

**Cultural Psychological Processes Underlying Workplace Remuneration in Japanese and
European American Contexts**

Aya Uchida¹, Masataka Nakayama², and Yukiko Uchida²

¹ Graduate School of Human and Environment Studies, Kyoto University

² Kokoro Research Center, Kyoto University

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Author Note

ORCID: Aya Uchida: 0000-0003-2284-8072; Masataka Nakayama: 0000-0003-3904-4986;
Yukiko Uchida: 0000-0002-8336-2423. Aya Uchida is now at The University of Melbourne,
Australia. Correspondence concerning this article should be addressed to Yukiko Uchida
(uchida.yukiko.6m@kyoto-u.ac.jp), Kokoro Research Center Kyoto University, Yoshida,
Sakyo-ku, Kyoto 606-8501, Japan. Telephone: +81 75-753-9679. Fax: +81 75-753-9679.

Declarations

Availability of data, code and materials

Raw data, code and materials are available at <https://osf.io/ayghq/>

Pre-registration statement

We did not pre-register the study or an analysis plan.

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Conflict of interest

We have no known conflict of interest to disclose.

Ethics approval

The protocol of the study was approved by a local ethics committee at Kyoto University.

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Abstract

Japan's remuneration systems are moving away from seniority-based pay towards individual performance-based pay. We tested how the latter system works within the Japanese cultural context and whether the operation and functioning of the system reflects general psychological tendencies found in Japan. Japanese (Study 1 $n = 197$; Study 2 $n = 235$) and European American (Study 1 $n = 201$; Study 2 $n = 186$) participants read vignettes that described workplace success centered on a focal employee and including a team. Participants attributed contribution and rewards (financial and status) to a range of agents and factors with graded levels of foci, from the focal employee being the greatest and luck being the least. In general, we found that Japanese participants attributed greater contribution and reward to less focal agents and factors while European American participants attributed greater contribution and reward to more focal agents, in addition to some specific differences between the tasks and reward types. We discuss implications for more nuanced theorizing of the interaction between institutional systems and psychological processes.

Keywords: Causal Attributions, Culture, Decision-making, Individual Performance-based pay, Japan, Remuneration Psychology

Cultural Psychological Processes Underlying Workplace Remuneration in Japanese and European American Contexts

A stagnant economy has Japanese organizations steadily reforming their remuneration systems to include more individual performance-based pay systems (Ogihara, 2017; Shibata, 2002). An implicit assumption of the reforms is that individual performance-based systems will work as they do in their original cultural context, such as the United States (US). However, institutional systems are not independent from other cultural systems, as they operate and function via social interactions, and individual and collective psychological processes (Hamedani & Markus, 2019). Psychological processes which are important for carrying out individual performance-based remuneration include evaluating individual work performance and making decisions for rewarding individual employees. Our review of existing work highlights how cultures differ in causal attributions (i.e., performance evaluation), social decision making (i.e., deciding who to credit) and emotional reactions (i.e., pride) to individual achievement (i.e., receiving large rewards) – which together suggest that individual performance-based remuneration systems in Japan, even if mirroring the US, would not operate or function in the same way. In this research we aimed to demonstrate how those in Japanese cultural contexts evaluate performance and decide on remuneration differently from those in European American contexts. To do this, we created experimentally controlled scenarios and had participants evaluate performance and make remuneration decisions. First, we briefly compare the two different remuneration systems before reviewing cultural psychological findings that inform our predicted cultural differences in remuneration psychology and behavior.

Overview of Remuneration in Japan and the US

Japan's long-standing remuneration system relies on seniority to inform remuneration – where remuneration is tethered to age and company tenure. This compares to the US, where

the long-standing norm is for professions to include job criteria for evaluators to discern individual employee performance and inform remuneration (Endo, 1998). Japan's seniority-based system exemplifies the persistence of a culture built around vertical hierarchy, cooperation and social harmony in and outside of the workplace (Nakane, 1970), and highlights the reliance on an impersonal and external construct (time) to inform remuneration. Despite continuing cultural forces that maintain the value of seniority-based remuneration, it is perceived as economically unsustainable due to Japan's stagnant economy since its collapse in the 1990s (Morris et al., 2006). Economic pressure is exacerbated by an ageing workforce resulting in unprecedentedly high wage costs, and globalizations' influences on increased competition, internationalization, and outsourcing (Morris et al., 2006; Shibata, 2002). Globalization also brings social and cultural changes by encouraging uptake of positively viewed foreign practices (Hong & Cheon, 2017). However, Japan's original seniority-based remuneration system has operated as the norm and is intertwined with cultural psychological processes, while the same is true for the individually-based performance remuneration system in the US. As a result, we would expect differences in psychological processes relevant for how Japanese and European American people evaluate individual workplace performance and make remuneration decisions.

Psychological Differences in the US and Japan

Thinking Styles

Psychological processes such as attention allocation, memory and visual scene perception that occur at the individual level are broadly referred to as 'Thinking Styles' and vary with cultural context (Masuda & Nisbett 2000; Nisbett et al., 2001). An Analytic thinking style describes when focal objects are attended to, perceived as distinct from one another, and related through categorization (e.g., grouping a cow and chicken based on the category of animal among the options of a cow, chicken and grass), a style that is common in US cultural

contexts. Meanwhile a Holistic thinking style, more common in Japanese cultural contexts describes attending to the ‘whole picture’ and perceiving relationships between objects (e.g. cow and grass; Choi et al., 1999; Nisbett & Masuda, 2013).

Importantly, thinking styles shape causal attributions as individuals rely on either more situational (Holistic) or dispositional (Analytic) information to explain cause and behaviors. Causal attribution research shows that European Americans and East Asians meaningfully differ such that European Americans tend to overemphasize dispositional information while East Asians do not (Choi et al., 1999; Miller, 1984; Morris & Peng, 1994). Culturally divergent thinking styles should therefore inform performance evaluations. Through analytic thinking, an individual’s exceptional work performance could lead to attributing the consequence (e.g., earning the company substantial profit) to the focal employee’s disposition (e.g. ability). Holistic thinking, however, could enhance attribution to more situational and external factors. Indeed, Japanese relative to North American students tended to attribute self-success to the most external factor of luck (Imada & Ellsworth, 2011).

Models of Agency

How we explain behavior is also influenced by our conception of agency, which differs according to how we see ourselves and others. In Japanese cultural contexts, an interdependent self-construal is more common and describes when the self is construed in relation to others and the social context. This differs from those in US cultural contexts where an independent self-construal is more common, and the self is construed as distinct and unique (Markus & Kitayama, 1991). When individuals see themselves as disconnected from others and have a tendency towards dispositional and analytic thinking, this likely contributes to a belief that agency is also a disposition-like trait sourced within the individual and disconnected from others (Menon et al., 1999; Morris et al., 2001). This ‘Disjoint model of agency’ was documented in first-person explanations from US gold-medal athletes and US media

commentary which tended to describe success as based on dispositions like strength and stamina (Markus et al., 2006). Meanwhile a ‘Conjoint model of agency’ describes how Japanese athletes and media referenced other people and contextual factors such as coaches, family and upbringing to attribute success. When evaluating an individual employee’s performance, a disjoint model of agency could lead to attributing success to the individual employee, while a conjoint model of agency could lead to attributing success to more peripheral agents (e.g., colleagues) and situational/external factors such as luck (Imada & Ellsworth, 2011).

Proxy crediting

In line with the conjoint model of agency, Japanese people are also more inclined to believe that groups possess agency; evidenced by a tendency to blame or credit leaders of the group by proxy (Zemba, 2006; Zemba et al., 2006; Zemba & Young, 2012). Relative to European American participants, Japanese participants’ tend to blame (or credit) group leaders even when the leader is recognized as not having causally contributed to unsuccessful (or successful) outcomes, and company presidents have assumed blame and retired for employee mistakes even when they became president after the incident (Zemba et al., 2006). This proxy crediting found in Japanese cultural contexts would justify rewarding group leaders for success whether or not they causally contributed to success.

Emotions

To receive praise and reward for performance is an achievement. However, individual achievement has different connotations, appraisals and evokes different emotions depending on the cultural context. Individual achievement is culturally valued in North American cultural contexts and is linked with the emotion of pride (Imada & Ellsworth, 2011; Stoeber et al., 2013; see also Sznycer et al., 2018). Whereas in Japanese contexts, individual achievement is overshadowed by the potential to ‘stand out’ conflicting with the value of social harmony

(Nakane, 1970). As a result, individual achievement evokes embarrassment likely as a way to mitigate expected negative evaluation and punishment from others (Maeda & Yuki, 2019; Singelis & Sharkey, 1995; Stoeber et al., 2013). These emotional differences could mean that individual financial reward has different psychological impacts in Japanese and European American cultural contexts (Kitayama et al., 2000; Kitayama et al., 2006).

The Present Research

The performance-based remuneration system intrinsically includes the process of evaluating individual work performance and making decisions to reward individual employees. Given the cultural differences outlined above, performance evaluation and decision making should differ for those in Japanese and European American cultural contexts, and therefore the operation of the performance-based remuneration systems would also differ. Indeed, early work found that Japanese managers distributed rewards more evenly and gave the lowest performing employees greater rewards relative to European American managers (Beatty et al., 1988). The present research systematically investigated the cultural differences in remuneration psychology and behavior by using experimentally controlled scenarios to measure evaluation, decision making and expected emotional reactions. In two studies, Japanese and European American participants were presented vignettes where a focal employee, with other team members, demonstrates performance that achieves company success or mitigates company failure. Participants were then asked to 1) evaluate performance, 2) decide on financial remuneration, and 3) decide/infer about status remuneration. Study 2 further asked participants to 4) infer emotional reactions of the focal employee and team members when the focal employee is given a large additional financial reward.

