

# **Modeling Impression Formation Processes among Chinese and Americans**

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## ABSTRACT

This study offers the first investigation on the normative processes through which Chinese form impressions of others in social interaction. Using affect control theory and its archived sentiment data from China, I estimate the Chinese impression formation models with a new Bayesian method. I then compare the Chinese models to the impression formation dynamics in U.S. English. Results show cross-cultural commonality in the affective processing of cultural concepts, with determinants of impression formation processes being largely universal. Findings also reveal two cultural variations that align with patterns uncovered by comparative cross-cultural research: 1) the Chinese models show less rigidity in the definition of situation; and 2) across two cultural models, the balance term has opposite effects on actor and behavior evaluation. To explore the implications of the impression models, I present a series of simulations, illustrating the predictive power of affect control theory as well as the impact of different cultural rules on social interaction.

**Keywords:** affect control theory, impression formation, cross-cultural

## INTRODUCTION

On September 22, 1975, Oliver Sipple, an ex-marine, became a hero when he foiled an assassination attempt on President Gerald Ford. The police and the media immediately commended Sipple for his action at the scene. The day after the incident, two of Sipple's friends who are also gay activists outed him to the *San Francisco Chronicle*, hoping that Sipple's action would break the stereotype of homosexuals being "timid, weak, and unheroic figures." Yet, things did not go as planned. After Sipple's sexual orientation was made public, he was besieged by reporters as well as by his family. Reporters labeled Sipple the "gay ex-marine," and his mother disparaged and disowned him. Sipple died of pneumonia at the age of 47 in his apartment alone (Rangel, 1989, February 4).

How do we form impressions of others in social interaction? To what extent do widespread sentiments about identities and behaviors change as a result of an interpersonal event (e.g., a gay man saves the president)? An extensive line of research in the affect control theory tradition documents the normative processes through which we form impressions of others in the context of an event (Britt & Heise, 1992; Rogers, 2018; Schröder, 2011; Smith-Lovin & Heise, 1988). Of the major principles identified by prior research, one is that people perceive individuals with a stigmatized identity as relatively unpleasant no matter what they do to others. It is also expected that actors do nice things to nice others and perform harsh acts toward bad others. Empirical evidence also shows that those normative processes are widely shared among people from Canada, the United States, and Germany. It is unclear, however, whether these normative processes differ in non-English speaking, collective-oriented societies like China (for exception, see Kriegel et al., 2017; Robinson et al., 2020; Smith et al., 1994).

In this paper, I analyze an archived Chinese impression dataset and examine how culturally specific or universal the impression formation processes are between Chinese and U.S. English. In what follows, I review three areas of literature that begins with a synopsis of affect control theory, a social psychological theory of how identities, social actions and emotions are interacted (Heise, 1979, 2007). I argue that the engine of the theory—impression formation processes, warrants further investigation in non-English speaking, collectivist cultures. To foresee potential cross-cultural differences in how people form impressions of events as they unfold, I turn to the work of Hofstede (1980, 2001) and Inglehart (1997) where they classify national cultures into distinct dimensions. Before moving to results, I provide a brief overview of various techniques that have been used in impression studies, introducing the new Bayesian method advocated by Morgan et al. (2016). I conclude this paper with a series of simulations, exploring the implications of cross-cultural variations in impression-change dynamics.

### **AFFECT CONTROL THEORY**

Affect control theory arises from the tradition of symbolic interactionism (e.g., Mead, 1934; Blumer, 1969). However, the theory sets itself apart from the classic symbolic interactionism in two important ways (Heise, 1979; 2010). First, instead of viewing culture as a meaning-making process that is always fluctuating, affect control theory postulates the persistence of culture and delineates a set of mathematic models that describe how cultural meanings towards identities, behaviors, and emotions are brought into social interaction. Second, it rests on the idea that people sustain cultural order by collectively maintaining meanings of cultural concepts during social interactions. To understand how people plan for, interpret, and redefine interactions, affect control theory formulates its arguments in three parts—sentiment measurement, impression-change equations, and mathematical minimization principles.

### *Sentiment Measurement*

As a theory linking culture to social actions, the theory begins with the assumption that labels of cultural representation carry widespread connotative meanings that reflect the emotional weight of a word (Heise, 1979, 2007, 2010). In particular, every cultural concept (e.g., mother, kill, criminal) has an affective profile that can be mapped on three affective dimensions—Evaluation (*bad, awful* versus *good, nice*), Potency (*little, powerless* versus *big, powerful*), and Activity (*noisy, fast, young* versus *quiet, slow, old*) (Osgood et al., 1975). While the three dimensions are universal across cultures, fundamental sentiments of concepts can vary cross-culturally as they are product of each specific culture (Heise, 1979).

### *Impression Formation Equations*

Affective sentiments of cultural concepts allow people to form and respond to expectations in social interactions. Nevertheless, meanings of identities and behaviors can shift as a result of social events. For instance, killing someone is negatively evaluated in almost all cultures. But most people would agree that killing is less evil when it was executed by a soldier, upon a terrorist, and in combat. Similarly, criminals are viewed as bad people. Yet, when perpetrators displayed apparent sign of remorse during confession, people tend to (re)evaluate them as less criminal (Robinson et al., 1994). In both instances, situated meanings toward the actors and their behaviors are somewhat altered as a result of the other elements presented in the events (e.g., emotional cues, settings, and the object-person).

Thus, apart from measuring fundamental sentiments associated with *out-of-context* concepts, affect control theory also measures *transient impressions*—contextualized affective sentiments transformed by social events. At the core of the theory is to model “how a social action normatively transforms individuals’ feelings about interactants and behaviors from initial

states to contextualized states” (Heise, 2015, p. 2560). Theoretically, this means once we know the cultural sentiments of identities and behaviors, as well as people’s transient feelings towards the same cultural concepts when they are embedded in social events, we can identify the exact mechanisms that govern the formation of impressions. Methodologically, this suggests that transient impressions are a function of out-of-context sentiments toward the actor, behavior, object-person, and the interplays between these elements.<sup>2</sup> In affect control theory, these dynamics are formally captured in impression formation equations.

To measure impressions within the context of an event, researchers follow the tradition begun by Gollob (1974) and Heise and Smith-Lovin (1981) and present participants a list of events that are each formatted in a sentence-length vignette (an [Actor] [Behavior] [Object-person]). Research participants rate three event elements (ABO) on three semantic dimensions (EPA), resulting a total of nine outcome variables in a given impression study. Each equation characterizes how contextualized sentiments of an element ( $Ae'$ ,  $Ap'$ ,  $Aa'$ ,  $Be'$ ,  $Bp'$ ,  $Ba'$ ,  $Oe'$ ,  $Op'$ ,  $Oa'$ ) is influenced by, separately and jointly, sentiments of the actor, behavior, and object-person existing before the interaction ( $Ae$ ,  $Ap$ ,  $Aa$ ,  $Be$ ,  $Bp$ ,  $Ba$ ,  $Oe$ ,  $Op$ ,  $Oa$ ). Within the theory’s framework, each term represents a unique psychological process by which people form impressions of others with regard to their goodness ( $Ae'$ ,  $Be'$ ,  $Oe'$ ), potency ( $Ap'$ ,  $Bp'$ ,  $Op'$ ), and activity ( $Aa'$ ,  $Ba'$ ,  $Oa'$ ). For example, the *stability* term (e.g., the effect of  $Ae$  on  $Ae'$ ) shows that an actor seems nicer in social interactions if they are nice to begin with, whereas the *consistency* term (e.g., the effect of  $BeOe$  on  $Ae'$ ) captures the idea that actors seem nicer when they are nice to good others or behave badly to negatively evaluated others. The latter aligns with a just-world assumption that people’s actions shall bring morally fair and fitting consequences to that person.

