


Cross-Cultural and Cross-Organizational Evidence for an Evolved Hazing Motivation

Evolutionary Psychology
October-December 2019: 1–10
© The Author(s) 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1474704919887943
journals.sagepub.com/home/evp


Aldo Cimino¹ , Wataru Toyokawa², Mizuho Komatsu³,
Robert Thomson⁴, and Steven J. C. Gaulin¹

Abstract

We report the first cross-cultural and cross-organizational evidence for an evolved hazing motivation. Using experiments performed in the United States, Japan, and among members of a hazing and a nonhazing organization, we demonstrate an invariant set of core hazing predictors. In particular, we show that the perception of near-term group benefits, which would have been ancestrally exploitable by new group members, substantially increases desired hazing severity in all samples. Results are discussed in light of human organizational psychology and the difficulty of reliably suppressing hazing behavior.

Keywords

coalitional psychology, hazing, initiations, newcomers, rites of passage

Date received: July 9, 2019. Revision Submitted: October 21, 2019; Accepted: October 21, 2019

Hazing, the abuse of new and prospective group members, is a strikingly common phenomenon among the world's cultures (for a review, see Cimino, 2011). Humans in a wide array of societies have converged on similar methods of inducting newcomers that appear both arbitrary and costly. Indeed, hazing is defined here as the creation of induction costs that do not appear to be group-relevant assessments or preparations (e.g., making prospective book club members do push-ups. For more on the definition of hazing, see Cimino, 2017). Hazing is also costly for hazers: Spending days, weeks, or months abusing newcomers is an effortful and time-consuming activity that requires explanation. Because hazing appears to be both a patterned and common behavior, it may have been shaped by selection to provide certain benefits for ancestral hazers. Our proposal is that some aspects of hazing motivation may reflect the operation of cognitive mechanisms designed to manage intergenerational coalitions (i.e., coalitions where new members do not wholly replace existing members). In other words, there may be a collection of coalitional psychology mechanisms that include subroutines designed to motivate at least some of the behavioral phenomena commonly observed in hazing ordeals.

In initial efforts to uncover the function of hazing, Cimino (2011, 2013) reported the first experimental tests of hazing motivation, initially conducted with University of California, Santa Barbara (UCSB) college students and a representative

sample of the United States. The findings were consistent with the theory that hazing functions, in part, to prevent the near-term exploitation of group-controlled benefits (automatic accrual theory, detailed below). However, neither samples of U.S. college students nor the general population of the United States demonstrate the universality of these ostensible cognitive mechanisms (e.g., Henrich, Heine, & Norenzayan, 2010). Evidence for an evolved hazing motivation also requires gathering data from divergent cultures. Further, past studies lacked strong manipulations of key variables and used relatively broad measures that did not have the precision to falsify certain aspects of automatic accrual theory (see Cimino, 2013). To mitigate some of these deficiencies, we provide a conceptual replication of prior experiments on hazing motivation that extends the sampled populations and methods as follows:

¹ Department of Anthropology, Center for Evolutionary Psychology, University of California, Santa Barbara, CA, USA

² Department of Psychology, University of Konstanz, Germany

³ Independent scholar

⁴ School of Humanities, Hokusei Gakuen University, Sapporo, Japan

Corresponding Author:

Aldo Cimino, Department of Anthropology, Center for Evolutionary Psychology, University of California, Santa Barbara, CA 93106, USA.
Email: aldo@aldocimino.com



1. We report the first cross-cultural test of hazing motivation, comparing the hazing motivations of students in Japan with students in the United States.
2. We report the first cross-organizational test of hazing motivation, comparing the hazing motivations of current members of two divergent organizations within the United States: one with a pro-hazing orientation (an actively hazing college fraternity) and one with an anti-hazing, newcomer-welcoming orientation (a non-hazing college sorority).
3. We employ multiple, theory-relevant measures of hazing motivation and provide a direct manipulation of near-term group benefits, a key variable predicted by automatic accrual theory to drive hazing motivation.

Automatic Accrual Theory

Automatic accrual theory is a partial theory of hazing initially proposed by Cimino (2011). The theory is *partial* in recognition of the fact that hazing is a complex phenomenon that likely results from a number of causal forces. Many ethnographies attest to hazing's linkages within a broad web of cultural concerns (e.g., maturation, gender, ritual, warfare; see Grimes, 2000; Herdt, 1998). Multiple subtheories of hazing and related practices will likely be needed to account for all such complexity (e.g., McCreary & Schutts, 2019; Thomas & Meglich, 2019).

Below, we explain the logic of automatic accrual theory and provide some additional refinements:

1. Enduring coalitions were adaptively important in human ancestral environments due to their efficacy in realizing shared goals and amplifying formidability in coalitional aggression and defense (e.g., Bowles, 2009; Tiger, 1984; Tooby & Cosmides, 2010).
2. Enduring coalitions frequently incorporated multiple new members simultaneously. We expect that a number of causal forces contributed to this regularity: the sometimes urgent need to replace missing members, the benefits of quick coalitional expansion, the temporary and contingent availability of age sets of prospective members, and so on.
3. Enduring coalitions created and sustained group benefits over time (e.g., club goods, common-pool resources, specialized knowledge), some of which we categorize as automatic (Cimino & Delton, 2010; Delton & Cimino, 2010), meaning that they would have been available to newcomers at little or no cost (e.g., status, protection, common property).
4. Coalitions with high automatic benefits required—on average—more work (and sometimes more danger) to sustain and protect their benefits than coalitions with low automatic benefits. For such high automatic benefit coalitions, this work may have been extensive. Depending on the specific ancestral environment, this may have

included maintaining shared property, creating coalitional or ritual regalia, preparing for communal events (e.g., feasts), or engaging in contests or combat with other coalitions.