The recipients for performance evaluation and remuneration decision-making included agents and factors with graded levels of foci. The most focal agent was the

individual employee, followed by the team members whose contributions are explicitly explained in the vignettes. Less focal agents included management, owners/shareholders, and other parts of company (with slightly different wording depending on the study). These less focal agents and factors were scarcely mentioned in the scenarios but included as options to explore participants' inferences. Finally, luck was included as the most external possible contributing factor to attribute performance evaluation to. With these options, we tested the general hypothesis that Japanese (vs. European American) participants would attribute less contribution and reward to more focal agents (e.g., the focal employee) and would attribute more contribution and reward to less focal and more external agents/factors (e.g., luck). Though largely exploratory and descriptive, we also examined task and reward type differences between evaluations and decision making, and financial and status rewards. These are worth mentioning as differences in task and type of reward reflect different aspects of remuneration psychology and behavior, and contribute to further insight on the interaction among institutional systems, individual psychological processes, and social interactions.

Differences between performance evaluation and remuneration decisions

While performance evaluations and decision-making are both constrained by what is realistic and feasible, performance evaluations are less socioeconomically constrained than decisions about remuneration. Therefore, we theorized that if there are differences between performance evaluations and remuneration decisions this may be due to performance evaluations representing more sincere or genuinely believed attributions, while remuneration decisions are comparatively pragmatic, normative, or constrained due to the perception of potential impact on livelihoods. This could be exemplified by proxy crediting (and blaming) in Japanese contexts (Zemba, 2006; Zemba et al., 2006; Zemba & Young, 2012), which may result in Japanese participants assuming the managers, as a proxy for the company, deserve

reward even if they believe managers contributed no more (than European Americans believe) to the performance of the employees described in the scenarios.

Differences between financial and status reward

Financial rewards are the most widespread form of reward in work contexts. However, the meaning and value of money may differ according to cultural context. For example, where income equality is relatively high, increases in salary results in greater life satisfaction as it reflects a greater relative increase in social status, relative to low income equality contexts (Quispe-Torreblanca et al., 2021). Therefore, we included status rewards (promotion) in addition to financial rewards.

Study 1

Study 1 aimed to establish cultural differences between Japanese and European American participants' 1) evaluations of performance, 2) financial remuneration decisions, and 3) decisions for status remuneration.

Method

Participants and Design

All materials are available at https://osf.io/ayghq/?view_only=d36c4d9a193943c4ad1de1344e43803c. We aimed to collect 50 participants per vignette and for each participant to respond to four (of the 16) vignettes, totaling 200 participants per culture. This goal was approximately achieved with 197 Japanese and 201 US participants. Participants aged 18-to-80 years old of Japanese nationality (Japanese sample) or White/Caucasian/European American heritage (US sample) were recruited online through Lancers and Prolific respectively. From a total of 218 responses for the Japanese sample 21 surveys were removed, including 15 incomplete and six who indicated they had lived abroad for more than two years. From a total of 226 responses from the US sample, 25 surveys were incomplete and removed, leaving 201 US participants ($M_{\text{age}} = 39.1$ years; 56%

Female). Unfortunately, based on the assumption that Lancers collects demographic information, age and gender was not collected for the Japanese sample. Employment status was the only comparable demographic information (see Supplementary Materials).

Vignettes

All vignettes described a workplace challenge overcome by an individual employee (employee X) that either brings the company financial success or mitigates financial losses. A range of challenges and industries (e.g., accounting, consulting, factory, sales) were included. Every vignette explicitly states the financial success framed as a profit (Gain) or saving of losses (No Loss) to a total of 1,000,000 US Dollars or 100,000,000 Japanese Yen, in order to account for perceptions of the outcome. Vignettes were translated and back-translated using the standard method within cross-cultural studies and translation discrepancies were resolved in discussion between the authors. A pilot study tested whether 21 vignettes differed in perceived difficulty and realism across cultures, where we removed five vignettes with the greatest cultural discrepancies in realism (cultures did not differ on perceived difficulty, see Supplementary Materials). Sixteen vignettes remained and were used across both studies.

Procedure

After participants responded to the advertised survey, they were presented with survey information and a research ethics consent form approved by Kyoto University, according to the Helsinki Declaration. Participants providing consent received the study instructions and proceeded to the task. The 16 vignettes were divided into four groups of four so each participant was presented one at a time with a total of four quasi-randomly selected vignette. After reading the vignette, participants attributed contribution and rewards followed by individual measures,

other items¹ and the opportunity for comments. Participants received a thank you message and subsequent redirection to the survey platform where US participants received £2.94 GBP and Japanese participants ¥400 Japanese Yen.

Dependent Variables

Performance Evaluation

Performance evaluation was measured by asking “What percentage (%) of contribution to the profits would you attribute to each person or factor?”. Participants entered a free-digit response for seven candidate options. The candidate options always presented in the following order included: “Employee X alone”, “Inseparable contribution of X and the Team”, “Team members (not including X or management)”, “The company CEO/Top-management personnel”, “The company owner(s)/Shareholders”, “Other parts of the company”, and “Luck”. There was no minimum or maximum for each candidate (it was possible to enter 100 for one and 0 for six candidates), but a response was required and the total needed to add up to 100 to continue to the next question.

Remuneration Decisions

We measured remuneration decisions in terms of financial and status reward.

Financial. Financial remuneration in the form of profit attributions was measured by asking “How would you distribute profits of \$1,000,000? (10000 万円 for Japanese)?”. Participants were required to enter a free-digit response and the options included: “Employee X alone”, “Team members (not including X or management)”, “Company CEO/Top-management personnel”, “The company owner(s)/Shareholders”, and “The company as a

¹ Due to the exploratory nature Study 1 included other variables not included in the final analyses, see the Supplementary Materials.

whole (other than listed above)". There was no minimum or maximum but participants could not continue unless the total added up to \$1,000,000 (or 10000 万円).

Status. To measure status remuneration decisions participants attributed the likelihood of promotions by responding to "In your opinion, within one year, what are the likelihoods that the following people will receive a promotion(s)?" Participants selected a 10% range band between 0 and 100% (0-10%, 10-20% etc.) for the three candidates: "Employee X alone", "Team members (not including X or management)", and "Company CEO/Top-management personnel". For status remuneration decisions the total was not constrained but participants were required to enter a response for every candidate.

Control Variables

In addition to controlling for the vignette outcome (Gain/No Loss), employment status, and the vignette block (1-4) to account for order effects, we controlled for perceptions of team size. Team size was measured by having participants give a free-digit response for the number of people believed to be in the team after each vignette to account for the potential that more financial remuneration would be given if more people were thought to be in the team.

Results and Discussion

Analyses

To test the effect of culture on attributions while accounting for the person-specific and vignette-specific variance we used mixed-effects models. Culture (Japan = -0.5; US = 0.5), Vignette Outcome, Team size, Employment status and Block were entered as fixed effects, and Participants and Vignettes were entered as random effects with random intercepts. All analyses in all studies were performed in the R software environment using the *lme4* (Bates et al., 2015) and *lmerTest* (Kuznetsova et al., 2017) packages. Table 1 summarizes the means, standard deviations (SD), *b* weights, *p* values and 95% confidence intervals for each model. Figure 1

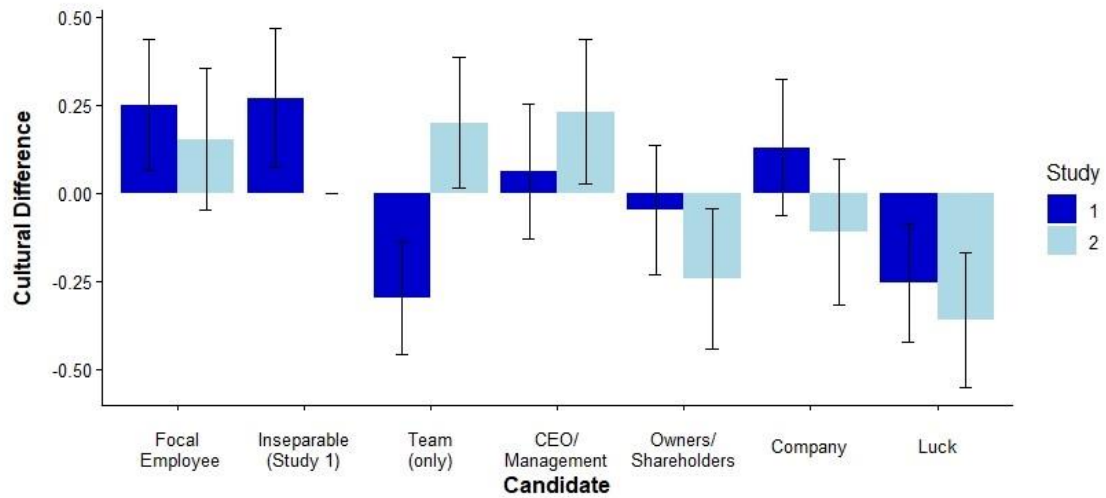
summarizes the size of cultural differences (i.e., the main effect of culture) for performance evaluations via contribution attributions.

Table 1
Study 1 Results for Mixed Models Testing the Effect of Culture on Attributions

Attribution	Candidate	Mean		SD		Culture		
		JP	US	JP	US	<i>b</i>	<i>p</i>	CI
Contribution (%)	Focal Employee	38.64	44.03	20.10	26.82	0.25	.010*	0.06, 0.43
	Inseparable.	16.00	18.79	10.43	17.29	0.27	.009**	0.07, 0.46
	Team only	19.47	14.06	12.86	13.19	-0.30	.000***	-0.46, -0.14
	CEO/Management	6.79	6.73	5.96	8.64	0.06	.529	-0.13, 0.25
	Owner/Shareholders	4.96	4.55	5.06	8.27	-0.05	.605	-0.23, 0.14
	Company as a whole	6.58	7.27	7.71	12.77	0.13	.193	-0.06, 0.32
	Luck	7.57	4.55	8.91	9.64	-0.26	.002**	-0.42, -0.09
Profit (x \$1000)	Focal Employee	20.68	20.55	18.91	22.43	-0.01	.951	-0.19, 0.18
	Team only	21.90	15.20	15.00	14.29	-0.42	.000***	-0.59, -0.24
	CEO/Management	12.91	8.82	9.26	9.24	-0.36	.000***	-0.54, -0.18
	Owner/ Shareholders	15.14	15.85	11.57	18.34	0.07	.451	-0.12, 0.26
	Company as a whole	29.37	39.59	25.22	32.77	0.43	.000***	0.24, 0.63
Promotion (%)	Focal Employee	6.70	7.27	2.59	2.35	0.30	.002**	0.11, 0.49
	Team only	4.82	4.72	2.28	2.19	-0.02	.860	-0.20, 0.16
	CEO/Management	4.32	4.23	2.34	2.58	-0.01	.949	-0.24, 0.22

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

Figure 1



Magnitude and Direction of Cultural Differences for Contribution Attribution in Study 1 and 2

Note. Each bar represents the coefficient for the effect of Culture. Positive coefficients denote greater magnitude from European American participants, negative coefficients denote greater magnitude from Japanese participants. Error bars represent 95 % confidence intervals.