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<sup>2</sup> In addition to the main effects of nine event elements, each model also includes culturally and theoretically meaningful two- and three-way interactions terms. In total, 63 potential terms are estimated in each model.

*The Control Principle*

Last, the theory states that people seek to understand and experience the world comfortably. It is our need to maintain affective congruency between cultural sentiments and situated impressions that drives human behaviors. When situations do not follow the mental script presumed by the interactants, that is, when a situation violates cultural expectations, individuals take various strategies to bring their impressions back into line with cultural sentiments (Boyle & McKinzie, 2015; Kroska & Harkness, 2011). It is through social actions that we restore and reinforce cultural orders. Consider the earlier example of a criminal displaying remorse. How we feel about that particular perpetrator is likely to be different from how we feel about criminals in general. To maintain our cultural understandings of a criminal identity, people may redefine the offense as an “unfortunate incident” or relabel the perpetrator as “less of a criminal” (Robinson et al., 1994). This means as long as people operate in a cybernetic control fashion, researchers can reliably predict future actions on the basis of known cultural sentiments and impression formation equations. The control principle, together with the impression formation equations, serve as the engine of affect control theory.

It is precisely the theory’s predictive power that makes it of the most interest to social scientists. Predictions derived from INTERACT—a computer software program that houses the equations and cultural sentiments from several cultures (Heise, 2001)—have been empirically tested in qualitative, quantitative, and experimental studies (for a review, see MacKinnon & Robinson, 2014). Most of the studies, however, fall under the English-speaking, individualistic cultural models. It is important to note that in the early stage of the research program, affect control theorists foresaw variations in affective sentiments across cultures but otherwise assumed cross-cultural consensus in the impression formation dynamics.

Notable differences have since emerged when researchers conducted impression studies outside the European-American contexts. In particular, in societies where cultural rules are communicated and understood through situational elements—what anthropologists labeled “high-context” cultures (Hall, 1966; Gudykunst et al., 1988), research finds impressions towards identities to be heavily influenced by the behaviors and the interaction partners involved in the situations (Kriegel et al., 2017; Robinson et al., 2020; Smith et al., 2001). In contrast, identity meanings in the United States (a low-context culture) show considerable stability regardless of the details of an interaction (Rogers, 2018; Smith-Lovin, 1987). This might explain why a social event like saving the President of the United States failed to change the public opinions about homosexuality. It also brings the empirical question that, to what degree are Chinese impression formation equations culturally unique (given its cultural roots in collectivism and Confucianism) or invariable?

### **INSIGHTS FROM CROSS-CULTURAL RESEARCH**

Comparative inter-cultural research has long studied the implications of culture for social action. Among others, Hofstede’s cultural dimensions theory (1980) and Inglehart’s theory of cultural change (1997) have been the workhorses of cross-cultural research. Each theory developed their own typologies along which cultural values could be analyzed. In this section, I briefly discuss these paradigms, paying special attention to the China-U.S. differences outlined by the two perspectives as they provide a foundation for understanding cultural variations of the two societies.

In the 1980s, social psychologist Geert Hofstede pioneered comparative intercultural research by demonstrating that national cultures can be meaningfully described as relative positions on a number of “dimensions” (Hofstede, 1980). Based on survey data gathered in over



50 countries, Hofstede and associates identified six dimensions to quantify cultural differences between nations: Power Distance, Uncertainty Avoidance, Individualism/Collectivism, Masculinity/Femininity, Long-term/Short-term Orientation, and Indulgence/Restrained (Hofstede & Bond, 1988; Hofstede, Hofstede & Minkov, 2010; Hofstede, 2001). The researchers then computed value scores per country and rank-ordered all countries along each dimension (for country scores, go to <https://geerthofstede.com/>).

Following the works of Hofstede, several other researchers undertook developing their own classifications, with the most influential being the “cultural map” developed by political scientists Ronald Inglehart and Christian Welzel. Using the World Value Survey—a global research project that explores people’s values and beliefs in over 100 countries, Inglehart and Welzel (2005) concluded that cultural variations between societies boil down to two predominant dimensions: 1) traditional vs. secular-rational values and 2) survival vs. self-expression values. While also classifying cultures into multi-dimensions, Inglehart and Welzel take their point of departure from the Hofstede model by arguing that socioeconomic transformations will change national cultures and that values such as self-expression and autonomy will gradually replace self-restraint and obedience as nations moving towards modernization (Inglehart, 1997; Inglehart & Norris, 2003; Inglehart & Welzel, 2005).

Since their formulation, both theories have been widely used and well received across academic and business fields (Taras, Kirkman, & Steel, 2001). It goes beyond the scope of this article to adjudicate which dimension framework is more sounding in theory and useful in practice. Instead, I focus on the China-U.S. comparison discussed in the literature and rely on this body of knowledge to speculate potential cross-cultural differences in the impression formation processes.

According to Hofstede's theory (Hofstede, 2001; Hofstede & Bond, 1988; Hofstede, Hofstede & Minkov, 2010), Chinese and Americans treat social relationships differently. When interacting with others, Chinese prefer a more structured hierarchy and perceive themselves as closely linked to their in-group (power distanced and collectively oriented). In contrast, Americans prefer a more informal structure with ties loosely connected between individuals. The two societies are also positioned differently along two other dimensions. As a pragmatic society, China adapts traditions to changed conditions, believing that truth depends on context and time (e.g., what is good and evil depends upon circumstances). Its long-term orientation also leads Chinese people to be comfortable with ambiguity and uncertainty, with more acceptance of unexpected events that are away from the status quo. On the other hand, the U.S. is considered to have a short-term orientation. Americans prefer traditions and norms, believing that there are universal guidelines about what is good and evil. Accordingly, the society opts for a rigid adherence to laws and rules to avoid uncertainty. Hofstede's characterization converges with insights from Inglehart's theory, according to which China (along with Japan and South Korea, the "Confucian cluster") is among the most secular country on their map whereas the United States is among the most conservative countries out of the western world, leaning toward traditional, self-expressed values societies (Inglehart & Welzel, 2005).

Collectively, this research suggests that when it comes to interacting with others and forming impressions, Chinese may tune into situational cues and embrace a somewhat more flexible understanding of identity and behavior meanings than American do. In contrast, Americans may display stronger motivations to stick to traditions and cultural norms in interpersonal interactions. Within the framework of affect control theory, this implies a greater impact of cultural sentiments on situated affective meanings in impression formation equations.

## MODELING IMPRESSION FORMATION USING BAYESIAN MODEL SAMPLING

Despite the importance of studying impression formation processes, researchers face methodological challenges of model specification and estimation. Earlier work on impression-change models relies on stepwise regression (Schröder, 2011; Smith-Lovin, 1987; Smith et al., 1994; Smith et al., 2001). This approach performs model specification (i.e., choose appropriate determinants) and estimation (i.e., produce coefficients) simultaneously, adding or removing predictors one at a time and re-estimating regressions after each step. There are known drawbacks of stepwise regression (Freedman, 1983). In particular, when models have a large number of potential predictors, stepwise regression tends to produce high rates of Type I errors or false positive findings (Morgan et al., 2016). Due to model multicollinearity,<sup>3</sup> stepwise regression also yields a large number of Type II errors (i.e., significant effects are mistakenly *rejected* in the final model), creating biases in coefficient estimation (Heise, 2015).