5. The existence of coalitions with substantial automatic benefits attracted exploitative strategies from free-riding newcomers. Note that while all coalitions may be vulnerable to free riding, newcomers of enduring coalitions may have been in a privileged position to free ride:
 - a. Newcomers could manipulate cues that normally disarm free rider defenses. Any observed lower levels of contribution or inappropriate levels of benefit consumption could potentially be excused as the products of lesser skill or an unfamiliarity with group norms (e.g., Delton, Cosmides, Guemo, Robertson, & Tooby, 2012).
 - b. Any new group-relevant skills learned by newcomers tended toward a high rate of change around group entry. This made it difficult to differentiate group-relevant motivation from native ability.¹
 - c. The extent to which newcomers intrinsically valued the coalition was known with less certainty than for veteran members (Cimino & Delton, 2010; Delton & Cimino, 2010). This made it harder to know whether newcomers intended to be trustworthy contributors around group entry and thereafter. Making matters more difficult, this valuation may have been subject to a rapid state of change as newcomers became more familiar with the group.
 - d. The common simultaneous entry of multiple newcomers created an environment in which it was harder to monitor all newcomer behavior at all times. This circumstance reduced the probability of detecting free riding.²
6. The recurrence of newcomer benefit-exploitation strategies over evolutionary time made the entrance of an overlapping membership generation a potential cue of heightened exploitation.
7. In response to these adaptive problems, the human mind was selected to strategically devalue newcomers to enduring coalitions. This strategic devaluation may have motivated a constellation of responses toward newcomers, including depressing their ability to automatically benefit from the coalition, advertising an increased willingness to punish even the most trivial of infractions, and attempting to enforce or extract labor inputs. By this theory, certain aspects of hazing were ancestrally adaptive because (a) amid a market of prospective members, hazing discouraged newcomers from employing a short-term associate-and-exploit strategy and (b) regardless of the existence of a member market, hazing made it more difficult for newcomers to strategically exploit their status. 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 hazing, a critical product of which was a relative reduction in exploitative newcomer behaviors (e.g., Cimino, 2013; Keating et al., 2005). Hazing provided direct fitness benefits to hazers by augmenting the coalition's ability to generate benefits (by increasing labor inputs relative to a nonhazing alternative) and preventing the decline of cooperation amid attempted free riding.

Note that the above summary would make some hazing behaviors an attempt to solve a specific and temporarily heightened free-rider problem. Hazing's sole domain would be around the time of group entry: Other, more prosaic anti-free-rider strategies are assumed to be in operation (and assumed to be more effective) once newcomers are well-understood as coalition members (e.g., Boyd, Gintis, & Bowles, 2010; Price, 2005; Price, Cosmides, & Tooby, 2002). Thus, an assumption built into this model is that, as veteran members grow in their familiarity with newcomers, they learn which members need more monitoring than others and become more adept at detecting and punishing legitimate attempts to free ride. This reduces or removes the need for hazing.

Most aspects of automatic accrual theory are aligned with decades of theorizing about hazing and initiations across the social sciences. Many scholars have suggested, for example, that hazing may select out uncommitted members, or that hazing may be an attempt to dominate newcomers for one purpose or another (e.g., Moreland & Levine, 2002; Nuwer, 2000). Unfortunately, many instances of these ideas can be vague and difficult to test. When more concrete and testable versions are considered, they are often at odds with real-world hazing behavior. For example, if hazing were a straightforward attempt to prompt a costly signal of commitment from hazing, hazing ordeals would not be coercive or deceptive (e.g., Cimino, 2011, 2016). If hazing were a straightforward attempt to establish permanent dominance over newcomers, the cessation of hazing would not result in an increase in newcomer status (for more on the problems with alternative accounts of hazing, see Cimino, 2011). A useful and generalizable theory of hazing should be broadly compatible with accounts of real-world hazing and able to identify specific contexts that are—and others that are not—likely to trigger hazing motivation. Automatic accrual theory is an attempt to provide a set of precise, evolutionarily informed predictions about some of the causes of hazing motivation and to render such predictions testable using standard psychological methods.

Predictions

Automatic accrual theory suggests a set of evolved anti-exploitation responses to newcomers that describe some commonly observed hazing behaviors. Here, we examine whether the availability of automatic benefits will prompt three inter-related anti-exploitation responses, and further whether such effects will hold across cultures and organizations. If automatic

accrual theory captures some of the adaptive logic underpinning hazing motivation:

1. Participants will desire a *harsher induction* when they believe new members to their group will obtain high (vs. low) automatic benefits. This prediction is meant to be comparable to prior predictions of overall hazing severity used in Cimino (2011, 2013). However, automatic accrual theory also makes specific predictions about the implementation of hazing (see below).
2. Participants will desire *more labor from newcomers* when they believe new members to their group will obtain high (vs. low) automatic benefits.
3. Participants will desire *more dominance over newcomers* when they believe new members to their group will obtain high (vs. low) automatic benefits.
4. All predicted effects will be observed in all samples studied, regardless of culture or organization type.

Prediction 4 is particularly important for the validity of automatic accrual theory. To be valid as a generalizable theory of hazing motivation, the theory must make predictions that obtain (a) outside the United States and (b) within real-world organizations, regardless of whether they have a pro- or anti-hazing orientation. We have included a nonhazing organization because even in an organization that is actively anti-hazing, the cognitive circuitry that motivates hazing should still be present, even if hazing behavior itself is inhibited (see General Discussion for more on the inhibition of hazing).

