately related to the key dependent variables, and therefore were included as covariates.

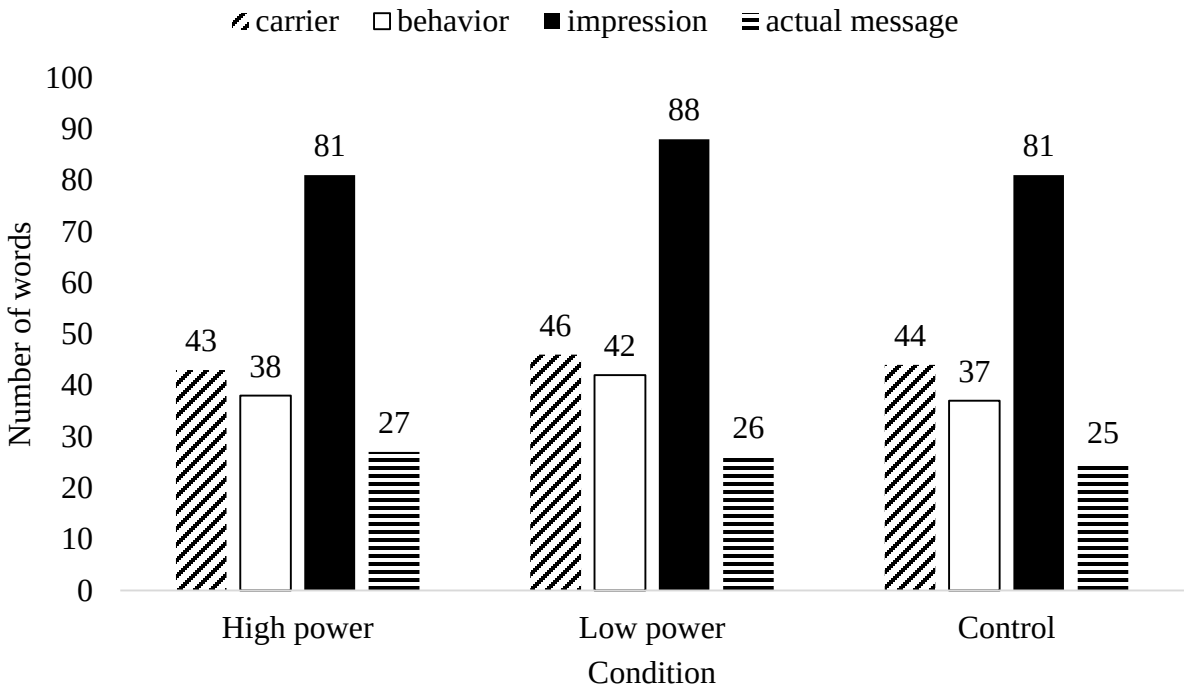
Hypothesis 2 posited that power should prompt stronger stigmatic responses toward the HBV carriers. That said, the power holders should show a higher level of agreement with separation and status loss, as compared to the powerless. No significant main effects of power were found for both separation, F (2, 139) = 2.34, $p > .05$, and status loss, F (2, 139) = 0.09, $p > .05$. Despite the null main effects of power, the pattern of mean scores was in the direction as predicted. Specifically, the powerful agreed more with separation statements (M = 3.64, SD = 1.22) than the powerless (M = 3.17, SD = 1.02). This pattern disappeared in status loss. These results suggest that the data were not consistent with hypothesis 2.

Hypothesis 3 predicted a main effect of power on attitude toward the university separation policy. It was expected that the powerful should hold more positive attitudes toward the segregation policy than the powerless. Consistent with the hypothesis, participants in high-power conditions (M = 4.14, SD = 1.51) expressed more agreement towards the segregation policy compared to participants in the low-power condition (M = 3.45, SD = 1.42), F (2, 139) = 15.95, $p < .01$, $\eta^2 = .18$. Interestingly, participants in the control condition (i.e. condition without power priming) reported the highest level of agreement with the discrimination policy among all three groups (M = 5.33, SD = 1.14), indicating that college students in the current sample generally supported a university policy to isolate HBV carriers from the healthy population.

Research question 1 explored whether there were differences in the processing depth across conditions. Both PAC and PAA predicted that the powerful should process information heuristically and the powerless should process information centrally, while the CLT posited that

power differentials would not influence the magnitude of elaborations. When the depth of information processing was operationalized as the number of written words, four one-way ANCOVA (with power as the independent variable and liking and similarity as covariates) did not yield any significant findings. The mean scores of the processing depth are reported in Figure 4.1. The data were consistent with CLT's prediction.