To address these issues, Heise (2015) proposed an alternative approach that takes three steps to reduce multicollinearity and separate model specification from estimation. In the first step, researchers treat each potential predictor (e.g., BeOe) as an experimental factor by dichotomizing the continuous sentiment ratings at the median. This transformation ensures equal variances for all variables and minimizes correlations between predictors. In the second step, researchers perform Analysis of Variance (ANOVA) with dichotomized predictors in order to identify determinants involved in the impression formation processes. Upon model specification, the final step employs structural equation modeling, using scalar values of qualified factors to estimate model coefficients.

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<sup>3</sup> Multicollinearity refers to a situation in which explanatory variables are highly related in a multiple regression model. This occurs when two or three of the EPA dimensions are strongly correlated (e.g., being good is associated with being powerful). The problem can be exacerbated when two- and three-way interaction terms are included in the model.

Compared to stepwise regression, the ANOVA-based procedure produces much lower rates of false positive identification (Type I error). However, the parsimony of the models comes at the cost of eliminating some medium-sized predictors (Morgan et al., 2016). Furthermore, ANOVA-based model specification is largely deterministic and fails to consider the probability of an effect within the context of a distribution of probable models.

Recent development in Bayesian statistics provides a new way to estimate impression models (Morgan et al., 2016). Specifically, the Bayesian Model Sampling (BMS) method selects variables based on their relative probability of inclusion in multiple candidate models. The higher the posterior probability—probability of a parameter being included in various candidate models—the more important the predictor is.<sup>4</sup> It is by excluding predictors with low posterior probability that BMS method avoids false positive in model specification. To further reduce the likelihood of multicollinearity and false negative findings, BMS estimates models in a hierarchical fashion with different subsets of covariates. In doing so, predictors are no longer eliminated based on the analysis order. Together, the new Bayesian method “strikes the best balance between explanatory detail and parsimony, with the lowest false positive rate, bias, and variance of all the methods, and comparable true positive rates to ANOVA” (Morgan et al., 2016, p. 327). Given these advantages, I rely on the BMS techniques to analyze the Chinese and the U.S. English impression data, respectively, and compare the results systematically with structural equation modeling. To learn more about social science applications of Bayesian methods, see Lynch (2007).

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<sup>4</sup> BMS allows researchers to assign a prior probability distribution to the parameters if they have information from past knowledge on how the distribution looks like. That is, if population means and standard deviations of the measures are known, BMS could incorporate that information prior to their model specification and estimation. No informative priors were used for the current study as I have no initial knowledge on how each predictor is distributed population wise.

## METHOD

### *Chinese Data*

The Chinese data was collected at Fudan University, Shanghai, China in 1999 and was archived at affect control website (Smith & Cai, 1999).<sup>5</sup> Researchers translated a total of 1,294 concepts used in the U.S. English and Japanese lexicons to Chinese.<sup>6</sup> Later, two native Chinese speakers went through the list and removed stimuli that evoke ambiguous or multiple denotative meanings in Chinese. Overall, the concepts are representative of the identities and behaviors commonly known to laypeople.

For the impression study, the final data set contains a list of 258 Events (the unit of analysis in impression studies). Research participants rated identities and behaviors embedded in events (transient impressions) as well as when they are out-of-context (cultural sentiments). Chinese, like U.S. English, is classified as a SVO language (subject-verb-object). All events were constructed in a “[actor] [behave] [object-person]” form. The researchers made sure that all verbs are transitive in event sentences. After individuals completed their ratings, researchers aggregated ratings of cultural sentiments and transient impressions across participants to eliminate measurement errors.

Following prior studies (Heise & Lewis, 1988), a Chinese version of standard data collection program ATTITUDE was employed to collect sentiment ratings from 380

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<sup>5</sup> The Chinese impression study was supported by a National Science Foundation grant to Dr. Herman W. Smith (then a professor from Department of Sociology, University of Missouri-St Louis). Professor Herman W. Smith and Yi Cai (then a PhD candidate from Department of Educational Psychology, University of Wisconsin-Milwaukee) collected the data in China.

<sup>6</sup> The corpus of concepts was designed to combine identities and behaviors from across the three-dimensional affective space (e.g., + + +, + + -, + - +, + - -, - + +, - + -, - - +, - - -; where the first + or - sign denotes evaluation, the second potency, and the third activity) (see Smith et al., 1994 for the optimum solution for a balanced design).

undergraduate students at Fudan University.<sup>7</sup> The stimuli were randomly presented and capped at 150 per respondent to reduce participant fatigue. Respondents reported their ratings for each stimulus on EPA scales ranging from -4 to +4. The end-points of the scale were labeled with the anchors established in earlier studies, ranging from “bad, awful” to “good, nice” for judgements of evaluation; “powerless, little” to “powerful, big” for judgements of potency; and “slow, quite, inactive” to “fast, noisy, active” for judgements of activity. Points along the scale were anchored with the adjectives slightly (-1/+1), quiet (-2/+2), extremely (-3/+3), infinitely (-4/+4), and neutral (0).

### *The U.S. English Data*

There are two U.S. impression study datasets. In 1978, Lynn Smith-Lovin and David Heise spearheaded the first wave of US data collection. With 1,225 undergraduate participants at the UNC-Chapel Hill, they designed a full-factorial impression study containing 515 events (Smith-Lovin & Heise, 1978). The corpus of events exhausts all possible  $\pm$  EPA profiles of the actors, behaviors, and object-person ( $2^3 \times 2^3 \times 2^3$ ) plus three events representing all-neutral sentences. Three decades later, researchers at the University of Georgia and Duke University initiated a new wave of data collection, producing new sentiment dictionaries (Robinson & Smith-Lovin, 2016) and impression formation equations for the U.S. culture (Rogers, 2018).

Compared to the 1978 data set, the more recent U.S. data contains a much smaller sample with only 128 events. Although impression research often limits their number of events to between 100 to 214 in order to economize data collection and empirical results based on smaller samples did show good external validity (Schröder, 2011; Smith et al., 1994), the full factorial design of the 1978 data nevertheless renders itself the largest and most complete sample

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<sup>7</sup> Elements in all event were rated by equal numbers of male and female respondents. However, due to techniques failure, sentiment ratings for 128 in-context Object were missing among female participants.

collected to date. Equation estimates from the 1978 data have been the basis for affect control theory analyses for almost 40 years. Hence, it is *the* most utilized data in affect control theory tradition.

Besides its historical importance, the 1978 U.S. data is comparable to the Chinese study in several ways. First, both studies used a between-subject design, where each participant rated a subset of stimuli and each stimulus was rated by 25-30 male participants and 25-30 female participants.<sup>8</sup> As a result, sentiment ratings in both data sets were averaged in a gender-separated form, resulting the numbers of sample size twice the number of actual stimuli (once by a mean of male raters and once by a mean of female raters). Second, in term of socioeconomic development, China post 90s closely resembles the United States in late 70s. Thus, despite of the 20-year gap between two data collections, the 1978 US data makes a better candidate for cross-nation comparison because it alleviates the concerns about whether findings of differences are the result of socioeconomic disparities or cultural distinctions. It is for these methodological as well as substantive reasons that I chose the classic U.S. English data as my comparative case.

