Journal of Behavioral Decision Making, *J. Behav. Dec. Making*, **28**: 167–175 (2015)
Published online 18 September 2014 in Wiley Online Library (wileyonlinelibrary.com) **DOI:** 10.1002/bdm.1834

Voice and Culture: A Prospect Theory Approach

E. LAYNE PADDOCK[1]*, JAEWON KO[2], RUSSELL CROPANZANO[3], JESSICA BAGGER[4], ASSÂAD EL AKREMI[5], JULIE CAMERMAN[6], GARY J. GREGURAS[1], ANTONIO MLADINIC[7], CAROLINA MOLINER[8], KIDOK NAM[2], KJELL TÖRNBLOM[9] and KEES VAN DEN BOS[10]

[1]*Lee Kong Chian School of Business, Singapore Management University, Singapore, Singapore*
[2]*Department of Psychology, Korea Military Academy, Seoul, Korea*
[3]*Leeds School of Business, University of Colorado at Boulder, Boulder, CO, USA*
[4]*Department of Business Administration, University of Gothenburg, 40530 Göteborg, Sweden*
[5]*CRM, University of Toulouse 1—Capitole, Toulouse, France*
[6]*Research and Development, Training Institute of the Federal Administration, Brussels, Belgium*
[7]*Department of Psychology, Universidad Católica de Chile, Santiago, Chile*
[8]*Faculty of Psychology, University of Valencia, Valencia, Spain*
[9]*ETH Zurich, Department of Environmental Systems Science (USYS), Transdisciplinarity Lab (TdLab), Zurich, Switzerland*
[10]*Social Psychology, Utrecht University, Utrecht, the Netherlands*

ABSTRACT

The present study examines the congruence of individuals' minimum preferred amounts of voice with the prospect theory value function across nine countries. Accounting for previously ignored minimum preferred amounts of voice and actual voice amounts integral to testing the steepness of gain and loss functions explicated in prospect theory, we use curve fitting to show that ratings of procedural justice fit prospect theory's value function specifically. Further, we investigate the form of this function across nine countries that range in power distance. Results suggest that the form of the value function is congruent with prospect theory, showing an S-shaped curve that is steeper in the loss than in the gain domain. Further, this pattern is similar across countries. Theoretical and practical implications of these results for both decision making and organizational justice are discussed. Copyright © 2014 John Wiley & Sons, Ltd.

KEY WORDS prospect theory; cross-cultural; voice expectations; fairness

The provision of "voice" is among the best-established means of enhancing procedural justice (Folger, 1977). When individuals have the opportunity to present relevant information to decision-making authorities—when they have voice—they report increased procedural fairness (Brockner et al., 1998; Van den Bos, 2005; Van den Bos & Spruijt, 2002). This "more is better" approach has the appeal of parsimony. Unfortunately, a closer examination of decision-making processes calls this simple model into question.

In general, fairness decisions are made through a process known as "principlism" (Blader & Tyler, 2001). Principlism suggests that individuals carry internalized justice rules (as in "rulers") or standards (Hollensbe et al., 2008). These standards serve as criteria for evaluating the quality of our experience. Justice rules reflect a minimum preferred amount that is then compared with perceived events. Thus, people have a preferred minimum level of voice. When this level is achieved or exceeded, then events are judged to be fair. When the minimum voice level is not met, then events are judged as unfair. The problem with this approach is that it ignores three attributes of comparative judgments.

First, it is important to distinguish between standards that are met and standards that are unmet. Research in other areas of decision making suggests that negative events (having too little) exert greater influence on later judgments than do positive events (having too much) (cf. Tversky & Kahneman, 1981, 1992; Thaler, 1980). Second, even though voice is generally a good thing (Shapiro, 1993), this does not necessarily imply that every additional increase in voice provides an equal benefit. Once individuals possess considerable voice, subsequent additions might do less to improve procedural fairness judgments, as has been found for other decisions (cf. Tversky & Kahneman, 1981, 1992). Third, cultures sometimes have different justice rules[1] (e.g., Van den Bos et al., 2010). Whereas all cultures value just treatment, implying similar decision processes, the events that determine these perceptions are not necessarily identical, implying different levels of voice. For example, Brockner et al. (2001) found that the cultural orientation of power distance, which is defined as "the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally" (Hofstede, 1980, p. 45), affects preferences for voice; those with low power distance want more voice than those with less.