Performance Evaluation

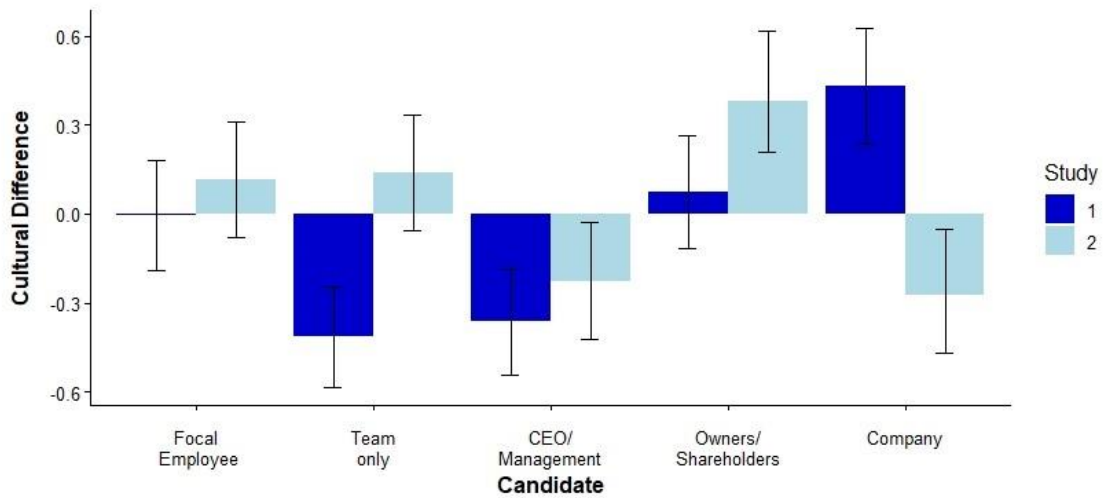
As the most focal agent, the focal employee received less contribution attribution from Japanese than European Americans. As the second most focal agents, the combined contribution of the focal employee and the team received *less* contribution attribution from Japanese, and the team not including the focal employee received more contribution attribution from Japanese than European American participants. The remaining peripheral agents (i.e., CEO/Management, Owner/Shareholders and Other parts of the Company) did not show cultural differences. As the most external factor, luck received more contribution attribution by Japanese than European Americans. These findings are, in general, in line with the traditional psychological processes found in Japan. As Figure 1 indicates, European American participants (vs. Japanese) attributed more contribution to the most focal agent. This tendency gradually decreased to non-significance for less focal agents and finally European Americans, compared to Japanese attributed significantly less contribution to the most external factor of luck. Although the general pattern is consistent with the general hypothesis, the finding that European American participants attributed more contribution to the ‘Inseparable contribution of X and the Team’ contradicts what we expected based on thinking styles and group agency. One explanation for this result is that the contribution of X and the team being inseparable could still be interpreted as centering on the individual employee X – at least over and above the contribution of only the team. To clarify, Study 2 omitted the option of inseparable contribution and forced participants to attribute contribution to only the focal employee or the team.

Remuneration Decisions

Financial remuneration

Figure 2 summarizes the size of cultural differences for financial remuneration.

Figure 2



Magnitude and Direction of Cultural Differences for Financial Remuneration in Study 1 and 2

Note. Each bar represents the coefficient for the effect of Culture. Positive coefficients denote greater magnitude from European American participants, negative coefficients denote greater magnitude from Japanese participants. Error bars represent 95 % confidence intervals.

Contrary to what we expected, there was no cultural difference for the amount of profit attributed to the focal employee. However, Japanese participants attributed more profit to the team, and to CEO/management, both who are relatively less focal agents. No cultural differences were found for owners/shareholders. Unexpectedly, the least focal and most holistic entity of ‘Company as a whole’ received *less* profit from Japanese than European American participants. Greater financial remuneration to the team in Japanese cultural contexts aligns with what we would expect based on traditional psychological tendencies such as holistic thinking – resulting in both more attention and financial rewards paid to non-focal employees. Greater financial remuneration for CEO’s/management in Japanese cultural contexts could reflect the reality of the seniority system as age, status and salary are conflated. Alternatively, CEO’s and management may be seen as more representative, and therefore afforded greater reward by proxy. According to group agency and proxy crediting we expected greater financial remuneration to the company by Japanese individuals, one reason for the opposite result could be stronger normative beliefs about profits in European American cultural contexts. Where the word ‘profits’ is semantically connected to a ‘Company’ over and above an individual employee, team or management. For this reason we modified the phrasing for the financial remuneration attribution task in Study 2.

Status remuneration

Consistent with the hypothesis, Japanese participants attributed significantly less likelihood of promotion to the focal employee. The remaining promotion attributions to less focal agents (i.e., Team only, CEO/Management) did not significantly differ by culture.

Differences between remuneration task and reward type

The overall pattern of results was consistent with the hypothesis that Japanese (vs. European American) participants attribute less contribution and reward to more focal agents and more to less focal agents and the most external factor – luck. At the same time, some results

were inconsistent with the hypothesis. Inconsistency may be partly attributable to differences in the task and/or reward type (e.g., Japanese attributed less contribution and promotion but no less profit to the focal employee). To test the consistency between tasks, we computed correlations for whether contribution attributions predicted rewards. Though statistically significant, the correlations were not strong (*r*s ranged from 0.10 to 0.46, see Supplementary Materials). Although differences could explain the inconsistent results and are potentially informative for theorizing, we withhold discussion given their exploratory nature. We briefly discuss task and reward type differences after confirming the pattern of results in Study 2.

Study 2

Study 1 found a general pattern that remuneration psychology and behavior in Japan mirrors what we would expect based on traditional Japanese psychological tendencies. Considering some inconsistencies with the hypothesized cultural differences, methodological limitations such as wording and a mistake omitting age and gender, we aimed to revise the method and replicate the results with Study 2. A secondary aim of Study 2 was to test potential changes in Japanese remuneration psychology and behavior over time, and to test cultural differences in expected emotional reactions to the remuneration decision.

Although the primary focus of the present research is the influence of individual psychology and social interactions (e.g., performance evaluation and remuneration decision) on the operation and functioning of an institutional system (i.e., performance-based system), the reverse influence is also possible. Institutional systems form a socio-ecological environment, and inform psychology and behavior (Cohen et al., 1996; Hamedani & Markus, 2019; Norasakkunkit & Uchida, 2011; San Martin et al., 2019; Talhelm et al., 2014; Uchida et al., 2019; Yamagishi & Hashimoto, 2016). Employees in Japan have been exposed to individual performance-based systems now for several decades (Ogihara, 2017; Shibata, 2002). This exposure could have shifted Japanese remuneration psychology and behavior towards

more European American remuneration psychology and behavior by the system forcing employees to focus on individual employees' performance and individually-based remuneration. To explore this possibility, Study 2 tested for an effect of age. Although age can be confounded by workforce experience and differences in incentive for endorsing seniority-based remuneration, it is still an approximation for exposure to individual performance-based systems. Documenting intergenerational differences in Japan is of societal significance as differences could shed light on potential areas of intergenerational conflict and divide regarding introduction and operation of performance-based systems. Younger generations have been exposed to newer more individualized remuneration systems for a larger portion of their careers relative to older generations. If exposure to individual performance-based processes has induced a shift in psychology that mirrors European American psychological process, younger Japanese generations should attribute more to focal agents than older Japanese generations.

We also included a measure of emotional reactions to an additional large financial reward for the focal employee, to examine the cultural meaning of the reward, and social consequences of receiving financial rewards. In European American contexts, reward for individual achievement would evoke more pride, meanwhile in Japanese contexts embarrassment would be evoked. Emotional reactions of the team members were also measured to explore social consequences of the reward, where team pride and envy were measured to approximate the social approval and disapproval of reward.

Method

The methods for Study 2 were similar to Study 1, with modifications described below.

Participants

Using the same recruitment criteria and channels as Study 1, we received 255 responses for the Japanese and 235 responses for the US sample. For the Japanese sample 56 were removed (44 incomplete and 12 who lived abroad for more than two years), leaving 199

Japanese participants ($M_{\text{age}} = 40.78$ years; 41% female). For the US sample 50 were removed (29 incomplete and 20 lived abroad for more than two years), leaving 186 European American participants ($M_{\text{age}} = 34.59$ years; 57% female). For employment status see Supplementary Materials.

Procedure

We included the same 16 vignettes but changed the grouping. The attribution tasks were kept in the same order as Study 1, with the addition of the emotional reaction item which followed the financial remuneration attribution task.

Dependent Variables

Performance evaluation

The performance evaluation item remained the same but the seven candidate options were simplified to: “Employee X alone”, “The whole team”, “Management”, “The company owner(s)/Shareholders”, “Other parts of the company”, and “Luck”.

Remuneration decisions

Financial. To account for how profits are allocated in reality, as “profits” do not go to individual employees but are rather distributed as payments, the financial remuneration task specified that the profit distributed to employees would be a “bonus payment”. The company candidate option was also changed from “The company as a whole” to “Other parts of the company” to keep the candidate option for the company consistent across contribution and remuneration attribution tasks. The candidate options for financial remuneration decisions were: “Bonus payment for Employee X”, “Bonus payment for the whole team”, “Bonus payment for management”, “The company owner(s)/shareholders”, “Other parts of the company”.