### *Analytic Strategies*

I employed BMS method to first estimate the impression models of the Chinese and the U.S. English, respectively. The Bayesian method reports inclusion probability for each parameter. A probability of 1.0 indicates an inclusion of the parameter in *all* models, whereas a value of .50 suggests a 50 percent chance for that parameter to be included in all models. Following earlier work (Fernandez et al., 2001), I used a posterior probability of .50 as the cutoff for inclusion in a given model.<sup>9</sup>

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<sup>8</sup> In contrast, the newer U.S. data used a within-person design, where each participant rated all stimuli (128 events).

<sup>9</sup> Data and replication syntax to recreate all analyses in this simulation are available from [https://www.dropbox.com/sh/968sc13l20r8da2/AABdICfj\\_WjKpgPrFF-EJZy0a?dl=0](https://www.dropbox.com/sh/968sc13l20r8da2/AABdICfj_WjKpgPrFF-EJZy0a?dl=0)

To further compare impression formation dynamics across two language cultures, I then ran multi-group analyses embedded in structural equation modeling (SEM). Given findings that suggested global differences in two impression models, I re-estimated all equations with pooled data, adding interaction terms between each predictor obtained in either of the two cultures and a US dummy variable (0 = China, 1 = US). Significant interaction terms are taken as evidence to indicate cross-cultural differences in how we form impressions of others. Finally, I ran a set of INTERACT simulations to demonstrate the implications of impression models in two language cultures.

## RESULTS

### *Chinese Impression Formation Equations*

Table 1 presents nine impression-change equations of the Chinese models. Each row represents a model specification identified by the BMS method (with a posterior probability greater than 0.5). Each column represents an impression formation equation. The Chinese data produced 9 first-order, 6 two-way, and 2 three-way interaction terms in one or more of the nine equations (all  $ps < .001$ ). All coefficients are standardized. To ease interpretation, Heise (2015) classifies model specifications as implausible or atheoretical if a term and the outcome variable it predicts involve three semantic dimensions. Based on Heise's classification, only one term emerged is considered as *atheoretical* (i.e., the effect of AaBaOe on  $Ap$ ) whereas the remaining predictors are either plausible or theoretically meaningful (see Heise, 2007).

[TABLE 1 HERE]

Of the most documented effects is the *stability* term—the impact of a cultural sentiment on the same element in the context of an event (e.g., the effect of Be on  $Be'$ ). Resting on the idea that people stick to the culturally shared meanings even when they encounter additional



information in situations, the stability terms emerged as the largest predictor in all but one ( $Ae$  on  $Ae'$ ) impression formation equations. It appears that in any given situation, an actor seems nice if people normally associated goodness with the identity of that actor ( $b_{Ae} = .40$  on  $Ae'$ ); behaviors seem powerful if they are potent to begin with ( $b_{Bp} = .36$  on  $Bp'$ ); and the object-person seems lively if they occupy an active identity ( $b_{Oa} = .64$  on  $Oa'$ ).

There are also cultural rules governing what people should do in social interactions. For example, we expect good actors to behave nicely ( $b_{Ae} = .17$  on  $Be'$ ), powerful actors to conduct forceful behaviors ( $b_{Ap} = .31$  on  $Bp'$ ), and young people to do active things ( $b_{Aa} = .28$  on  $Ba'$ ). On the other hand, actions reflect on the actor such that acts of kindness enhance the actor's evaluation ( $b_{Be} = .59$  on  $Ae'$ ) and dominant behaviors empower the doer ( $b_{Bp} = .29$  on  $Ap'$ ). Similar to people in other cultures (Schröder, 2011; Smith-Lovin, 1987; Smith et al., 2001), Chinese people also recognizes power differentials between interactional partners: the significant and negative effect of  $Bp$  on  $Op'$  suggests that a potent behavior weakens the recipient of that behavior while a weak action empowers the interaction partners.

Major consistency and congruency interactions are also present in the Chinese equations. Behaviors are viewed in a better light if nice actors do good things ( $b_{AeBe} = .15$  on  $Be'$ ) and/or if positively evaluated acts are directed toward nice object-person ( $b_{BeOe} = .29$ ). Alternatively, actors who act forcefully to nice others sully their reputations ( $b_{BpOe} = -.13$  on  $Ae'$ ). The same goes for someone who treats nasty others with weak actions. Overall, people expect social actions to be fitting to the status of both interaction partners.

Finally, I find significant and negative balance effects ( $AeBeOe$ ) in the equations predicting actor evaluation ( $Ae'$ ) and behavior evaluation ( $Be'$ ). Compared to the U.S. English equations (discussed below), this is the only term that shows a sign reversal. It appears that while

Chinese expects people to operate under a just-world assumption (BeOe on  $Ae'$ ), they encourage those who occupy positive identities to act nicely, rather than harshly, toward stigmatized others. I will return to this point later.

### *U.S. English Impression Formation Equations*

Table 2 presents equation estimates from the U.S. English. The BMS method identified 9 first-order, 12 two-way, and 4 three-way interaction terms. Among the 25 terms, ten are unique to the U.S. English models. Noticeably, the nine equations have almost twice as many estimates as those emerged in the Chinese models (70 versus 40). Predictors are heavily populated on the top panel of Table 2, highlighting the predominant roles played by cultural sentiments in shaping transient impressions.

[TABLE 2 HERE]

Compare to the Chinese models, there are more major terms retained in the US equations. For example, actors seem weaker and quieter when *acting* nicely ( $b_{Be} = -.26$  and  $-.17$  on  $Ap'$  and  $Aa'$ , respectively). The fact that evaluations of goodness is at odds with evaluations of competency and expressiveness speaks to the double bind faced by professional women in the workplace where cultural expectations for women (being nice) are incongruent with expectations of leadership roles (being dominant and agentic) (Brescoll & Uhlmann, 2008). The U.S. equations also identified a “blaming the victim” mentality where *receiving* a negative treatment reflects badly on the object-person’s reputation ( $b_{Be} = .20$  on  $Oe'$ ).

The most substantively interesting finding appears to be the balance term (AeBeOe), which is significant and *positive* in the U.S. equations but *negative* in the Chinese equations. Recall that people in both cultures expect actors to penalize negatively evaluated others and to act nicely toward nice others (BeOe on  $Ae'$ ). The U.S. culture, however, seems to place additional

expectations for socially esteemed actors to abide by this rule ( $b_{AeBeOe} = .11$  on  $Ae$ ). Compared to the Chinese culture where treating stigmatized others with social sanctions depresses the prestige of the esteemed actors, the same interaction brings status boost to social leaders and their behaviors in the United States.

Table 3 shows the number and the type of effects that emerged in the two cultures. The Chinese models were substantially simpler than the U.S. models, possibly due to its smaller sample size. Despite the differences in model specification, there is still significant overlap in the identified effects across the two language cultures, with all but one term shows consistent signs in both equations.

[TABLE 3 HERE]

#### *Comparing Impression Models across Two Cultures*

I now proceed to structural equation modeling to perform global comparisons of the two models using equality constraint tests (Wickrama et al., 1995). For each of the nine equations, I began with a SE model where coefficients are constrained to be equal across two cultures (M1: constrained). The baseline model is then compared against a second model where all coefficients are estimated freely between two cultures (M2: unconstrained). A significant improvement in model fit is viewed as evidence for significant cultural differences. To assess model fit, I rely on McDonald and Ho (2002) and consider models with an RMSEA smaller than .08 and CFI and TLI greater than .95 as acceptable. The smaller the BIC, the better the model. For each equation, the equality constraint test reports fit indices, the change in chi-square, and the p-value associated with this difference.