On the basis of the aforementioned reasoning, an adequate theory of voice needs to account for (i) asymmetry of positive and negative outcomes; (ii) marginal justice returns on voice; and (iii) cultural differences in preferred level of voice

*Correspondence to: E. Layne Paddock, Lee Kong Chian School of Business, Singapore Management University, 50 Stamford Rd. #05-01, Singapore 178899, Singapore. E-mail: elpaddock@smu.edu.sg

[1]Consistent with recent reviews of culture (e.g., Chen et al., 2009), we use the term "cross-cultural" to include research that involves different national, ethnic, or cultural groups.

while maintaining a common decision process. In the current paper, we utilize Kahneman and Tversky's (1979) prospect theory to address these three conceptual issues (see also Tversky & Kahneman, 1981, 1992).

Our main contributions are (i) testing directly the prospect theory value function as it applies to voice which has been statistically approximated but not directly tested; (ii) contributing to the decision-making literature by focusing on a non-monetary construct using this economic model, which is generally used for understanding monetary gains and losses; and (iii) assessing the value function across nine countries. Each of these contributions is further discussed in the following sections where we review prospect theory and relate it to voice generally and across countries.

PROSPECT THEORY

Prospect theory (Kahneman & Tversky, 1979) suggests that individuals assess the value of outcomes in relation to a reference point. Gains are outcomes above the reference point; losses are outcomes below the reference point. Moreover, as outcomes move further away from the reference point, the perceived value associated with each increment declines; there are diminishing marginal returns. Thus, the value function is concave above the reference point in the domain of gains and convex below the reference point in the domain of losses, taking on an "S" shape. The slope of this function is steeper for the domain of losses than for the domain of gains, as losses "hurt" more than gains "help" (Camerer, 1995; Heath, Larrick, & Wu, 1999). There is evidence that the S-shaped function that exists across loss and gain domains can also be applied to fairness perceptions (Liberman, Idson, & Higgins, 2005).

Prospect theory and outcome asymmetry

Individuals' self-held *justice rules* (self-based standards, Lau & Wong, 2009) about voice create a reference point against which experiences are evaluated; the same actual amount of voice can be framed as a loss or a gain depending on the rule people use as their standard. Studies suggest that voice that exceeds preferences is perceived as a gain and voice that falls below preferences is perceived as a loss (Hunton, Hall, & Price, 1998; Price et al., 2001). The largest increment in value occurs when the level shifts from mute to some voice (Hunton et al., 1998). Thereafter, increments in value tend to decline in magnitude. Earlier voice research does not test the prospect theory value function specifically, but Price and colleagues' results show that voice preferences were best fit by the cubic regression model, which like the S-function in prospect theory is non-linear. Drawing on recent justice theory that helps explain the origin of individuals' fairness rules and the full mathematical prospect theory value function, we extended earlier work and proposed the voice value function:

Hypothesis 1: The voice value function (i) is monotonically increasing and non-linear with a convex shape in the domain of losses and with a concave shape in the domain of gains and (ii) is steeper in the domain of losses than in the domain of gains.

Prospect theory across countries

The framing effects related to prospect theory (Sharp & Salter, 1997) as well as the S-shaped value function (Arkes, Hirshleifer, Jiang, & Lim, 2010) generalize across nations. These findings suggest similar decision processes (Kahneman & Tversky, 1979), although it is not anticipated that all national cultures value justice to the same degree (Li & Cropanzano, 2009). Thus, we expected that the *shape* of the value function would be cross-culturally stable. To test the shape of the function, we included samples of participants from nine nations: Singapore, the United States, The Netherlands, Tunisia, Belgium, Korea, Spain, Chile, and Sweden.

