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Predictors of hazing motivation in a representative sample of the United States ☆

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ABSTRACT

Hazing – the abuse of new or prospective group members – remains a puzzling and persistent cross-cultural phenomenon. Aspects of hazing behavior may reflect the operation of psychological adaptations designed to lessen certain forms of ancestral coalitional exploitation. Using a representative sample of the United States, this paper replicates and extends prior findings on predictors of hazing motivation in a university population. Results suggest that probable vectors of ancestral exploitation by newcomers (e.g., freely available group benefits) predict desired hazing severity, and that these effects generalize to a larger and more diverse sample. Findings are discussed in light of hazing's evident complexity and cultural patterning.

1. Introduction

Why are newcomers to certain kinds of groups subjected to seemingly inexplicable ordeals? That is, why do humans *haze*? From first-order intuitions, hazing appears puzzling and disadvantageous. Unlike stereotypical bullying, hazing is the abuse of new or prospective group members (hereafter, "newcomers"). And yet hazing is surprisingly common cross-culturally, including small-scale societies and industrialized countries (e.g., Allan & Madden, 2008; Campo, Poulos, & Sipple, 2005; Davis, 1998; Herdt, 1998; Hoover & Pollard, 2000; Linhares de Albuquerque & Paes-Machado, 2004; Pershing, 2006; Shaw, 1992; Webster, 1908).

Cimino (2011) performed the first experimental investigation of hazing motivation on a sample of college undergraduates. Two vignette experiments suggested that aspects of hazing motivation followed an evolutionary logic designed, in part, to discourage newcomer exploitation (detailed below). But to what extent are these experimental results generalizable to non-university populations? Considerable criticism has been leveled at the use of university populations to make inferences about human nature (e.g., Henrich, Heine, & Norenzayan, 2010; Stanovich, 2004). Especially in the study of hazing, university populations may appear problematic. After all, universities are host to many organizations that haze (e.g., fraternities, sororities, athletic teams, marching bands, clubs). Even if most students do not participate in such activities, perhaps they exist within a "hazing culture" that encourages them to accept and endorse these activities (Iverson & Allan, 2004). Moreover, perhaps measured predictors of hazing motivation in these populations are idiosyncratic and will not generalize to larger, non-university samples. In this study, I replicate and extend the basic findings of Cimino (2011) and demonstrate that a representative sample of United States adults (N = 914) has nearly identical hazing sentiments as students of the University of California, Santa Barbara. Thus, this study represents the first large-scale, experimental study of hazing motivation.

1.1. Hazing in theory and practice

Hazing is defined here as the generation of induction costs (i.e., elements of the experiences necessary to be acknowledged as a "legitimate" group member) that appear unattributable to group-relevant assessments, preparations, or chance (Cimino, 2011). For example, while intense calisthenics appear group-relevant as an assessment or preparation for firefighters, they seem less so for college fraternity members. Hazing may also be manifest in content-appropriate but intentionally excessive assessments or preparations. This definition of hazing is preliminary and operational. It exists only to approximately demarcate the contexts that are most commonly labeled "hazing" and appear to be in need of additional explanation. Theories of hazing are almost always explicit attempts to explain how such induction practices may be group-relevant, even if they appear otherwise (e.g., Cialdini, 2001; Keating et al., 2005).

Throughout the social sciences, most explanations of hazing can be categorized under three macro theories: solidarity, dominance, and commitment. Many researchers have suggested or implied that hazing ordeals increase group solidarity, (e.g., Aronson & Mills, 1959), establish dominance over newcomers (e.g., Keating et al., 2005), or allow for the selection of committed members (e.g., Vigil, 1996). The macro theories do not represent three principled and well-established theories, but rather a way to order a diverse set of claims

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and speculations regarding hazing's origins and persistence (see review in Cimino, 2011). In actuality, there is little direct scientific evidence for any theory of hazing. And although calling the ideas "macro theories" suggests testability, most claims made about hazing are not formulated in a way that is easily testable. For example, the idea of "group solidarity" may appear straightforward and intuitive, but solidarity's operational entailments are diverse and contested (see reviews in Dion, 2000; Friedkin, 2004; Hogg, 1992).

More importantly, it is not clear that social scientists have a unified representation of what needs to be explained about hazing. The success of any theory of hazing will ultimately depend on its ability to provide more than a plausible account of hazing's effects on hazees. Any successful theory will also need to directly predict hazing's fundamental, core characteristics.