In the interest of space, I summarize findings from the equality constraint tests here (see Appendix for the tabular results). The SEM results show significant improvement in model fit in

all nine equations (all  $ps < .000$ ). All models with unconstrained estimates show excellent model fit, with smaller BIC values and better RESEM and CFI indices. This means at the global level, there are significant differences between the Chinese and the U.S. English impression formation equations.

To pinpoint the exact location of cultural differences, Table 4 shows Bayesian estimations with significant interaction terms added between a given predictor and a US dummy variable. Where there is a significant difference, the Chinese coefficient is displayed to the left of the vertical pipe (|) and the U.S. coefficient to the right. An absence of interaction terms indicates null difference, with coefficients differ neither in its presence nor in size across two models.

[TABLE 4 HERE]

To ease comparison, all coefficients are standardized. Results from Table 4 show overall consensus in how people form impressions of others within the context of an event. Stability terms, consistency terms, and congruency terms are largely shared across two models, with 42 percent of the predictors showing no statistical differences between the two language cultures.

Of the predictors that do indicate cultural differences, two patterns are noteworthy. First, the stability effects are considerably larger in the U.S. equations. The fact that affective sentiments play a much bigger role in shaping impressions shows the stickiness of cultural expectations. These findings seem to be empirical evidence of the notion that Americans prefer to maintain time-honored traditions and norms while people in Confucian societies believe that laws and rules are flexible to suit the actual situation (Hofstede, 2001; Inglehart & Welzel, 2005). Note also, comparative analyses between the U.S., Egypt, and Morocco revealed patterns of similar differences, pointing to a more rigidity in the definition of situation in the United States (Kriegel et al., 2017; Robinson et al., 2020).

The second notable difference is the consistent sign switch of the balance terms (AeBeOe). To explore the implications of this effect on social interaction while taking all lower order terms into consideration, I conducted INTERACT simulations to compare impressions raised from identical social events across cultures (Kroska & Harkness, 2011; Shuster & Campos-Castillo, 2017).<sup>10</sup> I focused my simulation on the role of “hero” as the focal actor identity, because it has widely shared meanings across two cultures. Since the relationship between the behavior and the object-person is important in shaping impression outcomes, I selected one positively evaluated identity (elementary school teacher) and one negatively evaluated identity (criminal) as object-person. Exploring social interactions between moral leaders and two differentially evaluated identities allows me to decode cultural rules underlying the processes of status attainment and stigmatization. For that reason, I focus on the changes of *evaluation* upon social interactions. Table A2 in the Appendix presents full sentiment profiles (pre-event) and the calculated impression profiles (post-event) of the actors, behaviors, and object-person.

Figure 1 shows the results of the simulation involving (1) a hero saving a criminal (top panel) and (2) a hero saving an elementary school teacher (bottom panel). For each event, the figure displays the pre- and post-event evaluations associated with the actor, behavior, and object. Prior to the events (the blue bars), two cultures shared similar affective sentiments toward the role of “hero” and the action of “saving someone.” Chinese and Americans also view the two object-person roles, elementary school teacher and criminal, similarly irrespective of the language cultures they are in.

[Figure 1 HERE]

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<sup>10</sup> I relied on existing dictionaries data (i.e., sentiment profiles in China and the U.S. 1978) housed in the program but updated the default impression formation equations with those reported in this paper.

Yet, experiencing identical events invoke starkly different impressions in two cultures. In the U.S., not only does saving a criminal damage a hero's reputation, but it also makes the behavior less commendable (panel *a*). Supplementary analyses show that Americans expect criminals to be saved by roles like mafioso and mobster (results available upon request). In contrast, the Chinese do not stigmatize a hero who acts nicely toward bad others. In fact, the event generates more *favorable* impressions of everyone involved, including the stigmatized others.

Figure 1b shows how differently this operates when the interaction partner occupies a positive identity. In the context of U.S. English, saving a schoolteacher brings huge identity reward to the actor in that the hero is now deemed as extraordinarily good. This heroic event also enhances the evaluations of the object-person. Thus, instead of "blaming the victim," people extend additional symbolic rewards (i.e., status) to someone who receives nice gestures from others. In China, the behavior and the object-person are similarly benefited from this interaction, at least when it comes to evaluation. However, it brings no additional status boost to the hero identity. While the hero retains their positive regard, it is less rewarding than directing their kindness towards stigmatized others. Together, simulation results reveal subtleties of moral discourses across two cultures. While China encourages positive relationships between moral leaders and social deviants, the U.S. culture seems to disapprove interactions of such nature.

### **Sensitivity Analysis**

To ensure conclusions are not driven by design differences in two studies (i.e., fully balanced vs. restricted design), I performed additional analyses to check if the results are robust to a smaller set of the US data. Out of the 515 events contained in the full sample, I randomly

selected 258 events to match the sample size of the Chinese data.<sup>11</sup> I re-estimated all models using the “matched” samples. Table A3 and A4 in the Appendix present the new U.S. equations and results from the cross-cultural comparison. Figure 1A in the Appendix present visualization from simulations with updated equations.

Out of the 68 effects originally identified by the full U.S. data, 52 re-emerged in the new models. Consider that the subsample contains less than half of the original events, the recovery rate is surprisingly high (76%). What is more striking is the fact that the new models are largely identical to the ones presented in the paper, down to coefficient size. While the new U.S. models are still more complex than the Chinese models, a higher percentage of predictors (62%) now showed no cross-cultural differences (versus 42% in the original comparison), providing strong evidence that a large portion of impression formation processes are culturally shared. The sensitivity analyses also replicated two patterns of cultural differences. Eight of the nine stability effects are significantly larger in the U.S. equations, and cross-cultural differences in the balance term “survived” in models predicting actor evaluation ( $Ae'$ ) and behavior evaluation ( $Be'$ ). All of these suggests that my conclusion is not a methodological artifact caused by sample size disparities. Rather, the results reveal overall cross-cultural consensus as well as meaningful variations regarding interactional norms.

## DISCUSSION

Social scientists have spent decades understanding what motivates social actions. Despite a growing body of literature that shows behavior is largely driven by deep-seated cultural beliefs and values (Miles, 2015; Vaisey, 2009), developing a formal approach to measure culture and

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<sup>11</sup> The events contained in the Chinese data are not a subset of events used in the U.S. data. Researchers constructed events to populate EPA space. Since affective sentiments attached to identities and behaviors are culturally specific, the same event might position differently in the EPA space, depending on the language cultures. As a result, the corpuses of events may vary across impression studies.

studying empirically its impact on social actions remain challenging. To that end, affect control theory presents culture as shared affective sentiments (e.g., Heise, 1979, MacKinnon, 1994). Through its identification of impression formation dynamics, the theory attempts to mathematically state the ways in which culture dictates our responses to others in social interactions.

Following this tradition and extending the work to non-English speaking, collectivist cultures, I asked in this paper (1) how do the Chinese form impressions of others in social interactions; and (2) how culturally specific or universal those processes are across societies. Using achieved data from China and the United States, I find a great number of shared mechanisms in how people form impressions of events as they unfold. Both cultures show many of the basic features of impression change—large stability in cultural sentiments about identities and behaviors, strong effect of behaviors on the impressions of actors and objects, and strong consistency effects on actor and behavior evaluation.