Figure 4.1 Processing Depth Assessed with the Number of Words



Post Hoc Analysis

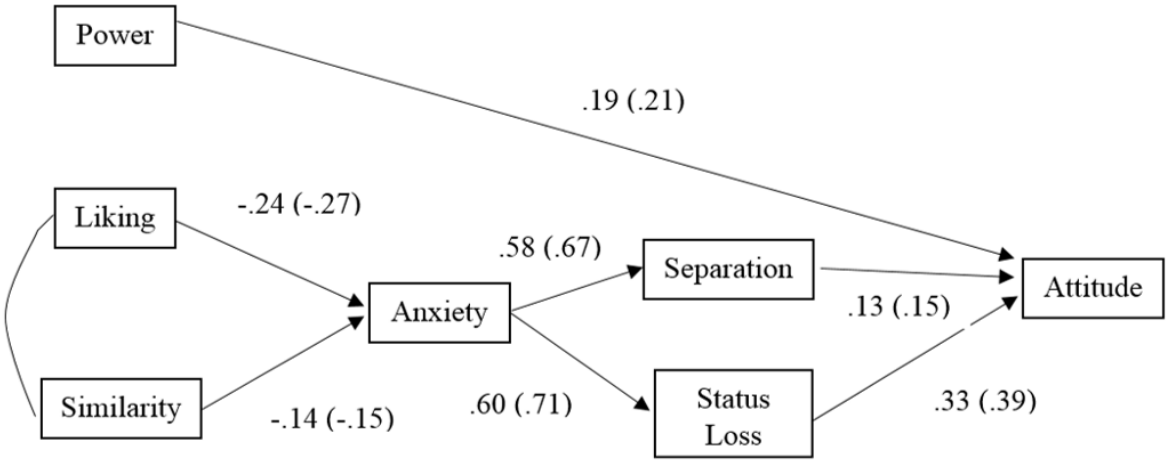
In the results of ANCOVAs for hypothesis 2, liking was found to be a significant predictor for both stigma outcomes. In order to further investigate the effects of liking on the stigma variables controlling for power and similarity, two hierarchical linear regressions were performed. Following the procedure specified by Aiken and West (1991), three variables (i.e. liking, power and similarity) were mean centered. Employing hierarchical linear regression analysis, power and similarity were included in the first block. Liking was entered to the second

block. The analysis showed that overall models were significant for both separation, F (3, 140) = 4.29, $p < .01$, adjusted $R^2 = .06$, and status loss, F (3, 140) = 8.85, $p < .01$, adjusted $R^2 = .14$. Taking all three variables into account, liking significantly predicted separation (standardized coefficient, $\beta = -.236$, $t = -2.78$, $p < .01$) and status loss ($\beta = -.366$, $t = -4.49$, $p < .01$). That said, participants who liked HBV carriers more were more likely to disagree with stigma statements.

According to the correlation matrix, the data seemed to suggest the following path model as specified in Figure 4.2. People who perceived more similarity with and liking for the hypothetical HBV carriers should feel less anxious about being infected with the disease. Subsequently, less anxiety leads to less agreement with separation and status loss, which then results in stronger disagreement with the segregation policy. In addition, attitude toward the university segregation policy was also shaped by power differentials between stigmatizers and the stigmatized. That said, an elevated sense of power is expected to encourage support of structural discrimination by the university.

To test the causal model presented in Figure 1 scatterplots were examined initially to ensure that no apparent deviations from linearity were found for any of the bivariate correlations. Then the ordinary least squares (OLS) criterion was employed to estimate the parameters. As noted, the correlations used to estimate the size of parameters and the test of the fit of the model was presented in Table 4.2. The path coefficients are given in the Figure 4.2.

Figure 4.2 Path Model with Path Coefficients and Path Coefficients Corrected for Attenuation and Measurement Errors



Note: Parameters corrected for continuation and measurement error were offered in the parentheses.

As noted from Figure 4.2, there are seven variables in this model, and therefore twenty-one correlations may be obtained. The model is over-identified by eleven. The path coefficients were corrected for attenuation (as shown in the parentheses in Figure 4.2), and all of the coefficients except for the path linking separation and attitude were significantly different from zero. The differences between predicted and obtained correlations for all unconstrained bivariate correlations were examined, and errors were given in the Table 4.3. The global test for goodness of fit indicated that the data were consistent with the predicted model [$\chi^2(11) = 7.89$, $p > .05$]. It should be noted that the nature of the survey did not establish time order between variables, and therefore alternative models cannot be eliminated. Generally speaking, the data also were consistent with the reverse model as well as the model that included one or more spurious relationships.