1.2. Commonalities of hazing behavior

The manifest content of hazing is profoundly variable: Sleep deprivation, intoxication, beatings, calisthenics, servile labor, and scarification are just some of its multitudinous incarnations. Many locally and historically contingent factors are likely at play in the adoption or persistence of specific hazing practices (e.g., cultural transmission biases, see Richerson & Boyd, 2005). But what uniformities are evident beneath this cultural variability? Below I detail four important regularities of hazing that are directly observable and pre-theoretical (cf. Schroeder, 2004). These regularities form a critical part of the explicanda for any theory of hazing.

1.2.1. Temporary: hazing has a restricted time course

The hazing ordeals experienced by newcomers do not normally recur later in their tenure. Such ordeals are usually temporary and have a jointly acknowledged point of cessation.

1.2.2. Unidirectional: hazing is solely directed at newcomers

While veterans and newcomers could logically subject one another to the same practices during the induction period, veterans almost never suffer at the hands of newcomers.

1.2.3. Coercive: hazing is inflicted

Hazees are often coerced into being hazed (e.g., Baier & Williams, 1983; Colton, 1993; Herdt, 1998; Houseman, 2001; Johnson, 2002; Whitehouse, 2005) with some societies treating hazing as an inescapable social obligation (e.g., certain New Guinean secret societies, see Herdt, 1998).

1.2.4. Coalitional: hazing arises in long-term cooperative alliances

Rather than random aggregations of community members or temporary task groups, hazing is largely found among cooperative alliances that a) are expected to endure across many collective actions and b) have engaged in some collective actions in the past (e.g., secret societies, athletic teams).

Once hazing is viewed in light of these four characteristics, certain common explanations of hazing become less plausible. For example, one solidarity theory of hazing posits that it represents an attempt (conscious or unconscious) to create cognitive dissonance in hazees (e.g., Cialdini, 2001). The basic proposition is that individuals who undergo costly ordeals will attempt to justify their effort by increasing their liking for the hazing group (Aronson & Mills, 1959). But if this is so, why is hazing *temporary* – if effort justification can increase group liking, why not just continue hazing? Further, why is hazing *unidirectional*? Would it not be advantageous for veterans to have to further justify their effort by being abused by newcomers? Additionally, given that cognitive dissonance can be diminished by reducing the perception of choice (e.g., Harmon-Jones & Harmon-Jones, 2007), why is hazing so commonly *coercive*? Why does hazing even exist in environments where hazees have no choice but to participate? And if hazing can increase group liking, why is it concentrated within *coalitional* groups? After all, group liking has demonstrably positive effects on the efficacy of many task groups (see meta-analysis in Beal, Cohen, Burke, & McLendon, 2003).

Thus, regardless of whether hazing can – or cannot – generate cognitive dissonance (e.g., Lodewijkx & Syroit, 1997), theories that make the effect central to the genesis or persistence of hazing fail to predict basic and recurrent features of the phenomenon.

1.3. The evolutionary logic of hazing

Why, then, do humans haze? What we presently call "hazing" is likely due to a number of different, separable causal processes. Nonetheless, it may be possible to unpack these processes with sub-theories that can eventually be combined to provide a comprehensive theory of the phenomenon. One reason why hazing occurs may be that the human mind is equipped with psychological mechanisms that motivate the strategic devaluation of coalition newcomers (Cimino & Delton, 2010; Delton & Cimino, 2010). These mechanisms may have evolved because of the adaptive problems posed by coalition newcomers. Below, I detail the stepwise logic behind this sub-theory of hazing.

1.4. Automatic accrual theory

1) The ability of coalitions to endure across multiple overlapping membership generations was adaptively important throughout many human ancestral environments. This was particularly true for warfare (Bowles, 2009; Tooby & Cosmides, 2010) but also for the realization of shared interests across multiple domains (e.g., Cimino & Delton, 2010; e.g., Delton & Cimino, 2010; Tiger, 1984; Tooby, Cosmides, & Price, 2006).

2) Enduring coalitions built up group benefits over time (e.g., club goods, common-pool resources), some of which were logically *automatic* (Cimino & Delton, 2010; Delton & Cimino, 2010), that is, immediately available to newcomers at little or no cost (e.g., status, protection, common property).