Hypothesis 2: The voice value function is expected to assume the same overall form across all cultures.

Hypothesis 2 suggested that people in different cultures value voice *in the same way*. This is not to say that they value it *to the same degree*. Recall that power distance is a cross-cultural variable that may explain differences in voice. In general, individuals in low power distance countries prefer more voice, whereas individuals in high power distance countries are satisfied with less (e.g., Brockner et al., 2001; Kras, 1995; Price et al., 2001). According to Hofstede's (1980) groupings, the largest power difference between countries included in the current study is between Sweden, The Netherlands, Belgium, and the United States (all lower power distance countries) compared with Chile, Singapore, Korea, Tunisia, and Spain (all higher power distance countries). Using these two groupings, we hypothesized the following:

Hypothesis 3: The voice value function reference point (preferred voice) is expected to occur at lower levels of voice for participants from the high power distance countries (Chile, Singapore, Korea, Tunisia, and Spain) compared with participants from the lower power distance countries (Sweden, The Netherlands, Belgium, and the United States).

METHOD

We designed a laboratory study with a between-subjects design to test our hypotheses. Participants included undergraduate business and psychology students, the majority of whom received course credit for participation. Students who agreed to participate were provided with the Internet link to the task. All participants were instructed to assume the role of employees in companies updating their computers (for similar designs see Hunton et al., 1998; Price et al., 2001). Participants were told that they had seen a list of 20 different computer system features, each of equal importance to them. Next, some participants were asked to indicate the minimum amount of voice (i.e., number of system features) they would find acceptable. Then all participants were informed of the amount of voice they were allocated, which was

DOI: 10.1002/bdm

Table 1. Demographic information and measure properties reported by country

Country	*N*	% Female	Modal age (years)	% With some work experience	*n*	PJ α	Mean preferred voice (*SD*)
Singapore	394	66	≤21	21.6	394	.87	8.97 (4.71)
United States	390	51	≤21	60.9	389	.89	9.31 (4.85)
The Netherlands	300	72	≤21	62.3	300	.93	9.36 (4.91)
Tunisia	645	66	22–24	20.4	644	.92	9.91 (4.05)
Belgium	301	85	≤21	5.1	301	.89	9.13 (3.77)
South Korea	334	43	≤21	21.9	332	.93	8.76 (4.22)
Spain	102	85	≤21	23.8	100	.96	11.26 (3.92)
Chile	124	69	≤21	22.0	123	.95	10.89 (4.97)
Sweden	258	68	22–24	100.0	236	.93	11.05 (5.74)

Note: PJ, procedural justice perceptions.
n is the subset of *N* for which data on focal variables are not missing; *n* is not significantly different from the full sample demographically. Most but not all missing data were from the same participants (e.g., 15 Swedes did not report any demographics). For gender, one participant failed to report gender from each of the USA, Spain, and Chile; three participants failed to report gender from Tunisia and Belgium; and 15 participants failed to report gender from Sweden. For age, one person from Singapore, Spain, and Chile failed to report age; three people from Tunisia; four people from the USA; seven people from Belgium; and 15 people from Sweden. For work experience, one participant from each of Singapore, the USA, Spain, and Chile failed to report work experience; seven participants from Tunisia; eight participants from Belgium; and 16 participants from Sweden.

operationalized as being allowed to have input on zero to 20 of the 20 different system features. Finally, participants responded to outcome and control measures.

Pre-study

In our principal study we sought to operationalize the justice rule for voice as the preferred voice minimum. Before doing so, we first assessed whether our experimental manipulations, including the introduction of individually measured preferred voice minimums, involved artifacts. Pre-study participants included 135 students from the United States (49% were women, modal age = 21 years, and 58% worked part-time). We randomly assigned participants to cells in this between-subjects 2 (individual voice minimums: measured, not measured) × 2 (voice amount: 5-voice, 15-voice) × 2 (distribution method: paper-based, computerized) design; participants in each of the eight conditions ranged from 15 to 19 individuals.