Table 4.3 Errors for Path Coefficients

	Power	Liking	Similarity	Anxiety	SEP	Sloss	ATT
Power							
Liking	.00						
Similarity	.00	.00					
Anxiety	-.01	.00	.00				
SEP	.01	-.11	-.06	.00			
Sloss	-.06	-.22	-.06	.00	.25		
ATT	-.02	-.04	-.11	-.02	.09	.02	

Open-ended data were further explored in the post-hoc analysis. A dichotomous coding of participants' actual messages was conducted. Participants who accepted the bread from the HBV carriers were assigned to zero, while those who refused were assigned to one. A binary logistic regression was employed to investigate the influence of power, liking and similarity on whether the uninfected accept or reject to share bread with the HBV carriers. Results showed that the overall model including three key independent variables was statistically significant, χ^2 (3, N=144) = 11.31, $p < .01$, Cox & Snell R^2 =.08, Nagelkerke R^2 = .11, with a 69.4% of correct prediction. Similarity (B = -.41, Wald = 5.77, $p < .05$) and power (B = .30, Wald = 4.67, $p < .05$) were found to be significant predictors of the dependent variable. That is, the more similar an uninfected individual feels with the HBV carrier, the more likely he or she would agree to share food with the infected other. Although 55% of participants in the low power condition refused to eat bread from an HBV carrier, the number increased to 80% for participants in the high power condition. Reasons why participants refused food from the HBV carriers were also coded. Three dominant themes were extracted from the data: 1) *I am not hungry* (n = 46.7, 46.7%); 2) *I don't like bread* (n = 30, 33.3%); 3) *HBV may spread through sharing food* (n = 13, 14.4%).

DISCUSSION

This study performed multiple functions. First, it was designed to empirically examine predominant assumptions with respect to the relationship between power and stigma in an interaction with an HBV carrier. Second, it aimed at testing whether the power differential, within the framework of construal level theory, triggers differences in the levels of mental representation of the stigmatized person and his actions. Finally, it served as an attempt to seek insights for designing interventions that take structural-level causes of stigma and stigmatization into account. The following discussion will be organized around these three themes.

Perhaps the most interesting finding from this research was that power appeared to be unrelated to two stigma outcomes: separation (r = .02) and status loss (r = -.05). Regardless of relative power status with the disease carrier, the uninfected participants moderately disagreed with statements about separation and status loss. The null influence of power on stigma outcomes can be accounted for by both theoretical and methodological explanations.

Theoretically, different types of power may have opposite rather than parallel effects on stigma. Power is far from a monolithic concept (Fiske & Berdahl, 2007), and power relations vary at the individual, group and societal levels. One analysis pertinent to the current study is the distinction between personal and social power. Personal power refers to the ability to control one's own action and freedom from other's influence, and therefore is associated with independence. In contrast, social power deals with the ability to control other's desirable outcomes, and is associated with responsibility and interdependence (Fiske & Berdahl, 2007). This conceptual distinction between personal and social power has also been examined by a number of studies (e.g., Lammers, Stoker, & Stapel, 2009; Overbeck & Park, 2006, person-centered vs. less-person-centered power). Given that personal and social power are differentially

associated with independence and interdependence, it is possible that each may have a unique effect on stigma. Specifically, when people have personal power to set their own agendas and define life outcomes, they may not need to invest resources to make accurate predictions about others, and therefore are likely to form impressions based on simple and over-generalized categories (e.g., infected or not). Linking disease carriers with potential threats to desirable outcomes, personal-power holders may incline to either withdraw themselves from future exposure, or individuate and ostracize the infected. Either of the tendencies contribute to stigma with respect to separation and status loss. In contrast, people with social power (i.e. power given by hierarchical status) may feel accountable to others under control because their exercise of power partly depends on the performance of subordinates. The sense of responsibility may motivate social-power holders to carefully look into the costs and benefits of the powerless, and thus decrease the reliance on simplified categories in impression formation (Lammers et al., 2009). That said, they may still stigmatize the infected individuals if the latter pose a threat to the intactness of the group, but the magnitude of stigma may be counteracted by multiple facets of an infected individual (e.g., personal contributions) rather than health status only.

If the above deduction about the opposite effects of personal and social power on stigma is correct, the lack of main effects of power on stigma in the current study should not be surprising. In high power conditions where participants served as student consultants, they were capable of controlling advisee's outcomes while maintaining their own independence. Therefore, participants in the high power condition may have felt powerful both socially and personally. Although personal power may increase stigma against the disease carriers, an elevated sense of social power may cancel out the effects. The cancelling effects may also occur in low power conditions where participants counted on their advisors' recommendation (personally powerless)

and were not responsible for other's behavior (socially powerless). A decrease in stigmatic cognition due to a personally powerless perception may be reversed by a low social power status. Future studies should empirically parse out the effects of different types of power on stigma.