3) Because automatic benefits were freely available to newcomers, they were also vulnerable to exploitation strategies by newcomers. These strategies may have included a) temporarily associating with a coalition, consuming automatic benefits until successfully excluded, or b) indefinitely associating with a coalition, but relying on early inaccuracies in the estimation of competence and trustworthiness to engage in higher levels of free riding or other forms of exploitation around group entry. In other words, because lower levels of contribution or higher levels of benefit consumption may be the products of lesser skill or a lack of familiarity with group norms, newcomers were able to manipulate cues that normally disarm anti-free rider punitiveness (e.g., Delton, Cosmides, Guemo, Robertson, & Tooby, 2012). These tactics were more profitable in coalitions with significant automatic benefits.

4) The ability of newcomers to take advantage of automatic benefits made the time period around coalition entry a privileged period for exploitation. For veteran members, it made the entrance of an overlapping membership generation a potential cue of heightened exploitation.

5) Partially in response to these adaptive problems, the human mind was selected to strategically devalue newcomers to enduring coalitions. This strategic devaluation may motivate a constellation of responses toward newcomers, including depressing their ability to benefit from the coalition, advertising an increased willingness to inflict costs, and attempting to enforce labor inputs. (For evidence that real-world hazing includes these features, see General Discussion.) By this theory, certain aspects of hazing were ancestrally adaptive because a) amid a market of prospective members, hazing discouraged a short-term association/exploitation

strategy and b) regardless of the existence of a member market, hazing made the abuse of temporary asymmetries in the understanding of newcomer competence and trustworthiness more difficult. Hazing accomplished the former by making the time period around group entry relatively costly. Hazing accomplished the latter by temporarily increasing compliance and conformity in hazees, one product of which was a relative reduction in exploitative behaviors (see General Discussion). Hazing provided direct fitness benefits to hazers by augmenting the coalition's ability to generate benefits (by increasing labor inputs and decreasing free riding in newcomers) and preventing the decline of cooperation that occurs when successful free riding is present or assumed to be present (e.g., Fehr & Gachter, 2000).

From the perspective of automatic accrual theory, hazing is *temporary* because it reflects the operation of mechanisms designed to solve exploitation problems that attenuate over time. That is, over time, the accuracy of veteran estimations of newcomer trustworthiness and competence increases, reducing the need for hazing. Hazing is *unidirectional* because the adaptive problem it addresses is inherently asymmetric from the standpoint of veterans: Newcomer status is a vector for exploitation (e.g., Cimino & Delton, 2010; Moreland & Levine, 2002), and the value of newcomers as coalition members is (compared to veterans) relatively unproven. Hazing is *coercive* because the ordeals suffered by hazees are, in part, attempts at gross behavioral regulation and domination during a period of otherwise heightened exploitation (e.g., Stone, 1946; Webster, 1908; Whiting, Kluckhohn, & Anthony, 1958). Finally, hazing is *coalitional* because it was principally enduring coalitions that built up large automatic benefits and thus were most vulnerable to newcomer exploitation. In sum, automatic accrual theory makes predictions that are consistent with – and may partially explicate – hazing's key regularities.

Automatic accrual theory is a logical elaboration of many theories and hypotheses relevant to – but not necessarily focused on – hazing (e.g., Boyer, 2001; Iannaccone, 1992; Moreland & Levine, 2002; Sosis, Kress, & Boster, 2007; Tiger, 1984; Vigil, 1996). Like other, similar ideas, automatic accrual theory implies that hazing is partly a coalitional anti-free rider strategy. The goal of automatic accrual theory is to provide a detailed evolutionary account of some of the selection pressures that might favor the evolution of hazing behaviors, make precise predictions about the cues that will motivate hazing at the individual level (i.e., the perception of automatic but not non-automatic benefits) and help explain the existence of a focused period of dominance surrounding hazing ordeals. Additionally, automatic accrual theory is explicitly designed to be experimentally testable using standard psychological methods.