Status. To reflect the changes in candidate options for the contribution and financial attribution tasks, options for status remuneration decisions were changed to: “Employee X alone”, “The whole Team”, and “Management”.

Emotional Reactions

Emotional reactions were measured by asking participants to imagine the company paid the individual employee X an extra 1% (\$10,000), 5% (\$50,000), 10% (\$100,000) or 15% (\$150,000) of the total profit on top of the amount already given. Participants then rated the likelihood on a 7-point Likert scale (1 = ‘Very unlikely’ to 7 = ‘Very likely’) that employee X would feel embarrassed, proud, and whether the team would feel envious, and proud. The percent increase in bonus was randomly selected from the four possible amounts to assess whether the increase in bonus would strengthen the emotional reaction (see Supplementary Materials). The order of the emotions was randomized for every vignette.

Control Variables

In addition to control variables measured in Study 1 (Vignette Outcome, Team size, Employment status, and Block), Study 2 included Gender and Employment Role. Employment Role was measured by asking those who reported being employed (JP = 91.45%; US = 84.41%) whether this included one of the following options: Upper Management (JP = 2.51%; US = 3.76%), Middle Management (JP = 8.04%; US = 13.98%), Not in a Managing Role (JP = 46.73%; US = 42.47%), and Not Applicable (JP = 34.17%; US = 24.19%).

Results and Discussion

Analyses

Culture (Japan = -0.5, US = 0.5), Age (grand mean centered) and their interaction was included as a fixed effect in addition to the control variables. To partial out person-specific and vignette-specific variance in attributions, Participants and Vignettes were entered as random effects with random intercepts. Significant interactions were followed up by testing cultures

separately with the same controls. Marginal effects are reported in the Supplementary Materials. Main effects of age were out of the scope of the current investigation, and are not further discussed. Table 2 summarizes the mean, standard deviations (SD), *b* weights and *p* values for the effects of Culture, Age and the Culture x Age interaction for each model. Figures 1 and 2 summarize the size of cultural difference (i.e., the main effect of culture) for performance evaluation and financial remuneration, respectively.

Table 2

Table 2

Study 2 Results for Mixed Models Testing the Effect of Culture, Age and Culture x Age interactions on Attributions

Attribution	Candidate	Mean		SD		Culture		Age		Culture x Age	
		JP	US	JP	US	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
Contribution (%)	Focal Employee	41.52	45.42	20.89	25.60	0.15	.140	-0.01	.180	0.02	.030*
	Team	26.22	28.93	14.90	20.43	0.20	.040*	<.00	.772	-0.01	.032*
	Management	8.46	9.57	6.57	8.75	0.23	.030*	<.00	.600	<.00	.702
	Owner/Shareholders	6.87	4.66	7.95	8.28	-0.24	.017*	0.01	.257	0.02	.025*
	Company (other)	7.97	6.26	9.5	9.61	-0.11	.294	0.01	.214	-0.01	.434
	Luck	8.98	5.16	11.35	9.26	-0.36	.000***	<.00	.340	-0.02	.024*
Profit (x \$1000)	Focal Emp. (bonus)	18.49	20.22	19.11	20.10	0.12	.245	-0.01	.228	0.01	.390
	Team (bonus)	21.74	23.73	15.57	23.12	0.14	.167	<.00	.754	-0.01	.303
	Management. (bonus)	10.82	9.04	8.53	9.31	-0.23	.025*	-0.01	.037*	0.02	.052 ⁺
	Owner/Shareholders	16.56	22.32	13.95	23.77	0.38	.000***	0.01	.013*	0.01	.105
	Company (other)	32.39	24.69	26.77	27.36	-0.28	.016*	<.00	.719	-0.01	.109
Promotion (%)	Focal Employee	6.77	7.33	2.40	2.20	0.26	.024*	<.00	.789	-0.01	.139
	Team	4.91	5.10	2.08	2.19	0.16	.126	0.01	.175	-0.01	.302
	Management	4.09	4.84	2.05	2.32	0.36	.000***	0.01	.007**	0.00	.726

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, ⁺ marginal significance.

Performance Evaluation

Unlike Study 1, there was no main effect of Culture for attribution to the focal employee ($b = 0.15$, $t(85.72) = 1.49$, $p = .140$, $[-0.05, 0.35]$). Instead, the Culture effect was qualified by Age ($b = 0.02$, $t(364.12) = 2.17$, $p = .030$, $[0.00, 0.03]$). As hypothesized, follow-up tests showed that older Japanese participants attributed less contribution to the focal employee (JP_{Age} $b = -0.02$, $t(183.45) = -2.62$, $p = .010$, $[-0.03, -0.00]$), meanwhile there was no effect for European Americans (US_{Age} $b = <.00$, $t(169.75) = 0.77$, $p = .441$, $[-0.01, 0.01]$).

For contribution attributed to the whole team, Japanese participants attributed less ($b = 0.20$, $t(55.55) = 2.10$, $p = .040$, $[0.01, 0.39]$) which contradicted the hypothesis that there will be more focus on the team in Japanese cultural contexts. Study 1 showed that European American (vs. Japanese) participants attributed more contribution to the ‘inseparable’ contribution of the focal agent and the team. Since Study 2 only included the focal employee and the team as options, greater contribution attributed to the team in Study 2 suggests that greater attribution to the inseparable contribution by European Americans in Study 1 might have been for the team. The Culture x Age interaction for the whole team was also significant ($b = -0.01$, $t(362.80) = -2.15$, $p = .032$, $[-0.03, -0.00]$), such that older European Americans attributed marginally less contribution to the team (marginal effects are reported in Supplementary Materials).

European American participants attributed more contribution to management ($b = 0.23$, $t(91.81) = 2.20$, $p = .030$, $[0.03, 0.43]$), but the Culture x Age interaction was not significant. Meanwhile Japanese participants attributed more to the owners and shareholders ($b = -0.24$, $t(359.01) = -2.39$, $p = .017$, $[-0.44, -0.04]$). There was a significant Culture x Age interaction for owners and shareholders ($b = 0.02$, $t(359.46) = 2.25$, $p = .025$, $[0.00, 0.04]$), such that older European Americans attributed greater contribution to the owners and

shareholders (US_{Age} $b = 0.01$, $t(169.25) = 2.55$, $p = .012$, $[0.00, 0.03]$) while there was no age effect in the Japanese sample (JP_{Age} $b = <-.00$, $t(184.1) = -0.29$, $p = .771$, $[-0.02, 0.01]$). No significant main effect of Culture nor Culture x Age interaction was found for Other parts of the company.

Finally, replicating Study 1, Japanese participants attributed more contribution to luck relative to European Americans ($b = -0.36$, $t(307.40) = -3.71$ $p < .001$, $[-0.55, -0.17]$). The significant interaction ($b = -0.02$, $t(354.66) = -2.27$, $p = .024$, $[-0.03, -0.00]$), revealed that older Japanese participants attributed marginally more contribution to luck than younger participants, while there was no effect of age for European American participants (see Supplementary Materials).

The Culture x Age interactions for the focal employee and luck allude to the potential for cultural change within Japan. Younger Japanese generations tended to attribute more contribution to the most focal agent and less to the most external factor relative to older generations. Younger generations, therefore responded more similarly to the pattern shown by European American participants. Although the main effect of culture was not significant for the focal employee, diverging from the general hypothesis, this might be explained by the interaction of culture and age.

The Culture x Age interactions for the team, as well as owners and shareholders allude to cultural changes and/or intergenerational differences within European American participants where younger generations tended to attribute more contribution to the team and less to the owners and shareholder than older generations. However, this is not the focus of the current research.

Remuneration decisions

Financial remuneration

Figure 2 summarizes the size of cultural differences (i.e., the main effect of culture) for financial remuneration. As displayed in Table 2, no significant Culture x Age interaction was observed for financial remuneration of any agents. Therefore, we focused on the main effects of Culture in the following part. No significant cultural differences were observed for focal agents (focal employee, team). Significant culture main effects revealed that relative to European American participants, Japanese participants attributed greater bonus payments to management ($b = -0.23$, $t(310.15) = -2.26$, $p = .025$, $[-0.42, -0.03]$) and other parts of the company ($b = -0.28$, $t(361.91) = -2.58$, $p = .010$, $[-0.47, -0.05]$). While European Americans attributed more profits to the owners and shareholders ($b = 0.38$, $t(341.83) = 3.63$, $p < .001$, $[0.21, 0.62]$).

This general pattern for financial remuneration is consistent with the overarching hypothesis such that Japanese (vs. European American) participants attribute more bonus/profits to more representative and less focal agents – management and other parts of the company. Although also peripheral, greater profit to the owners and shareholders from European American participants might be due to greater importance placed on individuals over and above external factors like other parts of the company. The expected effect for financial remuneration for the focal individual employee however was not significant, further contradictions to the general hypothesis are discussed under ‘**Evaluating Contradictions to the General Hypothesis**’.