Method

All participants completed a vignette experiment wherein they imagined themselves as members of one of two fictional, single-sex, intergenerational coalitions (detailed below). The sex of the organization's members always matched the sex of the participant. Regardless of the group they were assigned to, participants learned that members of their organization take their participation seriously, that the organization has a high status in the eyes of outsiders and that the organization has its own property (e.g., a collectively owned building). Participants further learned that the organization is careful to test all prospective members for all necessary skills as well as for their ability to get along with existing members prior to joining. (This was stressed to ensure that if participants chose to be severe to new members after such testing, it was unlikely to reflect the straightforward assessment of group-relevant skills.) Participants read that the organization had decided to have an initiation period for new members for the first time ever, with the initiation period lasting 6 weeks. It was not yet decided whether the initiation period would be harsh, mild, or something in-between.

Manipulations

Organization focus (between subjects). Participants were randomly assigned to imagine themselves as members of either the Ice Walkers, an organization focused on extreme arctic sports and survival (initially used in Cimino, 2011) or the X Association, an organization focused on social networking. These different groups were used to (a) ensure that any observed effects were not idiosyncratic to a particular organization and (b) to better understand the impact of intense, life-threatening circumstances on desired hazing severity. To put the latter point in context, prior experiments used differences in organization focus to *indirectly* change the perception of automatic benefits, with the Ice Walkers as an example of an organization intended to imply high automatic benefits (Cimino, 2011). While these prior manipulations did alter the automatic benefits perceived by participants, they also likely altered numerous other perceived group characteristics as well. After accounting for the impact of automatic benefits, this made any remaining effect of organization focus on desired hazing severity difficult to interpret. For example, the high skill and risk-taking required to navigate the dangers of arctic survival practically requires that the Ice Walkers are composed of very serious and dedicated members. In contrast, an entomology club (used in a prior study) does not invite similarly strong assumptions. These differences may have impacted perceived cohesiveness and other variables that may have had independent effects on desired hazing severity (Cimino, 2013). To account for these issues in the present study, we attempted a narrower manipulation of organization focus. In the present study, both organizations were described as having serious members and portrayed as being high status groups with their own property. With this improved manipulation, we considered two possible outcomes: First, we might find that cooperation under life-threatening conditions motivates an overall harsher hazing process (e.g., Moreland & Levine, 2002; Sosis, Kress, & Boster, 2007). This would result in consistently more severe hazing in the Ice Walkers. Alternately, we might find that hazing's ostensible focus on short-term free riding overshadows the impact of group type on hazing severity. This would result in no consistent impact of organization focus on hazing severity. This latter possibility is not without real-world support: Some of the most brutal hazing in the United States has been performed by social fraternities similar to the X Association (e.g., Cimino, 2016; Nuwer & Bollinger, 2009), which face no life-or-death circumstances and focus primarily on camaraderie and social networking. As such, strong hazing motivations do not appear to require a particular organization focus. Nonetheless, we considered this an open question.

Benefit automaticity (within subjects). Participants read that they were going to imagine two hypothetical scenarios about their organization: one in which newcomers acquired early automatic benefits and one in which they did not. Our intent was to manipulate the *automaticity* of the organization's benefits for new members (in particular, prestige), while

holding the other aspects of the organization constant in the minds of participants. The experimental materials read as follows:

In some cases you will imagine that you are in an [organization name] where **new members gain high benefits immediately upon joining your organization**. This means that *outsiders* like new members more just because they are members of the group. This also means that outsiders are unwilling to cause trouble with new members because they know they are members of the group.

In some cases you will imagine that you are in an [organization name] where **new members gain no benefits immediately upon joining your organization**. This means that *outsiders* differentiate between new members and veterans. They do not like new members the same way that they like veterans. This also means that they are more willing to cause trouble with new members than with veteran members.

Prior to moving on in the experiment, participants were tested on their memory and comprehension of the vignette using six multiple-choice questions (e.g., the length of the planned initiation period, whether the organization has ever had an initiation, what it means to gain high benefits upon joining).

Dependent Variables

Because of concerns that social desirability might cause participants to rate their desired hazing at floor levels in all experimental conditions, all hazing dependent variables were measured first with binary, forced-choice ranking (i.e., participants selected the condition in which they would be more severe to new members) and second with continuous, 7-point rating scales (from *not at all* to *very much*). Because our predicted main effects were significant for both forced-choice and continuous measures, we report only continuous measures, as they provide better estimates when characterizing continuous variables (i.e., aspects of desired hazing severity). The three key dependent variables were (1) harshness ("How harsh should the initiation be?"), (2) labor burden ("How much work should the initiation include?"), and (3) dominance ("How controlling should the initiation be?"). For participants, harshness was defined as the extent to which the initiation is "unpleasant for new members." Control was described as "how much new members are compelled to follow the orders of veteran members and are under your strict direction during the initiation process." Initiation work was defined as "tasks that will benefit the organization and the veteran members (e.g., scrubbing the floor, taking out the trash)." Finally, participants completed a new set of questions imagining various types of newcomer behavior along with demographics and other background information. These separate measures are planned for a different study and are not reported here (for complete stimuli and data, see http://www.aldocimino.com/cimino_et_al_2019-stimuli_and_data.zip).