Cimino (2011) tested and found evidence consistent with four basic predictions of automatic accrual theory:

1. Because strongly cooperative groups generate high levels of automatic benefits, membership in such a group will motivate greater hazing severity than membership in a weakly cooperative group. In other words, the predicted difference in hazing severity between these group types will be mediated via differences in automatic benefits.
2. If one function of hazing is to prevent the exploitation of automatic benefits, non-automatic benefits will predict no unique variance in hazing severity when automatic benefits are statistically controlled.
3. Because being a high contributor to a group entails disproportionate contribution to the maintenance of automatic benefits, members with high levels of contribution will haze more severely than members with low levels of contribution. Note that prior work on punishment suggests that high contributors are more willing to punish free riders (e.g., Price, Cosmides, & Tooby, 2002). By this logic, high contributors should be more willing to haze potential free riders as well.
4. If hazing is designed, in part, to create costs that prevent or discourage near-term exploitation, hazers should be increasingly willing to coercively inflict these costs as the chance of exploitation increases. In other words, if hazing severity reflects the likelihood of exploitation by newcomers, it will positively predict hazing coerciveness.

The primary goal of this paper is to attempt to replicate these four findings on a large, diverse, non-university population.

2. Methods

2.1. Participants

All participants were members of Knowledge Networks' online research panel in April of 2006. This panel is designed to provide a representative sampling of the United States population. Panel members were recruited using Random Digit Dialing (RDD) and offered internet access in exchange for their participation in the panel. Individuals who did not have a computer were given WebTV devices. Aspects of Knowledge Networks' sampling methodology cause slight deviations from representativeness (e.g., some over-sampling of certain geographic regions), and thus stratification weights provided by Knowledge Networks are used in all analyses and descriptive statistics to ensure the representativeness of the sample at the time it was collected. (For more information on Knowledge Networks' panel and methodology, see http://www.knowledgenetworks.com.) In total, 456 men and 458 women between the ages of 18 and 92 ($M \pm SD = 45.56 \pm 16.46$) participated in the experiment. Racial makeup was 69.8% white, 12.7% Hispanic, 11.2% black (non-Hispanic), 3.2% other (non-Hispanic), and 3.1% two or more races (non-Hispanic). Nearly half of the sample (46.3%) had never attended college.

2.2. Materials and procedure

The entire experiment was computerized. Participants were randomly assigned to complete a questionnaire about a fictional group: strongly cooperative (i.e., high levels of cooperative interdependence) or weakly cooperative. The strongly cooperative group was the Ice Walkers, a single-sex extreme sports group specializing in arctic environments. The weakly cooperative group was the Bug Watchers, a single-sex group of entomology enthusiasts. (The sex of the group always matched the sex of the participant.) Fictional and uncommon groups were chosen so that they had no publicly known hazing status. Each questionnaire described typical group activities and instructed participants to imagine themselves as current members. Following each group description, participants were randomly assigned to read that they were either high group contributors (e.g., they expended high effort in group activities and volunteered to provide additional help when needed) or low group contributors. After doing so, they completed a manipulation check that required them to rate their perceived cost of personal contribution. In sum, the study used a $2 \times 2 \times 2$ design: group type (strongly cooperative vs. weakly cooperative) $\times$ contribution (high vs. low) $\times$ sex.

2.2.1. Non-manipulated questionnaire components

For each group, participants read that membership was contingent on the ability to get along with existing members as well as the possession and demonstration of group-relevant skills or attributes. This was followed by a series of questions about participants' impressions of how the group will benefit new members. The first three questions concerned automatic benefits: to what extent the group will increase the status, available group aid, and the short-term, zero-effort skill acquisition of newcomers. The final benefit question

Table 1
Predictors of desired hazing severity across US adult population.

	ΔR^2	Standardized beta
Step 1	.18***	
Age		−.14***
Sex		.09**
Exposure to college		−.04
Exposure to high-risk group		−.03
Group type		.33***
Contribution		.03
Automatic benefits		.18***
Non-automatic benefits		−.02
Step 2	.02***	
Group type × automatic benefits		.17***
Contribution × sex		.13*

Note. All data are calculated via hierarchical multiple regression. See Methods for variable construction. Total $R^2 = .20$, N = 903.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

asked about non-automatic benefits, in this case the long-term, high-effort skill acquisition from group membership (see electronic supplementary material for stimuli). Questions were answered on seven-point rating scales (displayed as 0–6 but analyzed as 1–7).

Participants read that the group had recently decided to have an initiation for new members. As current members, participants were allowed to voice their input on how the initiation should be conducted. This consisted of a) whether the initiation should have a pleasant component, and if so, how pleasant (included to balance any demand characteristics); b) whether the initiation should have a stressful component, and if so, how stressful; and c) whether all new members should be pressured to complete the initiation, and if so, to what extent.