Status remuneration

Similar to financial remuneration decisions and unlike performance evaluations, there were no Culture x Age effects for any agents for status remuneration decisions (Table 2) and we focused on the main effect of Culture. European American participants reported the focal employee was more likely to receive a promotion relative to Japanese participants ($b = 0.26$, $t(113.02) = 2.29$, $p = .024$, $[0.04, 0.49]$). No cultural difference was observed for the team, and

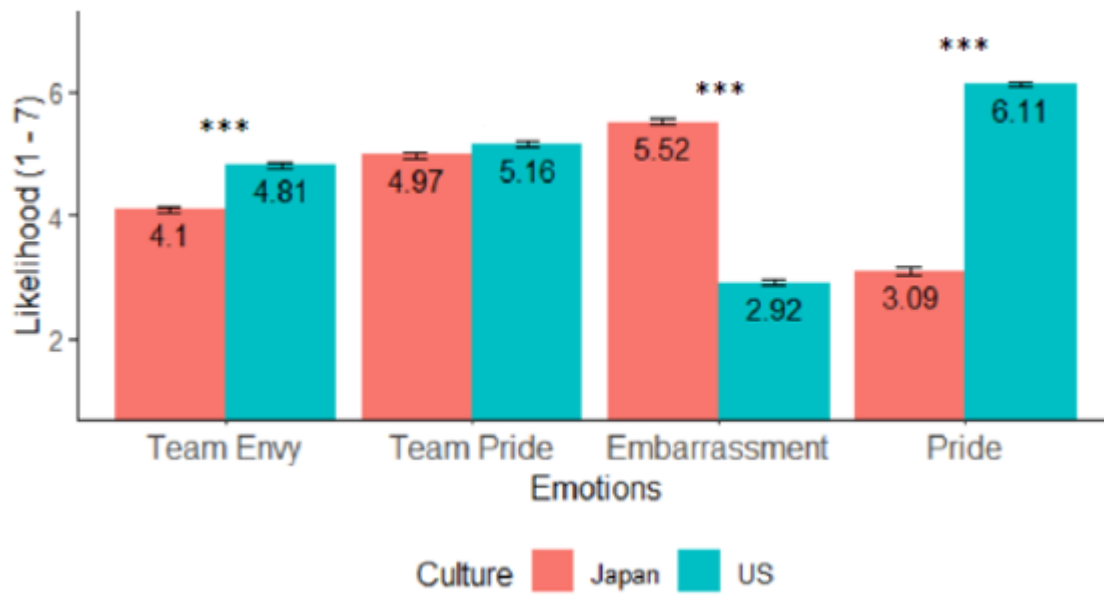
European Americans reported management as more likely to receive a promotion ($b = 0.36$, $t(298.01) = 3.46$, $p < .001$, $[0.16, 0.56]$). The pattern for the focal employee is consistent with the general hypothesis but the pattern for management is not. Given the pattern for management in Study 2 is inconsistent with the result of Study 1 which found no cultural difference, further testing would be necessary to confirm reliability.

Emotional Reactions

Analyses

Likelihood ratings for each emotional reaction was regressed onto fixed effects: Culture (Japan = -0.5, US = 0.5), Age (grand mean centered), and their interaction, and control variables: Percent Increase (1, 5, 10, 15), Vignette Outcome, Team size, Gender, Employment status, and Block. Participants and Vignettes were entered as random effects with random intercepts. Main effects of age were out of the scope of the current investigation, and are not further discussed. Figure 3 shows the means and standard errors for each emotion type by culture.

Figure 3



Mean Likelihood of Emotional Reactions by Culture

Note. After being told the focal employee received a larger than expected bonus payment, participants reported how the focal employee and the team would feel. Error bars represent standard error of the mean, *** $p < .001$.

There were no Culture x Age interactions (nor Age effects) for emotions and we focused on the main effect of Culture. Consistent with the more traditional Japanese tendencies, Japanese participants reported significantly greater likelihood of the focal employee feeling embarrassed upon receiving a greater than expected bonus ($b = -2.61$, $t(32.89) = -14.19$, $p < .001$, $[-2.97, -2.25]$). In contrast, European Americans reported significantly greater likelihood of the focal employee feeling proud ($b = 3.04$, $t(33.78) = 16.32$, $p < .001$, $[2.67, 3.40]$). These results suggest that meaning and psychological value of the additional financial reward are different between the two cultures.

For the team, European Americans also reported the team would feel more envious ($b = 0.66$, $t(100.95) = 4.86$, $p < .001$, $[0.39, 0.93]$) while cultures didn't differ on how proud the team would feel ($b = 9.41$, $t(94.03) = 1.65$, $p = .103$, $[-0.04, 0.40]$). It should be noted, however, that both team envy and pride hold the same relative position of likelihood (third and second likely out of four emotions, respectively) and above the midpoint of four, for both cultures. Therefore, it could be that the statistical difference in team envy may be due to response biases, with greater tendency towards the mean in East Asian cultural contexts, and greater polarization in European American cultural contexts (Heine et al., 2002). Such biases however would not rule out the opposite effects of embarrassment and pride reported for the individual employee. In sum, Japanese, compared to European Americans, expected more negative reactions from colleagues for an additional reward.

Differences between remuneration task and reward type

To test the consistency between tasks, we computed correlations for whether contribution attributions predicted rewards, though statistically significant the correlations were not strong (r s ranged from 0.18 to 0.55, see Supplementary Materials).

General Discussion

Japanese institutions are continuing to reform remuneration systems to include more individual performance evaluations (e.g. Abe, 2004; Morris et. al., 2006; Ogihara, 2017). The reforms however do not necessarily fit with traditional Japanese psychological tendencies such as holistic thinking, an interdependent self construal and a conjoint model of agency. Across two studies we tested how Japanese and European American participants evaluate workplace performance and make remuneration decisions in successful workplace situations. In both studies we found the general tendency for Japanese, compared to European American populations to attribute less contribution and reward to more focal agents such as the focal employee and team. Meanwhile Japanese, compared to European American populations, attributed more contribution and reward to less focal and more external agents/factor such as luck and management. Study 2 demonstrated that in response to additional, large financial rewards for the focal employee, Japanese people expected the employee to feel more embarrassment while European Americans expected the employee to feel more pride. The overall pattern of the results suggests that the operations and functioning of individual performance-based systems are different across Japanese and European American cultural contexts. We also found some specific patterns that contradicted the general pattern, and differences between evaluations and decision making.

Evaluating Contradictions to the General Hypothesis

Contrary to what we would expect based on a conjoint model of agency more commonly found in Japanese cultural contexts – where many people and groups are considered as agentic – we found instead that European Americans attributed more contribution to the inseparable contribution of the focal employee and the team in Study 1, and to the team in Study 2. Since the team was explicitly described in the vignettes, this may have meant that for European Americans the team was also perceived as focal to the success, especially relative to other unmentioned agents and factors, which lead to a stronger focus

and larger attributions to the team compared to other unmentioned non-focal agents and factors. Future research testing how contribution is attributed to a team/others when they are not mentioned and only the behavior of an individual focal employee is described would determine whether others are still considered even though not explicitly mentioned.

Study 2 also found that European Americans attributed more profit to some less focal agents, the owners and shareholders. This pattern could reflect culturally specific business norms, as US executives emphasize creating value for shareholders as a core company pursuit (meanwhile Japanese executives' emphasize serving society and their employees; Witt & Stahl, 2016). This may also explain greater attribution of profit to the owners and shareholders by European Americans which detracted from cultural differences for the focal employee and the team.

The last contradiction to the general hypothesis was that in Study 1, more financial reward was attributed to the company by European American than Japanese participants. We attribute this pattern to the use of the word 'profits' which may be conceptually related to a company rather than employees in European American contexts. Consistent with this idea, when the reward for employees was framed as a 'bonus' in Study 2, we found Japanese participants attributed more profit to the company.

Differences between Tasks and Reward Types

Though both are responses to the same scenarios, performance evaluations and remuneration decisions did not always show identical patterns of results. The correlations among the different tasks and reward types (financial and status) were not very high (r s ranged from 0.10 to 0.55, across both studies, see Supplementary Materials), suggesting that performance evaluations and remuneration decisions reflect different aspects of remuneration psychology and behavior. Performance evaluations could represent more genuinely believed attributions, while remuneration decisions are comparatively pragmatic and normative. For

example, remuneration decisions have tangible impacts, which may result in more consideration for the recipient and/or their colleagues' reactions.

We found differences between task and reward types for the focal employee where Japanese (vs. European American) participants attributed less contribution to the focal employee (at least among older generations), reported less likelihood of receiving a promotion, while there were no cultural differences for financial rewards. One possible explanation is that financial rewards from European Americans were directed more towards shareholders than employees (Witt & Stahl, 2016), in turn reducing the amount of bonus for the focal employee, therefore reducing the potential for cultural difference. Status rewards (promotions) however, cannot be allocated to shareholders and might be more sensitive to cultural differences. Status rewards could also reflect reality constraints where the cultures differ in how promotions are conducted. In Japan, promotions are contingent on seniority, occurring within approximately 7-14 years of service (Morris et al., 2006). Therefore it may be that rather than a *genuine* belief or decision about how deserving a promotion is for a given employee/group of employees, status remuneration decisions reflect the culturally dependent reality.

The age-related interaction effects in Study 2 also highlight the dissociation between tasks. Younger Japanese generations attributed more to the focal employee and less to luck compared to older Japanese generations. However, generational differences did not exist for remuneration decisions or expected emotional reactions. Japanese focal employees were expected to feel embarrassed possibly due to expecting and/or mitigating social harmony disruption, while European American focal employees were expected to feel proud possibly due to valuing the reward as an individual achievement. Remuneration decisions, rather than performance evaluations, are the final determinant that further reinforce the norm for individually-based remuneration. Likewise, the psychological meaning of additional financial reward appears to strongly reflect traditional value systems in the respective cultures. Therefore

despite performance evaluations among younger Japanese generations changing towards valuing an individual employee, our research suggests the remuneration system may function in a way that maintains and reflects more traditional Japanese psychological tendencies.

Finally, in Japan, management was not attributed more contribution but was attributed more financial rewards relative to European American participants. Consistent with the idea of proxy crediting and blaming (Zemba, 2006; Zemba et al., 2006; Zemba & Young, 2012), this pattern suggests that in Japanese cultural contexts the leader is seen as the proxy agent responsible for receiving tangible (i.e., financial) rewards, regardless of individual contribution. As we discuss above, contribution attributions, influenced by thinking styles, might be more detached from value systems while remuneration decisions influenced by models of agency are tied to value systems. We argue these results demonstrate how different components of cultural systems interact with one another (Hamedani & Markus, 2019), and depend on different aspects within the layer (i.e., thinking style and model of agency).