Study Samples

To test whether automatic accrual theory's predictions are equally supported in different cultural contexts, we employed two culturally distinct participant pools:

1. UCSB undergraduates. To provide continuity with prior work we once again employed an entirely new sample of UCSB undergraduate students. These students received course credit for participation.
2. Hokkaido University undergraduates. We recruited participants from Hokkaido prefecture, Japan. All Hokkaido participants received ¥800 (~US\$7.70).

To test whether automatic accrual theory's predictions are equally supported in organizations with different hazing orientations, we employed two additional participant pools:

3. "Beta" (a pseudonymous hazing fraternity). We recruited members of the American college social fraternity "Beta," who participated with the understanding that identifying information about their fraternity would not be included in any published work (e.g., real name and location). The chapter was paid \$500, and each Beta member who chose to participate received \$5.00.
4. "Alpha-S" (a pseudonymous nonhazing sorority). We recruited members of the American college social sorority "Alpha-S," who, like Beta, participated with the understanding that their identifying information would not be published. The chapter was paid \$500, and each Alpha-S member who chose to participate received \$5.00.

Sample-Specific Details and Modifications

University of California ($N = 177$, 93 women) and Hokkaido University undergraduates ($N = 99$, 46 women). Surveys were computer driven and presented in lab environments in the United States and Japan. A stimulus-comprehension test did not allow participants to proceed until they answered all questions correctly. For Hokkaido students, all stimuli were translated from English to Japanese by Wataru Toyokawa, with back-translation performed by Robert Thomson to reconcile any misunderstandings. Because we employed separate Greek letter society samples (see below), we excluded from analysis any UCSB students who indicated being a current or past member of a fraternity or sorority or who indicated being a part of any other recent studies the lead author had conducted on hazing motivation.

Beta ($N = 37$) and Alpha-S ($N = 36$). Surveys were given with pen and paper and conducted at the fraternity/sorority house for any current members who wished to participate. We planned to only use those Beta and Alpha-S participants who answered 100% of the comprehension questions correctly, as our computer surveys did not allow participants to proceed until doing so. An initial visit to Beta yielded 15 of 53 participants that correctly answered all comprehension questions,

while an initial visit to Alpha-S yielded 28 of 52. A second visit was made to both organizations to invite additional participants who had not been a part of the first visit. This time, after completing the comprehension test, the survey was paused, and the researcher noted the correct answer to each comprehension question, so as to approximate the computer correction performed for UCSB and Hokkaido undergraduates. All participants from the second round were combined with the subset of first round participants who had independently answered all comprehension questions correctly. As before, we excluded from analysis any individuals who indicated being a part of any other studies the lead author had recently conducted on hazing motivation.

Analysis

We used mixed-model ANOVAs for all analyses. While our core predictions concern the main effect of benefit automaticity on three measures of hazing severity, we also tested for a main effect of organization focus and for interactions between hazing severity and organization focus. Due to the possibility of sex-differentiated responses, we tested for a main effect of sex and for sex-based interactions in our two samples with a mixed-sex participant pool (UCSB and Hokkaido undergraduates). Thus, for UCSB and Hokkaido undergraduates, we used a $2 \times 2 \times 2$ design: (organization focus, between) \times (benefit automaticity, within) \times (sex). For Beta and Alpha-S, we used a 2×2 design: (organization focus, between) \times (benefit automaticity, within).

Results

All significance values are two-tailed, only significant effects are reported.

Prediction 1: Did participants desire a harsher initiation when their organization had more automatic benefits?

Yes; benefit automaticity substantially increased the harshness of the initiation (Table 1, Figure 1). This effect was present in all samples. Among UCSB students, men desired harsher initiations than women ($F_{1,173} = 7.55, p = .007$, partial $\eta^2 = .04$).

Prediction 2: Did participants desire more labor burden when their organization had more automatic benefits?

Yes; benefit automaticity substantially increased the amount of labor required of new members (Table 1, Figure 1). This effect was present in all samples. Among UCSB students, the effect of automatic benefits was larger in the X Association than in the Ice Walkers ($F_{1,173} = 4.26, p = .04$, partial $\eta^2 = .02$).

Prediction 3: Did participants desire a more domineering initiation when their organization had more automatic benefits?

Yes; benefit automaticity substantially increased the amount of dominance exerted over new members (Table 1, Figure 1). This

Table 1. Main Effect of Automatic Benefits on Hazing Severity.

Sample	N	Low Auto	High Auto	Partial η^2
UC Santa Barbara	177			
Initiation harshness		3.35 (1.49)	4.98 (1.84)	.36***
Initiation labor burden		4.00 (1.47)	5.78 (1.37)	.47***
Initiation dominance		3.78 (1.57)	5.18 (1.76)	.29***
Hokkaido University	99			
Initiation harshness		3.38 (1.26)	5.65 (1.26)	.49***
Initiation labor burden		4.43 (1.42)	5.49 (1.31)	.24***
Initiation dominance		4.26 (1.42)	5.34 (1.58)	.19***
Hazing Fraternity ("Beta")	37			
Initiation harshness		3.73 (1.39)	5.73 (1.22)	.55***
Initiation labor burden		3.68 (1.80)	5.70 (1.24)	.45***
Initiation dominance		3.86 (1.65)	5.30 (1.66)	.28**
Nonhazing Sorority ("Alpha-S")	36			
Initiation harshness		2.36 (1.73)	3.94 (1.97)	.39***
Initiation labor burden		3.03 (1.59)	4.56 (1.86)	.61***
Initiation dominance		3.39 (1.76)	4.89 (1.67)	.58***

Note. Means (SDs) of desired aspects of initiation severity.