2.2.2. Operationalization and composite variables

"Automatic Benefits" were operationalized as the sum of the status benefit, the group aid benefit, and the short-term, zero-effort skill acquisition benefit. "Non-Automatic Benefits" were operationalized as the long term, high-effort skill acquisition benefit. "Hazing Severity" was operationalized as the desired stressfulness of the initiation. "Exposure to College" was operationalized as a dichotomous variable where 1 = attendance of any college and 0 = achievement of a high school diploma or less. "Exposure to High-Risk Group" was operationalized as a dichotomous variable, where 1 = past or current membership in a Greek letter society, organized athletic team, or the military and 0 = no past or current membership in any of the three types of groups. (This variable was included to account for any influence of past membership in groups that commonly haze). "Group Type" was coded as 1 = strongly cooperative and 0 = weakly cooperative. "Sex" was coded as 1 = male and 0 = female.

3. Results

All predictions (save those specified below) were tested using standard multiple regressions. Interaction variables were tested using hierarchical entry to isolate their statistical effects. Because there are a variety of sex-differentiated aspects of coalitional psychology (e.g., Tiger, 1984; Tooby & Cosmides, 2010), sex was tested as a moderator on all non-control variables. Potential interactions with sex were first tested individually. Conventionally significant interactions were then placed into the final model at Step 2 (Table 1). Only significant sex interactions are reported below. All p values are two tailed. Data are available at http://www.tessexperiments.org/data/cimino445.html.

3.1. Did participants haze more severely in the strongly cooperative group than in the weakly cooperative group?

Yes; group type modified participants' desired hazing severity (Tables 1 and 2), increasing it in the strong group ($M \pm SD = 4.07 \pm 1.61$) relative to the weak group ($M \pm SD = 2.91 \pm 1.51$), N = 907.

3.2. Did automatic benefits positively predict variance in hazing severity?

Yes; participants who believed that newcomers would obtain more automatic benefits desired greater hazing severity (Table 1, Step 1).

3.3. Did automatic benefits appear to mediate the effect of group type on hazing severity?

No; although automatic benefits explained variance in desired hazing severity across group types (Table 1, Step 1), a separate mediation analysis showed that automatic benefits only trivially reduced the amount of variance in desired hazing severity attributable to group type (.35 to .33). This prompted a follow-up analysis, revealing that automatic benefits interacted with group type (Table 1, Step 2), positively predicting desired hazing severity only in the strong group (simple slope of $B = .30$, $p < .001$). In contrast, automatic benefits did not predict desired hazing severity in the weak group (simple slope of $B = .06$, $p = .183$). Because automatic benefits only explained variance in desired hazing severity in the strong group, it did not mediate this effect across groups. This mirrors some of the findings from Cimino (2011), which suggested inconsistent effects for weak groups as well (see General Discussion).

3.4. Did non-automatic benefits fail to positively predict hazing severity?

Yes; non-automatic benefits explained no unique variance in desired hazing severity when automatic benefits were statistically controlled (Table 1, Step 1).

3.5. Did high-contributing participants haze more severely than low-contributing participants?

Partially; the contribution manipulation explained no unique variance in desired hazing severity (Table 1, $p = .422$). However, this variable interacted with sex (Table 1, Step 2) such that men in the high-contribution condition desired more severe hazing (simple slope of $B = .10$, $p < .05$), but women did not (simple slope of $B = -.04$, $p = .303$).

3.6. Did exposure to college or high-risk groups predict hazing severity?

No; neither exposure to college environments or high-risk groups explained unique variance in desired hazing severity (Table 1, Step 1).

3.7. Did hazing severity positively correlate with hazing coerciveness?

Yes; the more severe the desired hazing, the more participants wanted newcomers to be pressured into completing the initiation. For

Table 2
Desired hazing severity across experiment conditions.

Sex	Ice Walkers		Bug Watchers	
	High	Low	High	Low
Men	4.49 (1.55)	3.97 (1.44)	3.19 (1.54)	2.89 (1.34)
Women	3.85 (1.75)	3.99 (1.65)	2.72 (1.64)	2.83 (1.48)

Note. Means (standard deviations) of experiment conditions. "High" and "Low" are levels of contribution.

comparison to previous findings (Cimino, 2011) this was first tested using a separate univariate analysis, $r = .53$, $p < .001$, $M = 3.80 \pm 1.77$, $N = 907$. Next, to control for additional explanatory factors, desired hazing coerciveness was simultaneously regressed on age ($B = -.03$, $p = .243$), sex ($B = .02$, $p = .437$), exposure to college ($B = -.04$, $p = .164$), exposure to high-risk group ($B = .09$, $p < .01$), group type ($B = .06$, $p = .056$), contribution ($B = -.03$, $p = .343$), and desired hazing severity ($B = .50$, $p < .001$), $R^2 = .29$, $N = 907$. Desired hazing severity remained the primary predictor of desired hazing coerciveness.