Limitations

As discussed above, not all of the patterns of results were consistent with the general hypothesis, between experiments, and between different tasks. Although we suggest plausible reasons for the inconsistencies, the explanations are descriptive and interpretive. Future research could test these interpretations with empirical and more specialized designs.

The present study provides insight into how institutional systems and psychological processes intersect and interact with one another. Specifically, we aimed to show how the same individual performance-based remuneration system operates and functions within different cultural contexts. How long-term exposure to an institutional system changes psychological processes should also be tested. The age effect within Japan indicates potential change but provides only preliminary evidence as age is confounded with factors such as incentives for endorsing individual or seniority-based systems, and is only an indirect indicator of exposure

to performance-based systems. Future work should empirically test how institutional changes directly affect psychological processes.

Conclusion

By unpacking the context and cultural psychology behind remuneration in Japan, and comparing with that of those in European American cultural contexts, this research contributes to our understanding of how people evaluate workplace performance and make remuneration decisions in Japan. The overarching pattern is that individual remuneration psychology in Japan still follows what we would expect based on traditional Japanese psychological tendencies, such as less emphasis on more focal agents and more emphasis on less focal and more external agents/factors. An institutional system does not work independently from other components of the cultural system but cultural psychological processes influence how the institutional system operates and functions.

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Tables

Table 1

Study 1 Results for Mixed Models Testing the Effect of Culture on Attributions

Attribution	Candidate	Mean		SD		Culture		
		JP	US	JP	US	<i>b</i>	<i>p</i>	CI
Contribution (%)	Focal Employee	38.64	44.03	20.10	26.82	0.25	.010*	0.06, 0.43
	Inseparable.	16.00	18.79	10.43	17.29	0.27	.009**	0.07, 0.46
	Team only	19.47	14.06	12.86	13.19	-0.30	.000***	-0.46, -0.14
	CEO/Management	6.79	6.73	5.96	8.64	0.06	.529	-0.13, 0.25
	Owner/Shareholders	4.96	4.55	5.06	8.27	-0.05	.605	-0.23, 0.14
	Company as a whole	6.58	7.27	7.71	12.77	0.13	.193	-0.06, 0.32
	Luck	7.57	4.55	8.91	9.64	-0.26	.002**	-0.42, -0.09
Profit (x \$1000)	Focal Employee	20.68	20.55	18.91	22.43	-0.01	.951	-0.19, 0.18
	Team only	21.90	15.20	15.00	14.29	-0.42	.000***	-0.59, -0.24
	CEO/Management	12.91	8.82	9.26	9.24	-0.36	.000***	-0.54, -0.18
	Owner/ Shareholders	15.14	15.85	11.57	18.34	0.07	.451	-0.12, 0.26
	Company as a whole	29.37	39.59	25.22	32.77	0.43	.000***	0.24, 0.63
Promotion (%)	Focal Employee	6.70	7.27	2.59	2.35	0.30	.002**	0.11, 0.49
	Team only	4.82	4.72	2.28	2.19	-0.02	.860	-0.20, 0.16
	CEO/Management	4.32	4.23	2.34	2.58	-0.01	.949	-0.24, 0.22

Note. **p* = <.05, ***p* = <.01, ****p* = <.001

Table 2

Study 2 Results for Mixed Models Testing the Effect of Culture, Age and Culture x Age interactions on Attributions

Attribution	Candidate	Mean		SD		Culture		Age		Culture x Age	
		JP	US	JP	US	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>	<i>b</i>	<i>p</i>
Contribution (%)	Focal Employee	41.52	45.42	20.89	25.60	0.15	.140	-0.01	.180	0.02	.030*
	Team	26.22	28.93	14.90	20.43	0.20	.040*	<.00	.772	-0.01	.032*
	Management	8.46	9.57	6.57	8.75	0.23	.030*	<.00	.600	<.00	.702
	Owner/Shareholders	6.87	4.66	7.95	8.28	-0.24	.017*	0.01	.257	0.02	.025*
	Company (other)	7.97	6.26	9.5	9.61	-0.11	.294	0.01	.214	-0.01	.434
	Luck	8.98	5.16	11.35	9.26	-0.36	.000***	<.00	.340	-0.02	.024*
Profit (x \$1000)	Focal Emp. (bonus)	18.49	20.22	19.11	20.10	0.12	.245	-0.01	.228	0.01	.390
	Team (bonus)	21.74	23.73	15.57	23.12	0.14	.167	<.00	.754	-0.01	.303
	Management. (bonus)	10.82	9.04	8.53	9.31	-0.23	.025*	-0.01	.037*	0.02	.052 ⁺
	Owner/Shareholders	16.56	22.32	13.95	23.77	0.38	.000***	0.01	.013*	0.01	.105
	Company (other)	32.39	24.69	26.77	27.36	-0.28	.016*	<.00	.719	-0.01	.109
Promotion (%)	Focal Employee	6.77	7.33	2.40	2.20	0.26	.024*	<.00	.789	-0.01	.139
	Team	4.91	5.10	2.08	2.19	0.16	.126	0.01	.175	-0.01	.302
	Management	4.09	4.84	2.05	2.32	0.36	.000***	0.01	.007**	0.00	.726

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, ⁺ marginal significance.

Figure Legend

Figure 1.

Magnitude and Direction of Cultural Differences for Contribution Attribution

in Study 1 and 2. Each bar represents the coefficient for the effect of Culture. Positive coefficients denote greater magnitude from European American participants, negative coefficients denote greater magnitude from Japanese participants. Error bars represent 95 % confidence intervals.

Figure 2.

Magnitude and Direction of Cultural Differences for financial remuneration decisions in Study 1 and 2. Each bar represents the coefficient for the effect of Culture. Each bar represents the coefficient for the effect of Culture. Positive coefficients denote greater magnitude from European American participants, negative coefficients denote greater magnitude from Japanese participants. Error bars represent 95 % confidence intervals.

Figure 3.

Mean Likelihood of Emotional Reactions by Culture. After being told the focal employee received a larger than expected bonus payment, participants reported how the focal employee and the team would feel. Error bars represent standard error of the mean, *** $p = <.001$.

Supplementary Materials

Vignette Pilot Study

We originally created 21 vignettes that aimed to describe a workplace challenge overcome by an individual employee (Employee X) that brings the company financial success. With mixed effects models we tested whether perceived difficulty and realism differed by culture. Cultures did not differ on perceived difficulty of the task in the vignettes, but did differ on perceptions of realism. The five vignettes with the greatest cultural discrepancies in realism were removed to leave 16 vignettes, which together did not differ on realism ($b = 0.22$, $t(13.26) = 1.68$, $p = .115$) or difficulty ($b = 0.03$, $t(424.92) = 0.33$, $p = .739$). These 16 vignettes were used in both Study 1 and 2.

Vignettes used in Study 1 and Study 2 (16)

1. X is a part of a team that manages the company's factory. One day there is news from the factory that, without any known cause, a machine has stopped working. Immediately, the whole management team go to the factory and together the management team and the factory team cooperate to test and analyse the machine. However, the problem remains. The atmosphere becomes tense with despair, when suddenly X has a new idea and proposes it to the team. At first, the team doesn't quite understand, but as they begin to understand the potential of the plan, the atmosphere completely changes, the mood in the factory brightens and there is hope. The team continue to work to repair the machine together, and finally the factory is back in action. From this, a manual to prevent further stoppages was also created. Resolving the issue as fast as they did, and creating the manual was able to prevent the company from an estimated \$1 million dollars in losses. Xの所属するチームはA社の持つ複数の工場を管理している。ある日工場から連絡があった。工場の機械が止まっているがまったく原因が不明である。Xとチームはすぐさま現場に向かった。チームで協力して様々なテストや検討を行ったが、依然として原因はわからなかった。このままではどうしようもないという雰囲気は漂い始めていた。しかし、Xはある案をひらめき、チームに提案した。最初チームメンバーはその案の理解に苦しんでいるようだったが、案の可能性を理解し始めると、空気が一変し、大きな希望が見えた。チーム一丸で検査・修理に取り組み、見事工場は再開することができた。また、再発防止マニュアルも作成できた。できるだけ早く問題を解決できたこと、マニュアルによってざっと見積もって1億円の損失が防がれた。
2. X is a member of the new product development project. So far, the project has been ongoing for 6 months and the team members have introduced several ideas, but so far none of the ideas have been successful. The team members each begin to realise that the project may need to be terminated. The atmosphere in today's meeting is tense. All of a sudden X has an idea, and proposes it to the other team members. At first, the members don't quite understand the plan, but as they begin to understand the potential of the plan, the atmosphere completely changes, the mood in the meeting brightens and there is hope for the new project. Together, the team members work on the new project and at last a product is successful. The new product brings success to the company through an estimated \$1 million dollars in profits. Xは新製品開発プロジェクトチームの一員である。これまでチームではアイデアを出し合い、その都度試して来たが、あまり良い成果は得られていなかった。すでにプロジェクト開始から1年半が経過し、このままではプロジェクト中止になってしまう、というのがチームの共通認識だった。今日も開発会議は深刻な雰囲気だ。しかし、Xはある案をひらめいて、チームに提案した。最初チームメンバーはその案の理解に苦しんでいるようだったが、案の将来性を理解し始め