Equally possible, the null findings between power and stigma may have methodological roots. Because of the social unacceptability of engaging in stigma toward others, it is difficult to induce strong stigma against disease carriers even when respondents are under severe risks of being infected (e.g., Bresnahan and Zhuang, 2011; Major, Hunger, Bunyan, & Miller, 2014). Disclosure of stigmatic responses toward the infected is socially disapproved, and inferences and punishments will be made upon those who publicly deliver derogatory comments against others. Therefore, participants tend to "mask anti-social behavior" by under-reporting the magnitude of their stigmatic responses. For example, Bresnahan and Zhuang (2011, Study 1) examined HIV-related stigma among college students. The mean scores for five dimensions of stigma were clustered around the mid-point of scale (range: 2.18 — 3.31). Similar to the current study, the means for separation (M = 2.55) and status loss (M = 2.88) were below three on a five-point Likert scale. The absence of strong response to stigma poses difficulties in obtaining variations for hypothesis testing. Bresnahan and Zhuang's (2011) Study 2 boosted the stigmatic responses with an experimental scenario in which participants were asked to imagine their former intimate partner who had numerous sexual partners during the relationship had been diagnosed as HIV positive. This induction successfully elevated the magnitude of stigma to a level (M = 3.90) significantly higher than the mid-point. Given that the current study focused on the effects of power differentials on stigma, stigma inductions were intentionally avoided before the measurements. Indeed, the main effects of power on attitude toward the university policy (r = .18) and on whether participants refuse to share food with the infected (r = .18, β = .33) may lend

some support to the methodological explanation. It suggests that stigma may be more likely to be exhibited in actual behavior than in self-report assessments. Future studies should try to include actual behavior as indicators of stigma (see, for example, Major et al., 2014).

One point worth noting is that the findings should not be over-interpreted as counter evidence of Link and Phelan's (2001) presumption that power differential generates and persists stigma. What Link and Phelan argued instead was, from a sociological perspective, the emphasis on stigmatization as a process of hegemony "achieved via a complex interlocking of cultural, economic and political forces which organize dominant meanings and values across the social field" (Parker & Aggleton, 2003, p.18). Rooted in cognitive-behavioral traditions, this study, however, examined whether an individual's possession of power, no matter where it originated, changed stigma against people living with the infectious disease and their attitudes toward the institutions' segregation policy. A full test of Link and Phelan's claim about the centrality of hierarchical equalities and social order in maintaining stigma is beyond the scope of this study.

A second goal of this study was to examine if power relations influenced levels of mental construal in the same way as predicted by the CLT. It was expected that participants primed with high power should describe their impression about the powerless disease carrier more abstractly than those primed with low power (*H*1). The only difference found was the level of abstractness, assessed by the number of adjectives and state verbs, in the description of the person. The finding was opposite to the prediction in a way that the powerless produced more abstract words than the powerful. No significant results were observed in the global coding of the message abstractness and the number of abstract words for describing the action.

These findings, at first glance, may seem to contradict results of other CLT-guided studies, which demonstrated that distant objects are construed at a high and abstract level (e.g.,

Bar-Anan, Liberman, and Trope, 2006; Libby & Eibach, 2002). Several possible reasons may account for the results of this study. First, most studies testing CLT used tasks associated with no social consequences, and thus may not be comparable to a design using real life scenarios. A typical experiment of CLT was that participants were asked to imagine performing a routine activity such as rock climbing and house moving either from a psychologically distant (e.g., third person, one year later) or a proximal perspective (e.g., first person, tomorrow). Then participants were instructed to self-report how detailed and vivid the imagined activity was (e.g., Libby & Eibach, 2002). Tasks of this type are context-free and involve zero social punishment because participants' description of their own activity, whether in abstract or concrete terms, may lead to no risks of negative attribution and deprivation of life chances. However, this may not be the case in real life situations, especially with power differentials, where the words you say and the way you behave are closely connected with desirable outcomes. In the current scenarios, even students' neutral but concrete comments on a professor's health status will be viewed as disrespectful and offensive. On that basis, it makes sense why around 75% of participants across conditions preferred to describe their impressions abstractly. This explanation was further supported by the finding that participants in low power conditions used more abstract terms (i.e., adjectives and state verbs) in their description than power holders.

In addition, a number of studies (e.g., Liberman et al., 2002; Smith & Trope, 2006) employed instruments that only indirectly measured the level of abstractness. As an initial attempt to test CLT, Liberman et al., (2002) conducted four experiments and found that with an increase of psychological distance, participants categorized objects and events into boarder groups (Study 1) and simpler structures (Study 4). They concluded that such first-order features (e.g., number and breadth of categories) confirmed the influence of psychological distance on the