4. General discussion

In prior experiments with a university population, hazing motivation appeared to follow an adaptive logic designed to reduce newcomer exploitation (Cimino, 2011). In the current experiment, using a representative sample of the United States, hazing motivation was almost identically patterned. Participants that imagined themselves as members of a strongly cooperative, enduring coalition desired more severe hazing. Variance in the coalition's perceived automatic benefits – but not non-automatic benefits – positively predicted hazing motivation. Contribution level, for men, also positively predicted desired hazing severity, and hazing severity positively correlated with hazing coerciveness. Nonetheless, these findings require qualification and elaboration.

The effects of the control variables were straightforward. Women desired less severe hazing, presumably reflecting generalized sex differences in aggressiveness (e.g., Archer, 2009). Older individuals also tended to desire less severe hazing, reflecting either reductions in aggressiveness over the life course or unidentified cohort effects. Neither exposure to college environments nor exposure to high-risk groups predicted any independent variation in desired hazing severity. This is consistent with the idea that hazing motivation is not simply a curious manifestation of arbitrary and generalized tendencies toward cultural learning. That said, both variables were binary and may not have captured the relevant variation. High-risk groups, for example, are not necessarily hazing groups, and not all college environments may implicitly endorse hazing. It is also worth noting that an effect of past experience in high-risk groups could also reflect cognitive calibration (e.g., Buss, 2000, p. vii), rather than arbitrary cultural influence.

Automatic benefits functioned as a significant and independent predictor of desired hazing severity. However, group type interacted with automatic benefits such that this effect was not evident in the weak group. This is in contrast to Cimino (2011), where the same weak group (the Bug Watchers) did evidence a relationship, but a different weak group (an audio enthusiast club) did not. Much of the effect of automatic benefits may be contingent on a given coalition being perceived as sufficiently entitative (i.e., having coherent, group-like properties). While highly cooperative groups have many cues to this effect, the same may not be true of the weakly cooperative groups used thus far. This ambiguity may allow for the greater involvement of individual and population-level differences in the projection of entitativity onto social groupings (for an in-depth treatment of entitativity, see Lickel et al., 2000).

An effect of contribution on desired hazing severity was found only for men. The effect of contribution in prior experiments was also small, but did not appear to be sex differentiated. These inconsistent findings may be because the actual effect of contribution is a) non-existent or b) overwhelmed by measurement error due to inadequate manipulations. Given some real-world evidence that contribution level plays a role in desired hazing (see next section), stronger manipulations may be needed to effectively falsify this prediction of automatic accrual theory.

As in prior experiments, group type independently predicted desired hazing severity. One problem with interpreting the effect of group type is that it functions as an omnibus variable and likely represents the joint effect of numerous cues associated with the organizations. While some of these cues are theory-relevant to automatic accrual theory, others are not. For example, imagining one's self as a hardcore arctic survivalist may prime a great deal more aggressiveness than imaging one's self as a potentially-bookish entomology enthusiast. Nonetheless, even if the effect of group type were wholly due to such spurious priming effects, this would not explain why automatic benefits independently predicted variance in hazing severity.

The more severe the desired hazing, the more participants advocated pressuring newcomers into being hazed. This was conceptualized as demonstrating a greater insistence on newcomers being hazed given potential cues of exploitation. However, a more complete conceptualization may be that coercion tracks hazing severity because hazing itself is typically a coercive strategy. If hazing is (in part) an attempt at temporary dominance, hazers should devalue hazee consent, and more extreme hazings should evidence greater devaluation.

Although hazing is sometimes portrayed as a deviant activity, ~84% of this representative sample of the United States chose to at least minimally haze newcomers (i.e., to add a stressful component to the initiation). Even discarding individuals who desired ostensibly "mild" hazing (below the midpoint of the seven-point scale) leaves ~54% advocating a moderate to severe hazing component. These results represent participants making unpressured, anonymous, individual decisions that are intended to represent how they would act in real life. This may suggest that – in the right circumstances – pro-hazing sentiments are common and easily elicited. That said, the experiment tasked participants with crafting an "initiation". Although the term is technically neutral with respect to severity (Meriam-Webster, 2013), it may not be seen as such in the population studied.