ると、空気が一変し、大きな希望が見えた。チーム一丸で開発に取り組み、最終的に売り出された新製品は、ざっと見積もって1億円の利益を会社にもたらした。

3. X is a new member of the research and development team. At the time X was appointed, the team had not successfully introduced any of the company's new products into the market. X then redesigns some procedures to speed up the product development time, while meeting frequently with potential clients to inform them about products that are in development. As a result, a newly developed product is officially adopted after introduction. At last, a new product brings the company profits, estimated at \$1 million dollars. Xは研究開発チームの新メンバーだ。それまで全くよい製品を生み出せていなかったチームへ赴任してきた。Xは今までのやり方を一新して試作品作成のスピードを上げた。同時に潜在的な顧客先に頻繁に打ち合わせに行く事で、製品が売れるよう信頼を獲得していった。結果として開発された製品は正式に採用された。最終的に売り出された新製品は、ざっと見積もって1億円の利益を会社にもたらした。
4. X's team is tasked with making a presentation to win a contract. Together, the team members decide to cooperate in order to make the best possible presentation. To win the contract, it is important for the presentation to include data to support their evidence. At first the team struggled with research and data collection, but with continued effort everyone made good progress. On the day of the presentation, the first slide is shown and employee X becomes nervous. After X finishes speaking, X is congratulated for the especially good presentation. The team then win the contract and other employees in the company start to well up with happiness. It is estimated this will bring the company \$1 million dollars in profit. Xのチームは契約を勝ち取るためのコンペのプレゼンを任された。みんなで出来るの最高のプレゼンテーションをするために一緒に頑張ろうと、チーム一丸となって決意した。このプレゼンで強調される重要な要素の一つは、データ収集によりエビデンスを提示することであった。自社の計画が最も優れているということを、様々な角度から検証しデータで示すのだ。データ収集には手間取ることもあったが、みなが忍耐強く続け、資料が出来上がった。プレゼン当日、最初のスライドを写し出した時、Xは自分が緊張しているのを感じたが、その後は見事にプレゼンをやり遂げた。結果契約を勝ち取ることができた。上司やチームからおめでとうございませと祝われた。チームメンバーの中には喜びでうっすら涙を浮かべる者もいた。これでもたらされる利益は1億円ほどだろう

5. X is an employee for a civil engineering company. The current site they are tasked with is in particularly bad condition. X needs to plan how the heavy machinery can be used to successfully complete the construction job. Using expertise and skilful judgement, X decides the safest optimal way for the team to proceed and gives detailed instructions on how to do so. Together the team members work to carry out the reconstruction, and completion brings the company an estimated \$1 million dollars in profit. X は土木工事の現場で働いている。今回の現場は地盤の状態が非常に悪く、重機の選定と施工方法に高度な判断を求められるものだった。Xはその知識と経験を生かして適切な判断を行い、チームメンバーに的確な指示を与えて、安全かつ大変よい施工を行った。これでもたらされる利益は1億円ほどだろう。
6. Company A decide to introduce a new overseas base, and employee X is appointed to the production technology management team. X is tasked with the education and training of new, local recruits. At first, cultural differences make recruiting locals difficult. Even after successful recruitment, the education and training is problematic. So X tenaciously studied the local culture and successfully communicates with the new local recruits. As a result, the production technology team was able to function independently with only local recruits. On the eve of X's return home, the locals gave X a grand send off to show their gratitude. Successfully establishing the base overseas provided the company an estimated \$1 million dollars in profit. A社は新規海外拠点の構築を進めていた。Xはその海外拠点の生産技術マネジメントチームのメンバーとして赴任した。Xは現地ローカル社員の採用から教育・育成を中心となって行った。初めは文化の違いなどで採用ができない、採用できてうまく教育・育成ができないという問題続きだった。しかし、Xは粘り強く現地の文化を学び、コミュニケーションをとった。その甲斐あって、5年目には生産技術チームは現地で自立して機能できるようになり、Xが本国に帰る際には現地社員はとても感謝し盛大に送り出してくれた。この拠点確立は、1億円の利益を会社にもたらした。
7. Company A gathered some high performing employees from a range of areas of expertise to assemble a marketing team. Employee X was not only skilful but also possessed extraordinary leadership ability. X took charge to inspire, encourage and organise the team to make best use of each employees expertise. As expected, the team proved successful, and brought the company an estimated \$1 million dollars in profit. A社では選りすぐりの人材を集め、マーケティングチームを組織した。各分野の専門家が集められた。特にXは技能が優れているだけでなく、強力なリーダーシップの持ち主だった。Xはチームメンバーの適性に合わせた配置を行い、いつもチームを鼓舞することを忘れなかった。結果、チーム

は期待通りに成功を収め、マーケティングで上乗せされた利益は1億円ほどだと見積もられている。

8. X is assigned to join the company's strategy team. X immediately exemplifies skill and knowledge. With sharp insight from a multi-faceted perspective, X clearly identifies issues with precision that had previously been disregarded. The rest of the team is impressed with X's insight. From here, how the team think about company strategy is changed. This brings the company an estimated \$1 million dollars in profit. Xは早速その手腕を発揮した。多角的視点と豊かな知識を背景にした鋭い洞察を元に、これまで指摘されていなかった課題を非常に的確に指摘していった。その深い洞察にはチームメンバーが感心しきりであった。メンバーの経営戦略への考え方は変わり、それにより上乗せされた利益は1億円ほどだと見積もられている。
9. X is a member of the marketing team. Work concerning Y is a low priority task, but in the intervals of other high priority work, X steadily works on Y and continues to update the manager with progress. One day, all of a sudden, the priority of tasks changes and information on Y is urgent. The information X had been tracking proves extremely useful, and prevents the company from potential losses estimated at \$1 million dollars. Xはマーケティングチームのメンバーだ。ある分野Yについての調査は優先順位の低い仕事であった。Xは他の優先順位の高い仕事の合間に、地道にYについての調査を進め、上司に進捗報告もしていた。ある日、急に仕事の優先順位が変わった。分野Yについての情報が必要になったのだ。Xが集めていた情報は非常に役に立った。これによって得られた利益は1億円ほどだと見積もられている。
10. X is a low ranking employee who applies for a promotion to become a manager within the company. X is successful, and is introduced to the new team members. Based on KPI's (Key Performance Indicators) X notices that the performance of this team is the lowest in the company, there is a lot of work that needs to be done. X starts to think about how and why the team members perform badly and possible strategies to help increase team member performance. After many team meetings, the team members start to work together and performance starts improving. With X's managing skills, and the team members hard work, they become the best performing team members and bring an estimated profit of \$1 million dollars to the company. Xは平社員だったが、チームマネージャーの募集に立候補し、新しいチームにマネージャーとして紹介された。重要業績指標を見ると、Xのチームは会社の中で最下位だった。やるべきことは山積みだった。Xはすぐに、どうしてチーム成績が悪いのか、どのような戦略でチーム成績を向上できるか考えることに着手した。チームで会議を重ね、チームは協働しはじめ、成績は向上を始めた。Xのマネジメント能力とチームみんなの頑張り、チーム成績

は全社トップにまでなり、およそ1億円の利益を会社にもたらすまでとなった。

11. Employee X is about to leave the office to go home when all of a sudden there's a new job for the team. It's a bug in the newly set-up product delivery system. If not dealt with immediately, it could cause immense damage to the company. However, the systems' designers have gone home for the day, and the only person with some understanding of the system is X. The remaining employees are panicking and time is ticking. Employee X however, starts giving precise directions to others, and focusses on tackling the bug. Finally, X manages to locate the bug and minimise the damage. If X had instead gone home, it could have cost the company an estimated \$1 million dollars in losses. Xはオフィスを出て帰ろうとしているところだった。急遽Xのチームに仕事が入ってきた。新たに導入した納品システムにバグが見つかり、直ちに修正しなければ大きな損害となる。しかし、そのシステムの設計メンバーはすでにほとんど帰宅しており、Xしかシステムを把握している者はいなかった。残りのチームメンバーが右往左往しているだけで時間が過ぎてた。そんな中Xは的確な指示を出しながら、中心となってバグの修正に取り組んだ。最終的にうまくバグを修正し、損害を最小限に留めた。もし、あの時Xが帰っていてバグ修正ができていなかったら、ざっと見積もって1億円の損失を会社にもたらしていただろう。
12. Branch B of Company A is about to lose a client, which could potentially lead to branch closure. Without any strategy the branch would surely lose the client, and some members are prepared for potential closure. However, employee X is not going to give up. X decides to give a well-practised and inspiring speech, presenting a solid plan with strategies that no one else has thought of. With this encouragement, the members come together to execute the plan. Together the branch was able to keep the client, and overcame potential closure. If the client was lost and branch closed, this would have cost Company A an estimated \$1 million dollars in losses. A社のB支店は存続が危ぶまれるような取引喪失に直面していた。もう策はなく、取引喪失やむなし、と支店メンバーの多くが考え始めていた。中には支店閉鎖を覚悟している者もいた。しかし、Xは諦めていなかった。Xは他の誰もか思いもしなかったような策を具体的な資料を元に提示し、自信に満ち溢れた淀みないスピーチで、みなを鼓舞した。支店は一丸となってその策に取り組み、その取引の継続と支店存続を成し遂げた。もし取引を喪失していたら約1億円の損失が生じていただろう。
13. X is a member of a team that test-trials parts before they are sent to production. One day, a new part being tested seems satisfactory so is sent to production. However, a defect in this small part is then discovered. It turns out that a new employee has made a mistake in one of the tests, which could potentially lead to defects in the final

products. The team started to panic. Meanwhile, X started to think about how to rectify the issue as fast as possible. With strong leadership skills X gave direction to the team, and together they make and execute a plan. They also rectify current protocol to ensure that new team members don't make similar mistakes in the future. As a result, the loss of an estimated \$1 million dollars was avoided. X はある部品の試作品製作チームのメンバーである。チームで出した試作品はテスト結果も良好に見え、製造段階に入っていた。しかし、この段階になって、この小さな部品に欠陥が見つかった。チームの新人メンバーが試作品テストでミスをしていたのだ。このままでは大量の不良品を出してしまう。チームメンバーはうろたえていた。そんな中 X は、やり直しをどうすれば最短でできるかを考え、リーダーシップを発揮してチームを解決策の発見と実行に導いた。さらに、同じようなミスを次の新人がしない仕組み作りもチームで行った。結果として、1 億円程度の損失が防がれた。