* $p < .05$. ** $p < .01$. *** $p < .001$.

effect was present in all samples. Among UCSB students, the effect of automatic benefits was larger in the X Association than in the Ice Walkers ($F_{1,173} = 5.00, p = .027$, partial $\eta^2 = .03$).

Prediction 4: Were all predicted effects observed in all samples?

Yes; all predicted effects were significant and nontrivial across all four samples (Table 1, Figure 1).

General Discussion

As predicted by automatic accrual theory, increasing the perception of benefit automaticity in the context of an enduring, intergenerational coalition significantly and nontrivially increased the desire to haze new members. Further, the perception of automatic benefits not only increased desired initiation harshness but also increased the desired dominance over new members and demands for new-member labor during the initiation. Prior studies of automatic accrual theory used indirect and relatively subtle stimuli, yielding small to moderate effects of automatic benefits on desired hazing. In comparison, our improved stimuli, using explicit manipulations of automatic benefits and more careful measures of hazing severity, generated moderate to large effects.

Across samples, we found no consistent effects of organization focus on hazing severity, despite the profound differences in the activities of the Ice Walkers and the X Association. Thus, it is possible that coalition value (i.e., the extent to which a coalition is cohesive, enduring, and benefit producing) indexes desired hazing severity better than the need for future intense cooperation, regardless of whether it occurs in life-threatening circumstances. This is consistent with the premise of automatic accrual theory that hazing is focused on mitigating short-term exploitation problems that were ancestrally common around group entry rather than long-term exploitation problems. In the latter case,

one would expect the nature of the group's future activities to have a stronger impact on hazing severity. Regardless, neither of our groups were engaged in warfare, and warfare may be a special case of cooperation in life-threatening circumstances. A warlike organizational focus may have a unique impact on how new members are treated, both to minimize future exploitation (Sosis et al., 2007) and to psychologically harden or indoctrinate inductees (e.g., Ember & Ember, 2010).

Although we hypothesize the existence of universal psychological mechanisms that motivate some hazing behaviors, these same mechanisms should be sensitive to cues that were ancestrally associated with the need for different induction profiles. For example, coalitions that were highly in need of additional members (and existed amid a market of prospective members) may have used automatic benefits to attract and retain newcomers. Individuals in these coalitions may feel motivated to treat newcomers well, even when they provide high automatic benefits (e.g., Cini, Moreland, & Levine, 1993; Sánchez-Jankowski, 1991). Other such facultative shifts are possible, making the positive relationship between automatic benefits and hazing contingent rather than obligate.

As with prior studies, we found significant effects in both men and women. Given that both sexes form enduring coalitions, this is not surprising at a basic level (e.g., Ericksen, 1989; Webster, 1908). However, ancestral male coalitions likely had a greater average impact on their participants' fitness, and men appear to have evolved some sex-differentiated coalitional mechanisms (e.g., Bugental & Beaulieu, 2009; Tooby & Cosmides, 2010). As such, one might expect men to be more sensitive to automatic benefits than women, though the few studies conducted thus far do not suggest as much. Instead, they sometimes show a main effect of sex, with men hazing more severely than women (Cimino, 2011, 2013). Men also appear to haze more severely in the real world (e.g., Allan & Madden, 2012; Hoover, 1999; Hoover & Pollard, 2000; Nuwer & Bollinger, 2009). In the present study, this is evident in the UCSB sample (but not the Hokkaido University sample). Given the nascent state of research on hazing motivation and the limited means of measurement used thus far, questions of sex differentiation (presence and interpretation) remain open.

Importantly, relevant ancestral cues for the mechanisms that motivate hazing are unlikely to include out-groups that disapprove of hazing, as are found in modern environments (e.g., college administrators, anti-hazing advocates). To be sure, these groups may sometimes reduce hazing by a credible threat of punishment, but such tactics may have little impact on the motivational machinery underlying hazing, even if hazing behavior is suppressed. This is ostensibly evidenced in the experimental results from Alpha-S but may also be visible in the high prevalence of hazing in the United States (e.g., Allan & Madden, 2012; Hoover & Pollard, 2000) despite decades of concerted efforts to decrease its social acceptability and legality (e.g., Barber, 2012; Nuwer, 2004). We expect that many currently nonhazing organizations will drift toward hazing over time, especially if the organization produces significant automatic benefits. Even organization-wide reforms that radically