mental abstractness. However, stronger support for this conclusion requires convincing evidence that clearly shows first-order features, such as the number and breadth of category measure mental abstractness and nothing else. Put differently, failure to demonstrate that categorical breadth and depth only lend themselves to mental abstractness but not other concepts may weaken the claim of CLT. However, this is a difficult task. One example is that depth and breadth of category are also used as indicators of cognitive complexity (Crockett, 1965; O'Keefe & Sypher, 1981). In Crockett's Role Category Questionnaire (RCQ), participants were asked to write their impressions about a liked peer and a disliked peer, and then the number of different categories they used to describe the person was counted. Higher cognitive complexity was indicated by more breadth and depth of categories. Moreover, O'Keefe and Sypher (1981) found that Crockett's RCQ was only moderately correlated with Harvey, Hunt, and Schroder's (1961) interpersonal concreteness-abstractness scale (r = -.06), indicating that the breadth and depth of category may measure several cognitive constructs rather than mental abstractness only. Given that the establishment of the first-order variables (e.g., breadth of category) does not necessarily mean that they unanimously reflect the same over-arching construct (abstraction in this case), more research that employs direct measurements of abstract and concrete thinking are needed (Joshi & Wakslak, 2014).

Finally, the null difference of power on the global coding of message abstractness may also have been eroded by moderately strong liking (M = 5.33) about the hypothetical figure. According to CLT, liking functions as a form of social distance such that strong liking triggers socially proximal perception (Trope and Liberman, 2010). It is possible that psychological distance created by power manipulations was washed away by interpersonal liking, and therefore produced few or small effects on abstract thinking. An interesting future direction should look at

how the levels of mental construal change when multiple dimensions of psychological distance are salient.

The ultimate goal of stigma research is to feed into the development of effective interventions that alleviate the deleterious effects of stigma on both individuals and communities. Similar to most conceptual and empirical discussions in the literature, previous interventions designed to combat stigma have been conceived as more an issue of false beliefs and incorrect understanding on the disease than as a matter of structural causes such as power and inequality (Parker & Aggleton, 2003). For example, HIV campaigns employed emotional appeals to induce stigmatizers' moral awareness and have them self-correct socially disapproved behavior. Given the relationship between limits on personal freedom and attitude change predicted by psychological reactance theory, the campaign produced little or sometimes even counterproductive effects on mitigating stigma (Smith, 2011). Mixed outcomes were also recorded in educational and social marketing approaches where knowledge-based campaigns only made a short-lived improvement and did not stop the vicious "cycle of stigma" (e.g., Sartorius, 2000). As Sayce (2003, p. 633) pointed out, most anti-stigma campaigns did not draw enough distinctions between "interventions that hit major drivers of discrimination, by addressing power, and those that simply ameliorate the positions of a number of individuals." While individual-based approaches to reduce stigma may play an important role, more investment in macro-perspectives of stigmatization may bear some hope to change stigmatizing attitudes because stigma, by nature, operates not through individual physical force, but through the systematic "production of conforming subjects and docile bodies" (Parker & Aggleton, 2003, p. 17). To that end, future research should investigate ways to replace predominant cultural stereotypes (See Sayce, 2003) and incorporate insights from research on community mobilization

(See an initial empowerment program in Parker, 1996; and a recent *Connect to Protect*[@] intervention in Ziff et al., 2006).

LIMITATIONS

No studies are without limitations. The primary weakness in this study is the failure of high power manipulation. Although power inductions were successful in pilot test study, power index in the main study was not significantly different between high power and control conditions. One interpretation for this failure may relate to the change of institution where data were collected. Pilot test data was collected in a prestigious university of the province whose students were admitted after a very competitive entrance exam. Students who stood out in the fierce competition might feel confident and had inflated power perceptions. Given that an unexpected terrorism attack in the city postponed the spring semester at this institution, the data for the main study had to be collected in a community college where students might not rate themselves as powerful as expected. In addition, the sample in the pilot test institution were predominantly juniors (93.1%) while 99.3% of the participants in the main study were sophomores. Such changes may have lead to a much lower power index in the high power condition (M = 2.48) of the main study, as compared to that of the pilot study (M = 5.69).

Another limitation of the study is about the measurement of stigma. As shown in the CFA results, factor loadings for separation items ranged from .57 to .68, and from .45 to .88 for status loss items. Although the items were adapted from validated stigma scales, there were great variances among the factor loadings, and some items were not strong predictors of theoretical trait variables. Indeed, conceptual ambiguities between different dimensions of stigma and the consequent difficulties in developing valid measurement are not uncommon in the literature (Berger, Ferrans, & Lashley, 2001; Bresnahan & Zhuang, 2011). Given that measurement errors are costly for theory construction and empirical studies, future stigma research should spend more efforts in developing conceptually clear scales, and test the factor structure with the

population of interest.

Finally, this study was limited in exploring the open-ended data to test the abstraction hypothesis. This is partially attributable to ambiguous definitions of abstract and concrete thinking, and the lack of conceptual guide to code the data. Following Joshi and Wakslak's (2014) method, the current still left around 35% of data that did not fall into any proposed coding categories. It is possible that these uncodeable data included sufficient amount of abstract, concrete or mixed information to change the direction of the findings. Therefore, current evidence related to the level of construal should be interpreted with caution.