Nevertheless, my findings point to two patterns of cultural differences that are worth discussing. First, compared to the U.S. models, the Chinese models show a lesser impact of stability effects on transient impressions. Second, the balance term has opposite effects on the actor and behavior evaluation. Through simulations, we see how differences in these cultural rules play out in social interaction. For a high-status actor to behave nicely toward a *devalued* interaction partner, it can be stigmatizing (U.S.) or identity enhancing (China), depending on the culture.

Cultural psychologists and political scientists, for their part, have studied cultures from a different angle, relying on large-scale survey tapping into individuals' beliefs and values. Although the methodological approach taken by affect control theory is drastically different,



patterns uncovered here are strikingly similar to those noted by comparative inter-cultural research (Hofstede, 1980, 2001; Inglehart & Welzel, 2005). In the context of China, we see that individuals' interpretation of the situation is less contingent upon preconceived cultural meanings, suggesting an emphasis on context over norms. Originating from Confucianism, the Chinese culture also expects high-status people to live by an elevated moral code in which people show kindness to stigmatized others as opposed to enforcing justice upon bad others.

These findings hold implications for the social reproduction of culture and our understanding of stratification processes. When culture shapes rather than determines our impressions of others, it leaves *more* room for individuals to contest meanings in situations. In particular, as meanings of identities become fluid and responsive to situational elements, it gives low-status, stigmatized individuals a means of redeeming themselves via social actions. Alternatively, when identity (and behavior) meanings are rigid and robust against the details of an interaction, it contributes to what labeling theorists call the “stickiness” of deviance, insofar as people with stigmatized characters are perceived as permanently affected by the negative cultural stereotypes associated with their identity (Link and Phelan 2001). On the flip side, it affords high-status people protective powers, shielding them from potential negative consequences of wrongdoings (Robinson et al., 2020). In support of these ideas, Hunzaker (2016) finds that in the U.S., people communicated narratives in ways that increase cultural consistency while disregarding deflecting information about identities. In doing so, research participants perpetuated cultural biases and reproduced pre-existing cultural and social order.

Despite its contribution to the literature on culture and social action, the study is limited by having unbalanced sample size across two data sets. The U.S. survey includes a total of 515 events whereas the Chinese data contains 258 events. Prior studies showed that sample size is

associated with the numbers of predictors identified in impression formation equations (Heise, 2012). My analyses with a randomly selected subsample of the U.S. data supported this idea by producing simpler U.S. models. Since the Chinese data has a smaller sample size, readers should be cautious in interpreting any absence of determinants in the models. In the meantime, the sensitivity analyses offer strong evidence that reported cultural differences are not a methodological artifact. As a way to provide more confidence in the findings, a project validating these equations is underway (see Rogers, 2021 for study design ideas). The goal of this validation study is to simulate a list of social events that would maximize differences in predicted impressions between the two cultures. If equations reported in this paper accurately captured key cross-cultural differences in impression formation dynamics, we should see a proper alignment between Chinese and U.S. participants' report on event likelihood and the predicted deflections in INTERACT.

The study is also limited by the temporal variation of the two data collections. With the U.S. data collected from the 70s and the Chinese data from the 90s, to what degree do we expect these findings to hold with modern data sets? On the one hand, national cultures are quite persistent over time (Hofstede, 2001). Although countries change their position on dimensions in absolute terms, the relative cultural positions of countries are rather stable (Beugelsdijk & Welzel, 2018). This is because countries experiencing similar socioeconomic transformations change their values in the common direction (towards modernization) (Inglehart 1997). In this sense, findings reported here should be replicable with newer data sets. On the other hand, China might be one of those rare cases where after decades of unprecedented economic development concurrent with rapid global exposure, the society might experience dramatic cultural shifts, especially among the younger generations. Indeed, research has shown an intergenerational shift

from Collectivism toward individualism in China (Zhou et al, 2018). If true, we may even see more similarities in how people form impressions of others between the two language cultures. To improve our understanding of these processes, future research is needed to investigate the possible convergence of impression formation processes across two nations.

In closing, culture gets into our social interaction by activating widespread sentiments toward identities and behaviors and subsequently guiding our interpretations of and responses to social events. Research on impression formation dynamics offers substantial rewards because well-specified impression models provide quantitatively buttressed answers to multiple questions in the domains of social movement, morality, emotion, social justice, etc. In modeling impression formation equations in Chinese and comparing the normative processes across cultures, the current paper hopes to shed light on future sociological discussion on culture and action.

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Table 1. Impression Formation Equations for Chinese using Bayesian Model Sampling

		Impression of Actor			Impression of Behavior			Impression of Object		
		Ae'	Ap'	Aa'	Be'	Bp'	Ba'	Oe'	Op'	Oa'
Behavioral Effects	Ae	.40 <sup>a</sup>			.17					
	Ap		.50			.31				
	Aa			.48			.28			
	Be	.59			.86					
	Bp		.29			.36			-.24	
	Ba			.20	-.22	-.09	.46		.30	
	Oe							.82	-.19	
	Op	.18	.08	.18					.66	
	Oa									.64
Consistency Effects	AeBe		.16		.15	.18		.15		
	BeOe	.36	.16	.26	.29		.25			
Congruency Effects	BpOe	-.13								
	AeBa	.15					.08			
	AeOe					-.08				
	AaBa	-.14								
Balance Effects	AeBeOe	-.11			-.06					
	AaBaOe		.08							
	Intercept	.01	.14	.52	.07	.43	.34	.00	-.14	.02
	N of Events	258	258	258	258	258	258	194	194	194

Note: all coefficients are significant at .001 level.

## Impression Formation Processes

Table 2. Impression Formation Equations for U.S. English using Bayesian Model Sampling

		Impression of Actor			Impression of Behavior			Impression of Object		
		Ae'	Ap'	Aa'	Be'	Bp'	Ba'	Oe'	Op'	Oa'
Behavioral Effects	Ae	.54	-.07	.09	.13					
	Ap		.77	-.07		.21	-.07		-.04	
	Aa		.06	.86			.38			
	Be	.64	-.26	-.17	.85	-.37	-.14	.20	.32	
	Bp		.44	.09		.78	.13		-.11	
	Ba	-.09		.31	-.10		.72		.05	
	Oe		.05			.05		.89	-.21	
	Op								.80	-.04
	Oa						.04		.09	.86
Consistency Effects	AeBe	.13			.04			.09		
	BeOe	.30			.27	.07		.12	.10	
	ApBp		-.12							
Congruency Effects	BeOp	-.10			-.07					
	BpOe	-.05								
	AeBp								.04	
	ApBe		.11							
	ApOa					.05				
	AaBa			-.10						
	BpOp	.08								
	BaOe								.05	
	BaOp				.04					
Balance Effects	AeBeOe	.11	.04		.09			.05		
	AeBeOp	-.06			-.03					
	AeBpOp	.06			.03					
	AaBeOp	-.03								

## Impression Formation Processes

Intercept	-.13	-.12	.08	-.08	.07	.06	.02	-.45	-.04
N of Events	515	515	515	515	515	515	515	515	515