14. X is a member of a newly established consulting company who specialise in analysing company finances and employee motivation. The current task at hand is the team's first customer report, and employee X is preparing the data for analysis. X then realises that the data of 2 clients, P and Q are reversed. If left as is, P and Q's internal data would be passed on to each other, which would cause a great loss in confidence of the consulting the team. The team rush to fix the documents. If the incorrect data was reported, the consulting team may have gone bankrupt, which would lead to losses estimated at \$1 million dollars. X は新たに立ち上がったコンサルティング会社のメンバーだ。コンサルティング会社は他社の経営状況から従業員のモチベーションまでを調査分析し、的確なコンサルティングを行うことを売りにしていた。X のチームの最初の取引先への分析結果報告が目前に迫り、X は分析資料の最終調整をしていた。そこで X は気づいた。2 つの取引先 P 社と Q 社の報告データを逆にしていたのだ。そのままでは P 社に Q 社の内部データが渡ってしまい、信用を大きく損ねるところだったが、チームで急いで資料を作成し直し、事なきを得た。もし、間違ったデータを報告してたらコンサルティングチームは解散しており、そこでの損失は 1 億円にもなっていたらだろう。
15. X is a member of the security team within a government contracted company. The team members receive news that personal government records have been hacked, and they need to solve this as soon as possible. Ten hours after being told, after trying what seem like all the potential solutions, the team members all still have no idea how solve the security breach and the company is at risk of losing the government contract. At last employee X has another idea, and gathers the team members to explain his plan. The team members work together, and make good progress. Finally, the data is secured and the contract is no longer in jeopardy. If lost, this would have cost the company an estimated \$1 million dollars in losses. X は政府から委託契約

を受けている会社のセキュリティーチームのメンバーだ。政府の個人記録がハッキングを受けたので、すぐさま解決しなければならない、との知らせがチームに入った。知らせから10時間がたち、有効と思われる策を講じてきたが、どこにセキュリティーの穴があるかチームは全く把握できていなかった。このままでは会社が政府の契約を失う危機だった。しかしついにXはある案をひらめいた。案を説明するためにチームを集めた。チームは一丸となって働き、光明が見えた。そしてとうとう個人記録データベースの安全は回復され、契約破棄の危機は免れた。もし契約を失っていたら、1億円ほどの損失だっただろう。

16. X is a mid-level manager of a team of 20 employees within a large company. Of the 20 members, X knows that there is 1 employee who has been absent from work for nearly 1 year, but lately 2 more employees have been reported as absent for over 3 months. X begins to wonder why the employees are absent, and brings all the remaining employees together for a meeting. No one says much, and the meeting is a waste of time. X decides to speak to the remaining employees one-on-one and some of the employees begin to discuss with X that the long-term absent employees seemed unhappy at work and that mental health could be an issue in the workplace. X then liaises with mental health program companies to try and organise a work re-entry program to partner with the company. After establishing a partnership program, the rate and length of long-term absent employees reduces, saving the company an estimated \$1 million dollars in losses. Xは大企業で20人の部下を率いる中間管理職だ。20人のうち、1人が1年近く休職しているのは知っていたが、最近さらに2人の従業員が3ヶ月以上休んでいるとの報告があった。なぜこんなに休む者が多いのか疑問に思ったXは残りの従業員を集めて会議を開いた。誰も多くは語りたがらず会議は時間の無駄に終わった。Xは従業員一人一人と話をすることにした。すると何人かは長期欠勤している者は幸せそうに見えず、この職場のメンタルヘルスは問題ではないのかと語り出した。Xはメンタルヘルスプログラム会社と会社全体の提携を取り付け、職場復帰プログラムを作成して試行した。提携プログラムが軌道に乗ると、長期休職率や期間は改善し、そのことでおよそ1億円の損失を回避することができた。

Other Variables

Due to the exploratory nature of this study, Study 1 included other variables ultimately not included in the final analyses. These included confidence and difficulty ratings after contribution and profit attributions, and whether anyone in the vignette needs to improve after the Team *n* item. If improvement was deemed necessary, participants reported how much on a scale of 1-4, 1 being 'No improvement necessary at all' and 4 'A lot of improvement necessary'. These items were removed for Study 2.

Employment Status for Study 1 and 2

Employment Status (%)	Study 1		Study 2	
	Japan	US	Japan	US
Full-time	33.50	54.73	37.69	40.86
Self-employed	18.78	9.45	16.08	9.14
Freelance	17.77	5.97	18.59	4.84
Part-time	14.21	8.46	8.54	13.98
Not Employed	5.58	13.43	7.54	13.44
Student	7.11	0.50	0.50	9.68
Casual	2.03	3.48	8.54	1.08
Other (retired, homemaker)	1.02	3.98	2.51	6.99

Correlation between Performance Evaluations and Remuneration Decisions

Correlations among different tasks (i.e., performance evaluations and remuneration decisions) and different reward types (i.e., financial and status) were tested by mixed-effect regressions. Same set of independent variables as the main analysis was used. In addition, ratings for different task for the same target was included as an independent variable to estimate correlation between the tasks and reward types. For example, contribution of the focal employee X was added as an independent variable to predict profit/bonus to the focal employee X. The t values are converted into r values to ease the interpretation. Tables S1 and S2 respectively summarize the results of mixed-effects regression and converted r values.

Table S1 Correlation between Performance Evaluations and Remuneration Decisions in Study 1

Beta	SE	Df	t_value	p_value	DV	IV	r	r CI_low	r CI_high
0.39	0.02	1227.53	18.32	0.000	ProfitX	ContribX	0.46	0.42	0.50
0.17	0.02	1446.99	7.40	0.000	ProfitTeam	ContribTeam	0.19	0.14	0.24
0.20	0.03	1355.51	8.08	0.000	ProfitManag	ContribManag	0.21	0.16	0.26
0.18	0.02	1418.17	8.03	0.000	ProfitOwner	ContribOwner	0.21	0.16	0.26
0.12	0.02	1343.18	6.19	0.000	ProfitComp	ContribCompan	0.17	0.11	0.22
0.39	0.02	1446.85	18.20	0.000	PromotX	ContribX	0.43	0.39	0.47
0.13	0.02	1426.11	6.04	0.000	PromotTeam	ContribTeam	0.16	0.11	0.21
0.07	0.02	1276.38	3.59	0.000	PromotManag	ContribManag	0.10	0.05	0.15
0.27	0.02	1531.18	10.84	0.000	PromotX	ProfitX	0.27	0.22	0.31
0.23	0.02	1510.58	9.64	0.000	PromotTeam	ProfitTeam	0.24	0.19	0.29
0.13	0.02	1455.29	5.75	0.000	PromotManag	ProfitManag	0.15	0.10	0.20

Table S2 Correlation between Performance Evaluations and Remuneration Decisions in Study 2

Beta	SE	Df	t_value	p_value	DV	IV	r	r CI_low	r CI_high
0.43	0.02	1046.75	21.29	0.000	ProfitX	ContribX	0.55	0.51	0.59
0.36	0.02	1090.05	17.22	0.000	ProfitTeam	ContribTeam	0.46	0.42	0.50
0.33	0.02	1450.53	14.77	0.000	ProfitManag	ContribManag	0.36	0.32	0.40
0.17	0.02	1374.09	7.74	0.000	ProfitOwner	ContribOwner	0.20	0.15	0.25
0.18	0.02	1309.51	8.92	0.000	ProfitComp	ContribCompan	0.24	0.19	0.29
0.34	0.02	1098.99	16.01	0.000	PromotX	ContribX	0.43	0.39	0.48
0.17	0.02	987.84	8.02	0.000	PromotTeam	ContribTeam	0.25	0.19	0.30
0.14	0.02	1239.09	7.21	0.000	PromotManag	ContribManag	0.20	0.15	0.25
0.24	0.02	1488.93	9.89	0.000	PromotX	ProfitX	0.25	0.20	0.29
0.17	0.02	1439.59	6.95	0.000	PromotTeam	ProfitTeam	0.18	0.13	0.23
0.15	0.02	1402.55	7.20	0.000	PromotManag	ProfitManag	0.19	0.14	0.24

Marginal Effects for Study 2 Culture x Age interactions

Contribution to the Whole Team. A marginal age effect in the US sample revealed that older European Americans attributed marginally less contribution to the team ($US_{Age} b = -8.30, t(169.) = -1.67, p = .097, [-0.02, 0.00]$), while there were no effects for Japanese participants ($JP_{Age} b = 0.07, t(185.29) = 1.44, p = .152, [-0.00, 0.02]$). Though marginal, we hesitate to suggest the low-trending contribution attributed to the team by European Americans in Study 1 may have been driven by older adults as the US sample in Study 1 was slightly older (Study 1 = 39 years; Study 2 = 34 years).

Contribution to Luck. There was a marginally significant age effect in the Japanese sample such that older Japanese attributed marginally more contribution to luck ($JP_{Age} b = 0.13, t(177.87) = 1.74, p = .083, [-0.00, 0.02]$), and no age effect for the US sample ($US_{Age} b = -0.03, t(167.80) = -0.43, p = .669, [-0.02, 0.00]$). Again with caution we hesitate to suggest the trending-higher contribution attributed to luck by older Japanese aligns with the tendency for Holistic thinking (or less focus on an individual) predicted for older Japanese generations.

Financial Remuneration (Bonus Payments) to Management. Exploring within-culture generational effects for financial remuneration decisions revealed a single marginally significant effect for bonus payments to management $[-6.05, 0.03]$. Though marginally significant, follow-up tests revealed no age effect for European Americans, but that older Japanese attribute less to managers ($JP_{Age} b = -0.18, t(184.51) = -2.63, p = .009, [-0.03, -0.00]$); $US_{Age} b = 7.20, t(166.15) = 0.12, p = .903, [-0.01, 0.01]$). While caution is needed interpreting marginal interactions, this pattern follows the main effect of age described above, and suggests that less financial remuneration for management by older adults, may be driven by Japanese older adults.

Emotional Beliefs Bonus Increase effects

To assess whether the increase in bonus would strengthen the emotional belief the percent increase in bonus was randomly selected from the four possible amounts (1% (\$10,000), 5% (\$50,000), 10% (\$100,000) or 15% (\$150,000)). Culture (Japan = -1, US = 1) x Percent Increase (continuous, 1- 4) interactions were tested for each emotion but revealed no significant interactions suggesting that the amount of the unexpected additional bonus payment does not modulate perceptions of emotions.