APPENDICES

Appendix A

The powerless condition

Prof. Wang is currently an Associate Professor at Yunnan University of Finance and Economics. Prof. Wang shares an office with a colleague. Prof. Wang is your advisor. Prof. Wang enjoys good academic and professional reputation in the field. Prof. Wang is also very popular and well-liked by students and colleagues. Due to extensive knowledge and experience, you respect Prof. Wang's opinion on academic and career development. Whenever you have any questions on your major or career choice, Prof. Wang is always very patient to respond to your queries. Last week, you learned that Prof. Wang was appointed as a chief consultant in the company you are eager to apply for after graduation. Prof. Wang is powerful and influential in the company. Prof. Wang's recommendation is very important to you since it is highly likely to warrant you a good position with competitive salary.

The power-holder condition

Xiao Wang is currently a freshman at Yunnan University of Finance and Economics. Xiao Wang lives in a dorm with five other students. You are assigned to serve as Xiao Wang's student consultant by the department. You are responsible for guiding Xiao Wang on course selection and answering questions about the major and college life. Because of your guidance, Xiao Wang is very popular and well-liked by other students. You also have the right to influence Xiao Wang's rewards and punishments at the end of each semester by reporting your evaluation on his academic performance and extra-curriculum participation to the department. Due to your power and influence, Xiao Wang often takes your advice. Since Xiao Wang is new to the city, Xiao Wang respects you and seeks your recommendations on bus routes, shopping malls and local restaurants.

Control condition

Xiao Wang is currently a student at Yunnan University of Finance and Economics. Founded in 1951, Yunnan University of Finance and Economics is a multi-disciplinary university. It was named as Kunming college of Finance and Economics, and then was renamed with the approval of Yunnan provincial government. The university has a total of seventeen colleges, with programs in economics, management, law, philosophy, liberal arts, natural science and engineering. Yunnan University of Finance and Economics is located in Kunming, the capital city of the province. The main campus occupies an area of sixty eight hectors, and includes teaching buildings, libraries, university gymnasium and students' dormitories. Currently the university has over 16,000 full-time undergraduate and graduate students, with over 1,400 faculty members.

You heard several students discussing that Prof. Wang/Xiao Wang had been diagnosed positive as a carrier for hepatitis B.

Q1: What do you think of Prof. Wang?

Yesterday, you went to visit Prof. Wang at his office at noon. (Yesterday, you went to visit Xiao Wang in the dorm). After Prof. Wang/Xiao Wang learned that you hadn't had lunch yet, Prof. Wang took out two slices of bread with his bare hands and offered to share this with you.

Q2: What do you think of the situation (i.e. the infected Prof. Wang/Xiao Wang sharing bread with you with bare hands)?

Q3: What would you say to Prof. Wang/Xiao Wang?

POWER

Compared with Prof. Wang/Xiao Wang, I have/am

No power at all	___	___	___	___	___	___	___	A lot of power
Unimportant	___	___	___	___	___	___	___	Important
Not prestigious	___	___	___	___	___	___	___	Prestigious
Low status	___	___	___	___	___	___	___	High status
Not respected	___	___	___	___	___	___	___	Respected

LIKING

I think Prof. Wang/Xiao Wang is

unfavorable	___	___	___	___	___	___	___	favorable
not warm-hearted	___	___	___	___	___	___	___	warm-hearted
unpopular	___	___	___	___	___	___	___	popular
not easy-going	___	___	___	___	___	___	___	easy-going

SIMILARITY

I think Prof. Wang/Xiao Wang is

Doesn't think like me	___	___	___	___	___	___	___	Thinks like me
Different from me	___	___	___	___	___	___	___	Similar to me
Unlike me	___	___	___	___	___	___	___	Like me
Doesn't share my values	___	___	___	___	___	___	___	Share my values

SEPARATION

1. I would not be willing to have close contact with Prof. Wang/Xiao Wang (e.g., having meal together with separate dinner set, shake hands).

2. I would not share food with Prof. Wang/Xiao Wang who has chronic HBV.

3. I would stay away from Prof. Wang/Xiao Wang who has chronic HBV.

4. I would not invite Prof. Wang/Xiao Wang to social gatherings.

5. I am not willing to work with Prof. Wang/Xiao Wang.

STATUS LOSS

1. Prof. Wang/Xiao Wang who has chronic HBV should not be allowed to eat in the university cafeteria.

2. HBV reduces Prof. Wang's influence.

3. HBV makes Prof. Wang/Xiao Wang disempowered.

4. The university should not hire/admit Prof. Wang/Xiao Wang who tests positive as a carrier of HBV.

ANXIETY

1. I am anxious about being infected with HBV after coming into contact with Prof. Wang/Xiao living with the disease.

2. I feel worried about being infected with HBV after coming into contact with Prof. Wang/Xiao Wang who is a disease carrier.