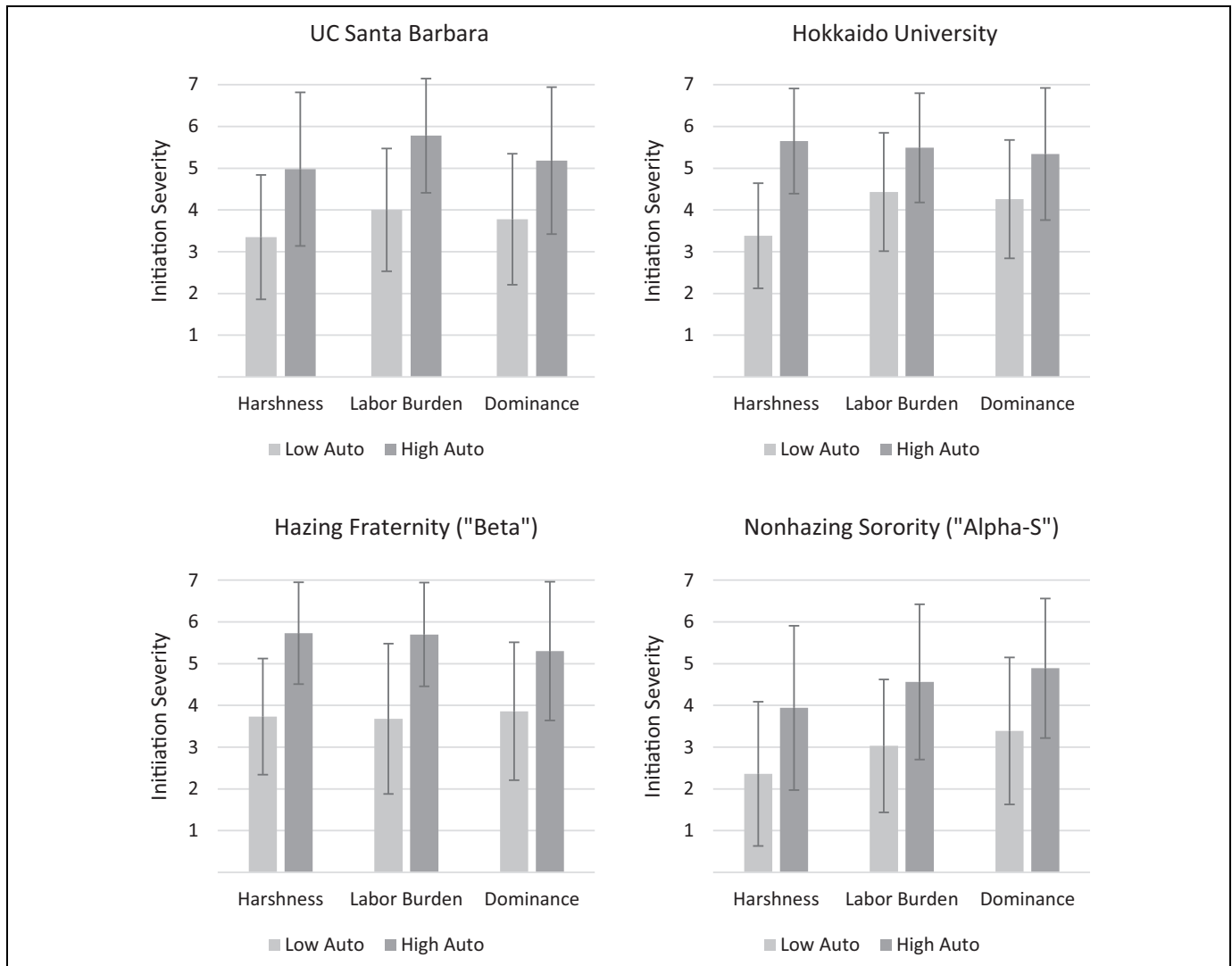


Figure 1. Low versus high benefit automaticity. Bars show means for desired aspects of initiation severity (error bars show standard deviations). For exact values and effect sizes, see Table 1. Within each sample, all low versus high auto comparisons for the same variable are significant.

reverse past hazing behavior are predicted to leave hazing motivation intact and easily summoned (Cimino, 2019). Effectively, such reforms will only give the appearance of having stamped out so-called “hazing culture” (e.g., Iverson & Allan, 2004). In so far as an instance of hazing culture is initially established by the basic motivations to engage in the behavior, it is possible that hazing culture may be neither created nor destroyed, only contingently evoked or suppressed.

Can General Reasoning Mechanisms Explain Our Results?

The evidence for some cognitive adaptations is derived from demonstrating decisions that appear nominally biased or irrational but would nonetheless have been adaptive in ancestral environments (e.g., Haselton & Buss, 2000). As a set of behaviors, hazing passes a first-order test of irrationality. That is, it

makes little obvious sense to spend weeks or months harming or harassing one’s future allies. But a more stringent, second-order test remains: How would one know empirically whether individuals are deciding to haze using mechanisms that have design for hazing? What if individuals are using more general means-ends analyses that happen to arrive at hazing as a rational solution to the problems described by automatic accrual theory? We think that there is additional evidence that militates against this alternative account.

First, we take cognitive mechanisms for coalitional continuity to be highly probable. Because of the importance of coalitional success to human fitness, humans appear to have adaptations for coalitional offense and defense, alliance making, leadership and followership, the management of free riders, and so on (e.g., Ackerman et al., 2006; Kurzban, Tooby, & Cosmides, 2001; Tooby, Cosmides, & Price, 2006; Van Vugt, Hogan, & Kaiser, 2008). This increases the probability

a priori that there are also cognitive design features around new member integration. It would be very odd if such a critical process were left to mechanisms lacking domain-specific assumptions. Indeed, experimental data suggest that people attend to information about group tenure and make relatively strong and automatic assumptions about group newcomers (Cimino & Delton, 2010; Delton & Cimino, 2010).

Second, we suggest that nonspecific reasoning mechanisms predict more variable or error-prone responding than seen in our experiments or those of Cimino (2011, 2013). In other words, while more general reasoning mechanisms might eventually lead people to hazing, it seems improbable that so many participants would immediately arrive at this strategy. One might expect participants to at least initially reject hazing until such a time as its utility becomes evident, either through direct experience with the group's newcomers or more deliberative and lengthy thought processes. Keep in mind, for every hazing experiment in this article and prior articles (Cimino, 2011, 2013), all groups were described as creating an initiation process for the first time. Thus, there were no prior traditions to adhere to and no evidence of untrustworthy newcomers in the past.³