Table 3. Theorized and Atheoretical Coefficients Retained in Each Culture

Definition		Chinese Identified/Potential	the U.S. English Identified/Potential
Stability effects	e.g., Ae □ Ae'	9/9	9/9
Behavior effects	Be, Bp, and Ba □ Ae', Ap' and Aa'	3/9	7/9
Object diminishment	Be, Bp, and Ba □ Op'	2/3	3/3
Consistency effects	BeOe and AeBe □ Ae', Be', and Oe'; ApBp □ Ap', Bp' and Op'	4/9	7/9
Congruency effects	BeOp and BpOe □ Ae' and Ap'	1/4	2/4
Balance effects	AeBeOe □ Ae', Be' and Oe'; ApBpOp □ Ap', Bp', and Op'	2/6	3/6
Total theoretical effects		21/40	31/40
Implausible effects	e.g., AaBeOp □ Be'	1	3

		Impression of Actor			Impression of Behavior			Impression of Object		
		Ae'	Ap'	Aa'	Be'	Bp'	Ba'	Oe'	Op'	Oa'
Behavioral Effects			-.04							
	Ae	.36  .52	-.07	0  .08	.16		.03			
	Ap		.48  .77	-.04		.23	-.07		0   -.03	
	Aa		0  .04	.41  .84			.15  .36			
	Be	.63	0  -.24	0	.85	0	-.08	.06  .18	0  .31	
	Bp		.41	0  .11		.31  .79	.11		-.12	
	Ba	-.08	-.07	.21  .30	-.19  -.11		.29  .72		.15  .09	
	Oe		0  .06			.07		.58  .91	-.12  -.22	
	Op	.09		.13  .04					.44  .80	0  -.05
	Oa							0  .05	.37  .88	
Consistency Effects	AeBe	0  .10			.06	.09  .04		.10		
	BeOe	.35	.09	.22  .03	.28	.07		0  .10	0  .08	
	ApBp		-.12							
Congruency Effects	BeOp	-.07			-.08					
	BpOe	-.12  -.07								
	AeBa	.16  0								
	ApBe		.10							
	ApOa					0  .05				
	AaBa	-.18  0		-.08						

## Impression Formation Processes

<u>Balance Effects</u>											
	AeBeOe	-.11  .07	0  .03								
	AeBeOp	0  -.04									
	AeBpOp	.05									
	AaBeOp	0  -.06									
	ApBeOa	.03									
	ApBaOp									-.05	
	U.S.	-.07	-.05	-.15	-.07	-.10	.00	.00	.00	-.15	.00

Note: Significant differences on coefficient estimations between U.S. English and Chinese are shown in each cell, with the Chinese value first, U.S. English second, separated by a vertical pipe (|). All coefficients are standardized.

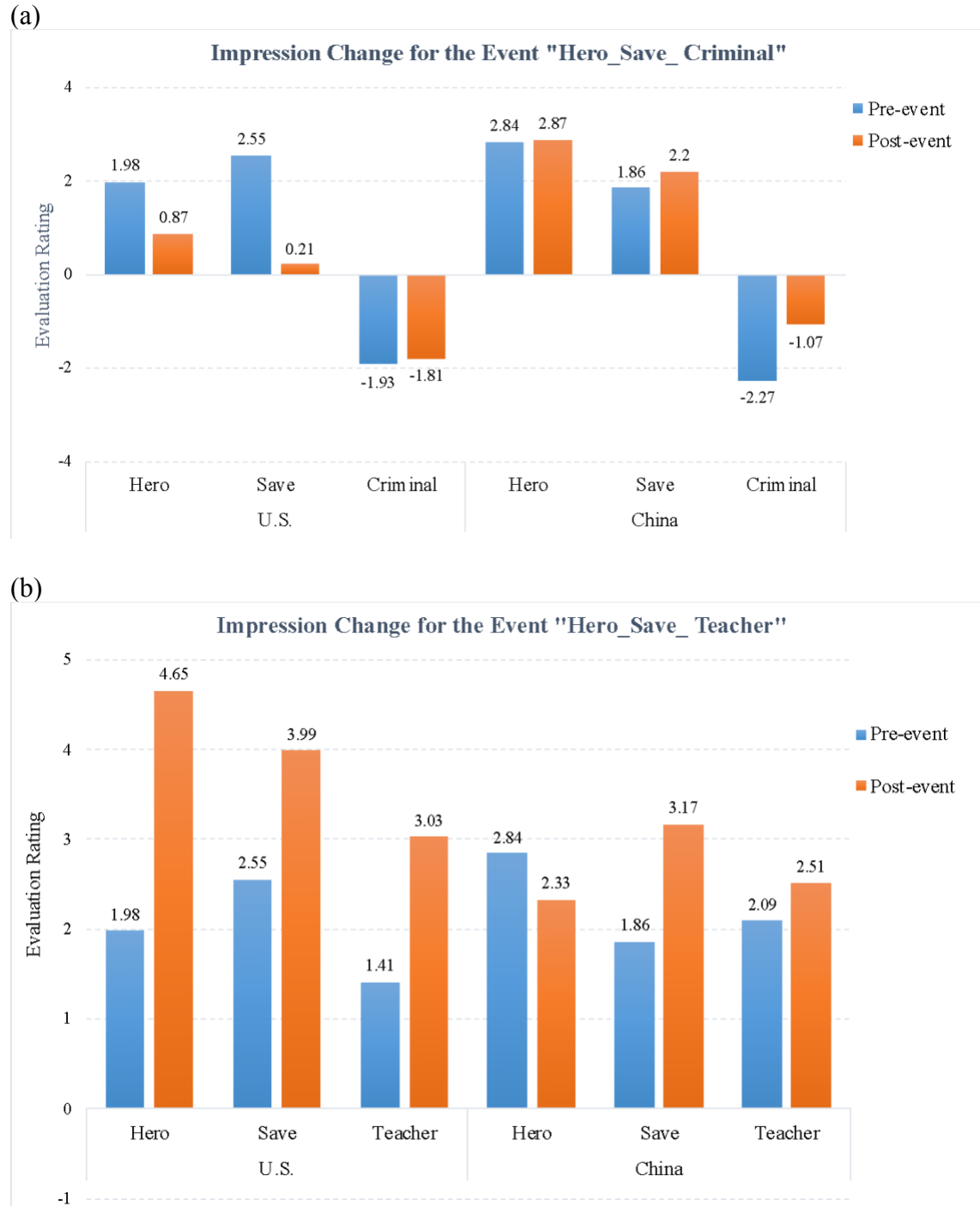


Figure 1. Evaluation of identities and behaviors before and after Events by Cultural Models

## APPENDIX

Table A1. Comparison of Model Fit Indices in Multi-group Structural Equation Modeling

		BIC	RESEA	CFI	$\chi^2$	DF	$\Delta \chi^2_{(df)}^a$	<i>p</i>
Ae'	M1: Equal	3006.098	.102	.947	135.220	15	135.220 <sup>a</sup>	.000
	M2: No Constr.	2981.030	.000	1.000	.000	0		
Ap'	M1: Equal	2504.706	.155	.862	215.268	11	215.268	.000
	M2: No Constr.	2370.216	.000	1.000	.000	0		
Aa'	M1: Equal	2343.777	.198	.841	281.805	9	281.805	.000
	M2: No Constr.	2128.062	.000	1.000	.000	0		
Be'	M1: Equal	2638.987	.078	.981	56.501	10	56.501	.000
	M2: No Constr.	2655.921	.000	1.000	.000	0		
Bp'	M1: Equal	1959.896	.148	.889	160.648	9	160.648	.000
	M2: No Constr.	1865.339	.000	1.000	.000	0		
Ba'	M1: Equal	1980.095	.189	.868	227.841	8	227.841	.000
	M2: No Constr.	1811.001	.000	1.000	.000	0		
Oe'	M1: Equal	1865.994	.257	.902	239.778	5	239.778	.000
	M2: No Constr.	1662.498	.000	1.000	.000	0		
Op'	M1: Equal	2207.025	.184	.853	248.995	10	248.995	.000
	M2: No Constr.	2030.593	.000	1.000	.000	0		
Oa'	M1: Equal	2180.829	.478	.795	326.391	2	326.391	.000
	M2: No Constr.	1868.950	.000	1.000	.000	0		