3. I feel uneasy when interacting with Prof. Wang/Xiao Wang who has HBV.

4. I am nervous about being infected with HBV after coming into contact with Prof. Wang/Xiao Wang living with the disease.

Stigma Manipulation

Prof. Wang: When you went to visit Prof. Wang at his office at noon, you were surprised to discover that Prof. Wang had been moved to a small office on his own. You guessed that the university moved Prof. Wang to this new location, because of the negative health condition, so that Prof. Wang cannot have close contact with other faculty members. Prof. Wang was glad to see you but the mood was gloomy so you guessed Prof. Wang did not move willingly to this office.

Xiao Wang: When you went to visit Xiao Wang in the dorm, you were surprised to discover that Xiao Wang had been moved to a small single-person room in the dorm. You guessed that the university moved Xiao Wang to this new location, because of the negative health condition, so that Xiao Wang cannot have close contacts with other students. Xiao Wang was glad to see you but the mood was gloomy so you guessed Xiao Wang did not move willingly to this tiny single room.

ATTITUDE TOWARD THE UNIVERSITY SEGREGATION POLICY

I think the university policy on HBV carriers like Prof. Wang/Xiao Wang is:

unacceptable ___ ___ ___ ___ ___ ___ ___ acceptable

unfavorable ___ ___ ___ ___ ___ ___ ___ favorable

wrong ___ ___ ___ ___ ___ ___ ___ right

negative ___ ___ ___ ___ ___ ___ ___ positive

foolish ___ ___ ___ ___ ___ ___ ___ wise

unnecessary ___ ___ ___ ___ ___ ___ ___ necessary

DEMOGRAPHIC INFORMATION

1. Are you HBV carrier? Yes/No/Unwilling to disclose
2. Do you have any friends, relatives or family members who are HBV carriers?
3. Have you received HBV vaccination?
4. When did you receive HBV vaccination?
5. Sex
6. Where were you born? Urban vs. Rural
7. Ethnicity
8. Status: Freshman/sophomore/junior/senior/graduates

Appendix B

Table B.1 Item Correlations, Item Residuals, and Factor Loadings for Power

	Power1	Power2	Power3	Power4	Power5	*F*
Power1		-.01	.03	.05	-.07	.64
Power2	.39		.00	-.04	.05	.62
Power3	.62	.57		-.03	.00	.92
Power4	.61	.50	.78		.02	.88
Power5	.45	.55	.75	.73		.81

Note: Predicted correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) was [-.10, .10]. *N* = 144.

Table B.2 Item Correlations, Item Residuals, and Factor Loadings for Liking

	Liking1	Liking2	Liking3	Liking4	*F*
Liking1		-.01	.02	-.02	.75
Liking2	.54		-.02	-.02	.73
Liking3	.67	.62		-.01	.87
Liking4	.63	.66	.74		.87

Note: Observed correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) was [-.10, .10]. *N* = 144.

Table B.3 Item Correlations, Item Residuals, and Factor Loadings for Similarity

	Similarity1	Similarity2	Similarity3	Similarity4	*F*
Similarity1		.04	-.03	-.01	.71
Similarity2	.63		-.01	-.03	.83
Similarity3	.61	.74		.04	.91
Similarity4	.53	.60	.74		.77

Note: Observed correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) was [-.10, .10]. *N* = 144.

Table B.4 Item Correlations, Item Residuals, and Factor Loadings for Anxiety

	Anxiety1	Anxiety2	Anxiety3	Anxiety4	*F*
Anxiety1		-.01	.00	.01	.76
Anxiety2	.68		.01	.00	.91
Anxiety3	.70	.86		-.01	.93
Anxiety4	.65	.76	.77		.84

Note: Observed correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) was [-.07, .07]. *N* = 144.

Table B.5 Item Correlations, Residuals, and Factor Loadings for Separation and Status Loss

	SEP1	SEP2	SEP3	SEP4	SEP5	SL1	SL2	SL3	SL4	*F1*	*F2*
SEP1		.05	.00	-.02	-.02	.05	.04	.06	.07	**.57**	.49
SEP2	.39		-.01	.00	-.04	-.08	-.04	-.03	-.07	**.59**	.34
SEP3	.39	.39		-.01	.03	-.03	-.02	.02	-.13	**.68**	.43
SEP4	.36	.40	.44		.03	.05	.05	.01	-.02	**.67**	.51
SEP5	.35	.35	.47	.47		.03	.04	.04	-.04	**.65**	.49
SL1	.40	.28	.38	.45	.42		-.04	-.01	.05	.61	**.85**
SL2	.28	.21	.27	.33	.32	.46		.05	-.01	.45	**.59**
SL3	.24	.16	.24	.22	.25	.37	.31		-.04	.35	**.45**
SL4	.43	.30	.30	.40	.37	.79	.51	.35		.57	**.88**

Note: Observed correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) for internal consistency of SEP was [-.07, .07], for internal consistency of SL [-.07, .07], and for parallelism analysis of SEP and SL [-.08, .08]. *N* = 144. SEP = separation; SL = Status Loss.