4.1. Automatic accrual theory and the real world

This study, along with Cimino (2011), has helped parameterize characteristics of group perception that predict the desire to haze. But do these effects generalize to the real world? There are a number of basic predictions made by automatic accrual theory that appear to obtain in actual hazing groups. For instance, Walker (1968) measured the prestige (an automatic benefit) associated with 29 fraternities at the University of Washington and found a positive association with a measure of their hazing severity. Similarly, Ramey (1982) examined 31 chapters of the fraternity Tau Kappa Epsilon, finding a positive association between their prestige and the "toughness" of their induction process ("tough" fraternity induction processes typically amount to hazing). In the ethnographic record, Young's (1965) study of male initiations suggested that societies with powerful, established coalitions (and assumedly high automatic benefits) tended to have more "dramatic" initiation practices, with beating/severe hazing operationalized as the most extreme form of drama. (See also Allen, 1967; Strathern, 1970 for compatible observations among tribal groups in New Guinea.) With respect to personal contribution predicting desired hazing severity, Campo et al.'s (2005) survey found that leaders of student organizations (who presumably contribute highly to their groups) were more likely to self-identify as hazers than non-leaders. Additionally, Honeycutt's (2005) account of hazing in an online discussion group suggested that a group of elite members with long tenures were the most insistent on hazing.

If hazing serves, in part, to enforce against otherwise hard-to-detect free riding among newcomers, hazers should be expected to coerce labor inputs during hazing or benefit from an "afterglow" of hazing, whereby post-hazing members are temporarily more compliant and workmanlike (cf. Granzberg, 1972). There is systematic evidence that labor extraction is a common component of hazing for Greek letter societies and athletic teams (Allan & Madden, 2008;

Gordon, Hall, & Blankenship, 1979; Hoover, 1999; Hoover & Pollard, 2000; Shaw & Morgan, 1990; Svaan, 1967) as well as in some small-scale societies (e.g., Chapman, 2008; Loeb, 1933). In my own field work with a pseudonymous fraternity ("Alpha"), prospective members are punished harshly if they fail to carry out the assigned labor that is part of their induction. Punishment is manifest in the application of other hazing ordeals, which become a temporary set of powerful, negative incentives for doing anything that existing group members find the slightest bit objectionable. Other accounts suggest that hazing serves as this same kind of punishment for newcomer behavior in other Greek letter societies (e.g., Clark, 1915; Leemon, 1970; Stone, 1946; Walker, 1968). Further, the prediction that hazing may temporarily reduce exploitative behaviors post-hazing is supported by some experimental and survey evidence suggesting that hazing increases conformity and compliance (Granzberg, 1972; Keating et al., 2005). Indeed, my primary informant in Alpha once told me of the "pledge mentality" built up over the induction period, a temporary state that includes unquestioning obedience.

Regardless, automatic accrual theory makes predictions that are more fine-grained than the ones that have been experimentally tested or can be compared with naturalistic data. For example, because of concerns about social desirability, this experiment used a very simple measure of hazing severity, one designed to capture an immediate "gut" response as to how newcomers should be treated; but automatic accrual theory predicts a textured set of responses that at least sometimes includes labor impositions and gross behavioral regulation. These responses have not been directly measured. Additional testing of automatic accrual theory will also require real-world hazing organizations and non-Western populations.

Finally, automatic accrual theory remains a preliminary and non-comprehensive theory of hazing. Hazing's complexity and multivocality is attested to in numerous cross-cultural accounts (e.g., Morinis, 1985; Paige & Paige, 1981), and hazing is often located within other social processes that emphasize gender and maturation (e.g., Gregor & Tuzin, 2001; Herdt, 1998). Further, some hazing ordeals may have separable explanations from those suggested by automatic accrual theory (e.g., genital mutilation, Sosis et al., 2007; Wilson, 2008). Nonetheless, the results of this paper suggest that hazing may have systematic, underlying uniformities that reflect the operation of our evolved psychology of intergenerational coalitions.

Supplementary Materials

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.evolhumbehav.2013.08.007.

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