Finally, there is some ethnographic evidence that hazing sentiments can arise in circumstances that make no rational sense while still fitting the input conditions suggested by automatic accrual theory. Specifically, Honeycutt (2005) provides an account of hazing in an online discussion group called "The X-Filesaholics." The X-Filesaholics were an Internet fan group nominally focused on the TV drama "The X-Files." (In reality, conversations spanned all manner of topics.) The X-Filesaholics imagined themselves as situated inside "Mulder's Apartment" (a protagonist from the show). Along with this imagining included the concept of the "couch cushion." Each new member, upon introducing themselves to the group, was granted an imaginary couch cushion (ostensibly a place on an ever-expanding couch). Each couch cushion was assigned a number based on the order of group entry, with veteran members having the lowest numbers (and thus higher status). Note that this is a situation where group members are imagining themselves as operating inside their own shared group property where newcomers are being granted automatic benefits upon entry (both couch cushions and their place inside the apartment). Moreover, because the X-Filesaholics discussed all kinds of topics, they ostensibly grew closer over time and began to see themselves as an enduring coalition, one with its own established culture. Needless to say, several months after the discussion group was created, veterans started hazing newcomers:

When a newcomer requests membership, an established member gives them a virtual toothbrush and instructs them to "clean" or "scrub" the [virtual] apartment. The newcomer is also ordered to sit on a virtual ice block in the waiting room of Mulder's Apartment until their couch cushion number is assigned. The norm regarding this activity, though not explicitly stated, is that newcomers will abide by the cleaning

directive without resistance and without questioning the established member's motives.

Newcomers were made to endure this (virtual) hazing for 2 weeks before being granted a couch cushion. Here, we have an instance where, by strict rational logic, hazing cannot prevent any kind of cooperative exploitation as the group is a discussion group with neither a virtual nor a real-world cooperative component. However, because members of the X-Filesaholics ostensibly began to imagine themselves as participants in an enduring coalition with its own automatic benefits, their minds acted as though the probability of future cooperation was high and newcomers were a potential threat.

Regardless of the above, we agree with Williams (1966) that adaptations have a high burden of proof and we do not claim that the sum of the available evidence firmly establishes cognitive design for hazing. Instead, we take the current experiments as stepping-stones in a larger project to test the validity of automatic accrual theory and to better understand the nature of hazing motivation. Our cross-cultural and cross-organizational results are consistent with the idea that hazing is partially a manifestation of mechanisms designed to mitigate exploitation by new coalition members.

Acknowledgments

We thank the aid of an anonymous research assistant along with helpful comments provided by Nancy Collins and an anonymous reviewer.


Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported in part by University of California intramural research funds and the Japan Society for the Promotion of Science.

ORCID iD

Aldo Cimino  <https://orcid.org/0000-0002-6404-864X>

Notes

1. We consider group-relevant skills to be those skills necessary to operate as a legitimate member. Examples include how to craft or use specific tools, create ritual implements, cook specific food items, clean or maintain group property, perform complex seasonal rituals, and so on. In practice, every group-relevant skill is not merely the skill broadly considered (e.g., "cleaning"), but the specific performance of the skill that the group considers "correct," which may be highly idiosyncratic. Thus, learning a new group-relevant skill encompasses learning how to apply an extant skill in a way that accords with the preferences of the group in question.
2. We expect this regularity to have exacerbated the aforesaid issues with newcomers, but we do not claim that it is strictly required by our model.
3. This line of reasoning is not meant to imply that, in the real world, we expect hazing to arise instantaneously when a coalition is

founded. Our vignettes were deliberately designed to show participants that both the Ice Walkers and the X Association are already well-established, contain serious and dedicated members, and so on.