Table B.6 Item Correlations, Item Residuals, and Factor Loadings for Attitude

	ATT1	ATT2	ATT3	ATT4	ATT5	ATT6	*F*
ATT1		.02	.01	-.02	-.03	.02	.88
ATT2	.83		.01	.00	.00	-.03	.92
ATT3	.80	.83		.01	.01	-.03	.90
ATT4	.72	.77	.77		-.01	.02	.84
ATT5	.76	.82	.81	.74		.02	.89
ATT6	.78	.76	.74	.74	.79		.86

Note: Observed correlations are in the lower triangle of the matrix, and residuals are presented in the upper triangle. The confidence interval (*P* = 95%) was [-.06, .06]. *N* = 144. ATT = attitude toward the university's segregation policy.

Appendix C

Abstract Messages:

(General or universal traits of the infected + General expressions of encouragement and attitude)

NO. 116: Professor Wang is not only *knowledgeable*, *companionable*, but also *competent* academically. China needs *talented* scholars as Professor Wang. Since Professor Wang was diagnosed as HBV positive, it is possible that we may lose a *good* teacher. I feel sorry for him. His negative health status does not influence his status and image in our mind at all.

NO. 116: 王教授不仅知识丰富，人缘好，又有学术能力。国家需要像王教授一样的人才。王教授患了乙肝疾病，有可能失去一个好老师，实在惋惜。虽患病，但一点也不影响他在我们心中的地位和形象。

(General traits of the infected + Expressions of encouragement and attitude)

NO. 216: Based on his performance in a whole semester, I think Xiao Wang is *positive* and *companionable*. In addition, he performed very well from every perspective. We cannot discriminate and stay away from him just because of his HBV status. As his student consultant, I should take care of him.

NO. 216: 从小王一学期的表现，保以看出他是个积极上进，与人团结的人，而且各方面也表现得很好，不能因为他得了这个病而远离他，歧视他，作为辅导员更多的是给他关心。

Concrete Messages:

(How to avoid being infected + Factual information about HBV)

NO. 129: Although Professor Wang was diagnosed as HBV positive, we will not be infected as long as we do not incidentally eat food with his blood. Activities such as shaking hands and

hugging will not negatively influence us. He is as *normal* as everyone. I do not discriminate him.

NO. 129: 王教授虽然患有乙肝，但只要他的血液不被我们误食，其他的一切诸如握手、拥抱对于我们是没有影响的，是和正常人一样的，我并不歧视他。

(How to interact with the infected + Discussion of impression depending on situations)

NO. 248: First of all, it was mentioned in the scenario that my knowledge of Xiao Wang's negative health status was from other students. I should first confirm the news with Xiao Wang himself to see if it is the truth. If it is the case, I will tell him to pay more attention to his own behavior, and try to avoid close contact with people around. Close contact with other may let them feel embarrassed. If Xiao Wang were a disease carrier, other people may not dare to share food with him. This will hinder the relationship between other students and him.

NO. 248:首先，材料中说的是听同学说，我会先向小王求证，同学说的是否是谣言，如果是真的话，我会让他注意形为，不要和周围的人有太过亲密的接触，别让他们感到尴尬，如果小王真的是乙肝患者的话，别人会不敢吃他给的东西，而又有碍同学关系。

Uncodeable Messages:

NO. 131: The value of life does not depend upon how long one lives, but how much contributions one has made in the limited lifespan. Professor Wang living with the HBV is still highly respected. We should not discriminate him, or deny his achievement. No one wants to be sick. Instead, we should encourage him both verbally and behaviorally, and at the same time ignore his negative health status.

NO. 131: 生命的价值不在于长短，而在于在有限的生命里，你是否有所贡献。患有乙肝的王教授仍然是“我”所尊敬的人，我们不应该用有色眼光看待王教授，不能否决王教授

的付出。没有人想患病，应该在语言、行为上鼓励他，同时忽视他的病情。

NO.223: I feel sympathetic, sad, and grieved. He was so popular and well liked by his students. Although he was diagnosed as HBV positive, we should not isolate him. We could share food and drink with him as long as we avoid touching his blood. Negative health condition is not a concern for such a well-liked professor.

NO. 223:有同情，有难过，有伤心，他作为一个那么受同学欢迎的人虽然患上乙肝，但是这不能排除他在外，该吃吃，该喝喝，只要不要有血液的交流就不会有什么问题，人嘛只要受欢迎不管你有或没有病这都不重要。

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