Note: M1: Equal = All coefficients are constrained to be equal between the Chinese equation and the U.S. equation;  
M2: No constrain = All coefficients are freely estimated across groups.

a: The Chi-square difference between the model with constrained model and freely estimated model;



Table A2. Predicted Impression by Events and Cultures

		Hero_Save_Criminal						Hero_Save_Elementary School Teacher					
		U.S.			China			U.S.			China		
Pre-event	Actor	1.98	2.20	0.96 <sup>a</sup>	2.84	2.92	1.86	1.98	2.20	0.96	2.84	2.92	1.86
	Behavior	2.55	2.11	1.26	1.86	1.72	1.10	2.55	2.11	1.26	1.86	1.72	1.10
	Object	-1.93	-0.47	1.00	-2.27	0.73	-0.56	1.41	0.83	0.42	2.09	1.04	1.71
Post-event	Actor	0.87	1.33	0.96 <sup>b</sup>	2.86	1.96	0.67	4.65	2.17	0.96	2.33	3.99	2.83
	Behavior	0.21	0.90	1.14	2.20	3.32	0.56	3.99	1.60	1.11	3.17	2.33	2.59
	Object	-1.81	0.25	0.84	-1.07	0.69	-0.34	3.03	1.60	0.29	2.51	0.07	1.11

Note. a. Out of context EPA ratings for the identity “hero” in the U.S. Since these are pre-event ratings, they are cultural sentiments.

b. Contextualized EPA ratings for the identity “hero” in the U.S. Since these ratings are post-event, they represent transient impressions.

Table A3. Impression Formation Equations for U.S. English: Based on a Subset of Randomly Selected Sample

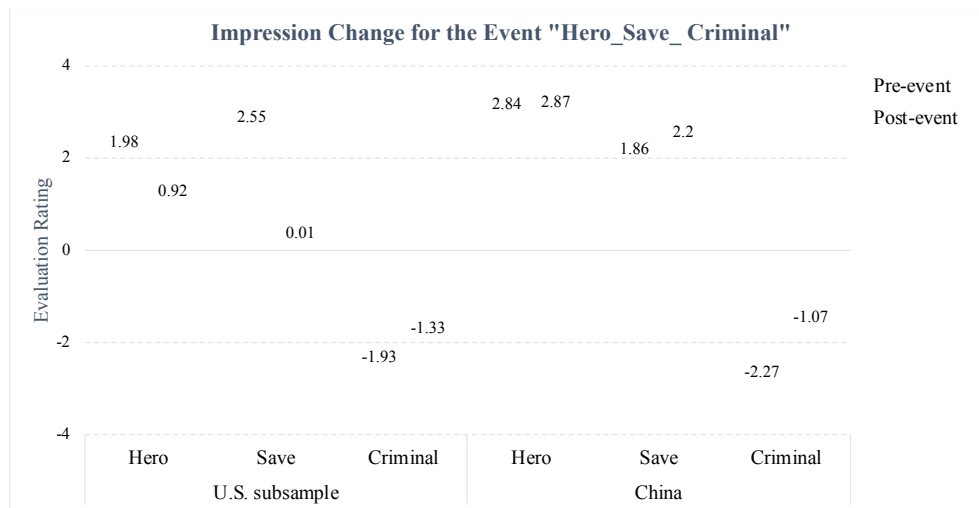
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Table A4. Cross-cultural Comparisons in Impression Formation Processes Between Chinese and U.S. English

		Impression of Actor			Impression of Behavior			Impression of Object		
		Ae'	Ap'	Aa'	Be'	Bp'	Ba'	Oe'	Op'	Oa'
Behavioral Effects	Ae	.42 .52			.16			.04		
	Ap		.51 .79	-.04		.26				
	Aa			.41 .80			.17 .38			
	Be	.61	0 -.24	0 -.17	.82			.15	0 .33	
	Bp		.42	0 .13		.35 .80	.11		-.13	
	Ba	-.10	-.10	.24	-.17	-.07	.27 .71	-.04	.15	
	Oe			-.03				.60 .93	-.10 -.19	
	Op	.07		.14 .04					.46 .81	
	Oa								0 .08	.40 .88
Consistency Effects	AeBe	.11	.06		.06	.08		.10		
	BeOe	.34	.08	.22 .03	.29	.07	.17 .02	0 .10	0 .07	
	ApBp		-.15							
Congruency Effects	BeOp	-.10			-.08					
	BpOe	-.12								
	AeBp								.03	
	ApBe	.03	.10							
Balance Effects	ApBa						0 -.06			
	AeBeOe	-.08 .06			0 .06					
	ApBpOa								-.05	
	U.S.	-.09	.00	-.15	-.04	-.07	.00	.00	-.21	.00

Note: Significant differences on coefficient estimations between U.S. and China are shown in each cell, with the Chinese value first, U.S.A. second, separated by a vertical pipe (|). All coefficients are standardized.

(a)



(b)

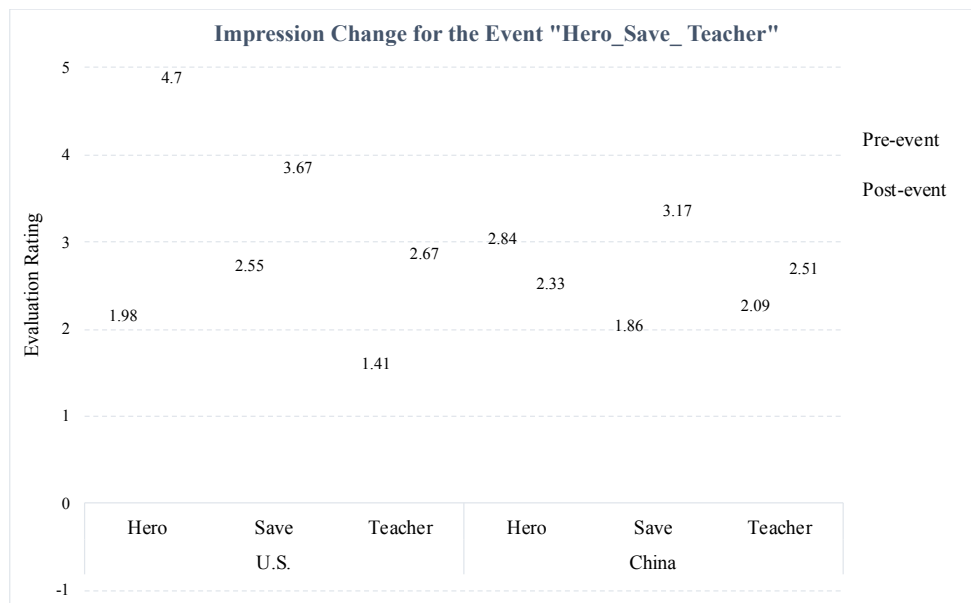


Figure A1. Evaluation of Identities and Behaviors with New U.S. Equations.

## Preflight Results

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