References

- Ackerman, J. M., Shapiro, J. R., Neuberg, S. L., Kenrick, D. T., Becker, D. V., Griskevicius, V., . . . Schaller, M. (2006). They all look the same to me (unless they're angry): From out-group homogeneity to out-group heterogeneity. *Psychological Science, 17*, 836–840.
- Allan, E. J., & Madden, M. M. (2012). The nature and extent of college student hazing. *International Journal of Adolescent Medicine and Health, 24*, 83–90.
- Barber, J. P. (2012). "Ever after strictly and rigidly obeyed-with some exceptions": Administrative responses to hazing in the 1870s. *Oracle, 7*, 1–21.
- Bowles, S. (2009). Did warfare among ancestral hunter-gatherers affect the evolution of human social behaviors? *Science, 324*, 1293–1298. doi:10.1126/science.1168112
- Boyd, R., Gintis, H., & Bowles, S. (2010). Coordinated punishment of defectors sustains cooperation and can proliferate when rare. *Science, 328*, 617–620.
- Bugental, D. B., & Beaulieu, D. A. (2009). Sex differences in response to coalitional threat. *Evolution and Human Behavior, 30*, 238–243. doi:10.1016/j.evolhumbehav.2009.02.002
- Cimino, A. (2011). The evolution of hazing: Motivational mechanisms and the abuse of newcomers. *Journal of Cognition and Culture, 11*, 241–267.
- Cimino, A. (2013). Predictors of hazing motivation in a representative sample of the United States. *Evolution and Human Behavior, 34*, 446–452.
- Cimino, A. (2016). Fraternity hazing and the process of planned failure. *Journal of American Studies, 52*, 1–23.
- Cimino, A. (2017). Defining hazing: Why popular definitions are misleading and counterproductive. *Journal of Higher Education Management, 32*, 135–148.
- Cimino, A. (2019). Embrace & reform: Ending hazing's prohibition era. Manuscript submitted for publication.
- Cimino, A., & Delton, A. W. (2010). On the perception of newcomers: Toward an evolved psychology of intergenerational coalitions. *Human Nature, 21*, 186–202.
- Cini, M. A., Moreland, R. L., & Levine, J. M. (1993). Group staffing levels and responses to prospective and new group members. *Journal of Personality and Social Psychology, 65*, 723–734.
- Delton, A. W., & Cimino, A. (2010). Exploring the evolved concept of NEWCOMER: Experimental tests of a cognitive model. *Evolutionary Psychology, 8*, 317–335.
- Delton, A. W., Cosmides, L., Guemo, M., Robertson, T. E., & Tooby, J. (2012). The psychosemantics of free riding: Dissecting the architecture of a moral concept. *Journal of Personality and Social Psychology, 102*, 1252–1270.
- Ember, C. R., & Ember, M. (2010). Explaining male initiation ceremonies: New cross-cultural tests and a catalytic model. *Journal of Cross-Cultural Psychology, 41*, 605–616.
- Ericksen, K. P. (1989). Male and female age organizations and secret societies in Africa. *Behavior Science Research, 23*, 182–204.
- Grimes, R. L. (2000). *Deeply into the bone: Re-inventing rites of passage*. Berkeley: University of California Press.
- Haselton, M. G., & Buss, D. M. (2000). Error management theory: A new perspective on biases in cross-sex mind reading. *Journal of Personality and Social Psychology, 78*, 81–91. doi:10.1037//0022-3514.78.1.81
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *The Behavioral and Brain Sciences, 33*, 61–83.
- Herd, G. H. (Ed.). (1998). *Rituals of manhood: Male initiation in Papua New Guinea*. New Brunswick, NJ: Transaction.
- Honeycutt, C. (2005). Hazing as a process of boundary maintenance in an online community. *Journal of Computer-Mediated Communication, 10*, Article 3. doi:10.1111/j.1083-6101.2005.tb00240.x
- Hoover, N. C. (1999). *National survey: Initiation rites and athletics for NCAA sports teams*. Retrieved from <http://www.alfred.edu/news/html/hazingpdf.html>
- Hoover, N. C., & Pollard, N. J. (2000). *Initiation rites in American high schools: A national survey* (Final Report). Retrieved from http://www.alfred.edu/news/hazing_study.pdf
- Iverson, S. V., & Allan, E. J. (2004). Initiating change: Transforming a hazing culture. In H. Nuwer (Ed.), *The hazing reader* (pp. 252–274). Bloomington: Indiana University Press.
- Keating, C. F., Pomerantz, J., Pommer, S. D., Ritt, S. J. H., Miller, L. M., & McCormick, J. (2005). Going to college and unpacking hazing: A functional approach to decrypting initiation practices among undergraduates. *Group Dynamics: Theory, Research, and Practice, 9*, 104–126.
- Kurzban, R., Tooby, J., & Cosmides, L. (2001). Can race be erased? Coalitional computation and social categorization. *Proceedings of the National Academy of Sciences of the United States of America, 98*, 15387–15392. doi:10.1073/pnas.251541498
- McCreary, G., & Schutts, J. (2019). Why hazing? Measuring the motivational mechanisms of newcomer induction in college fraternities. *Journal of Cognition & Culture, 19*, 343–365.
- Moreland, R. L., & Levine, J. M. (2002). Socialization and trust in work groups. *Group Processes & Intergroup Relations, 5*, 185–201.
- Nuwer, H. (2000). *High school hazing: When rites become wrongs*. New York: F. Watts.
- Nuwer, H. (Ed.). (2004). *The hazing reader*. Bloomington: Indiana University Press.
- Nuwer, H., & Bollinger, C. (2009). Hazing. In J. Nicoletti, S. Spencer-Thomas, & C. Bollinger (Eds.), *Violence goes to college: The authoritative guide to prevention and intervention* (pp. 194–216). Springfield, IL: Charles C. Thomas.
- Price, M. E. (2005). Punitive sentiment among the Shuar and in industrialized societies: Cross-cultural similarities. *Evolution and Human Behavior, 26*, 279–287.
- Price, M. E., Cosmides, L., & Tooby, J. (2002). Punitive sentiment as an anti-free rider psychological device. *Evolution & Human Behavior, 23*, 203–231.

- Sánchez-Jankowski, M. N. (1991). *Islands in the street: Gangs and American urban society*. Berkeley: University of California Press.
- Sosis, R., Kress, H. C., & Boster, J. S. (2007). Scars for war: Evaluating alternative signaling explanations for cross-cultural variance in ritual costs. *Evolution and Human Behavior, 28*, 234–247.
- Thomas, B. J., & Meglich, P. (2019). Justifying new employees' trials by fire: Workplace hazing. *Personnel Review, 48*, 381–399.
- Tiger, L. (1984). *Men in groups* (2nd ed.). New York: Marion Boyars.
- Tooby, J., & Cosmides, L. (2010). Groups in mind: The coalitional roots of war and morality. In H. Høgh-Olesen (Ed.), *Human morality and sociality: Evolutionary and comparative perspectives* (pp. 191–234). New York: Palgrave Macmillan.
- Tooby, J., Cosmides, L., & Price, M. E. (2006). Cognitive adaptations for n-person exchange: The evolutionary roots of organizational behavior. *Managerial and Decision Economics, 27*, 103–129.
- Van Vugt, M., Hogan, R., & Kaiser, R. B. (2008). Leadership, followership, and evolution: Some lessons from the past. *American Psychologist, 63*, 182–196.
- Webster, H. (1908). *Primitive secret societies: A study in early politics and religion* (Kessinger, 2006 ed.). New York: Macmillan.
- Williams, G. C. (1966). *Adaptation and natural selection: A critique of some current evolutionary thought*. Princeton, NJ: Princeton University Press.