First, participants read the material describing the 20 computer features available to them. Next, for about half of participants, we measured preferred voice minimums at the individual level to assess whether measuring preferred voice also altered individuals' reactions to allowed voice. We used an item that asked the minimum amount of input acceptable to the participant, and responses ranged from 0 (*no input on any of the features*) to 20 (*input on all 20 features*). Subsequently, participants were told that their supervisor asked them to express their preferences either for 5 of the 20 features (5-voice) or for 15 of the 20 features (15-voice). Finally, participants were asked to assess the procedural fairness of the situation by answering three items (Earley & Lind, 1987; Lind, Kanfer, & Earley, 1990). An example item was "The procedures used to determine the attributes of my new personal computer system were fair" (1 = *strongly disagree*, 9 = *strongly agree*), and the scale was reliable ($\alpha = .89$). Approximately half of pilot participants did this on paper, similar to earlier research (Hunton et al., 1998; Price et al., 2001); half used an online version.

As expected, only one significant main effect was observed between the two voice conditions, $F(1, 127) = 28.92$, $p < .001$. Having more voice (15-voice) led to significantly higher perceptions of procedural justice ($M = 6.31$, $SD = 1.50$) than having less voice (5-voice; $M = 4.91$, $SD = 1.81$). There were no effects for preferred minimum voice (when they were measured or not) or for the type of assessment (paper or online). On the basis of these results, which supported the use of individually measured justice rules, we proceeded with the main experiment.

Main experiment

Participants ($N = 2848$) included students enrolled in university management or psychology courses in nine countries: Singapore, the United States, The Netherlands, Tunisia, Belgium, South Korea, Spain, Chile, and Sweden. For the entire sample, 64.8% were women, the modal age was 21 years, and work experience varied (63.7% had no work experience, 28.2% worked at least part-time, and 8.1% had full-time work experience). The left side of Table 1 includes information regarding sample size and demographics by country.

Participants were given an Internet address and asked to complete the experiment, which took approximately 30 minutes.[2] Prior to analyses reported here, we deleted 29 participants who lacked completed measures of minimum preferred voice or procedural justice, resulting in a final sample of $n = 2819$.

Materials

Congruent with back-translation procedures (Brislin, 1980), the original English materials were translated into the native languages of countries in which English was not the primary language (i.e., South Korea, Belgium, Spain, Sweden, and The Netherlands). In Tunisia, where the majority of Tunisian people have a good knowledge of French and university courses are conducted in French, the materials were translated into French.

[2]Only in The Netherlands were the scenario materials administered using a computer program loaded on specific computers.

DOI: 10.1002/bdm

Voice options

Experimental materials were identical to those in the pre-study individual-preferred minimum voice conditions with one important difference: In the main experiment we used more than the two voice conditions (5-voice or 15-voice) from the pre-study, such that our data would map onto the S-shaped value function postulated by prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981; 1992). Following the example of Price and colleagues (2001), we started with five amounts of voice—(voice on 0, 5, 10, 15, or 20 features) to map the steepness of the gain and loss functions around the reference point. Then, we used the two additional conditions of voice on 9 and 11 features to better understand the inflection point, which we expected to occur at voice on 10 features given the control group results reported by Price et al. (2001). Finally, to understand the curvature, we added voice in increments of two, below 9-voice and above 11-voice. This resulted in 13 voice options: 0 feature (0-voice or no voice) and 1, 3, 5, 7, 9, 10, 11, 12, 15, 17, 19, or 20 features.

We used these same 13 voice amounts to assess individually held justice rules, asking participants to indicate their preferred minimum amount of voice by selecting one of the 13 options. Subsequently, participants were presented with a scenario regarding the amount of voice that would be allowed by their supervisor; these amounts were the same as our 13 voice options. Participants' preferred minimum and allowed voice was used to classify each participant as being in the domain of either gains (more allowed than preferred voice) or losses (more preferred than allowed voice). Finally, the procedural justice items were given, and these items formed a reliable scale ($\alpha = .92$, $M = 6.97$).[3] Country-level means for procedural justice and minimum preferred voice are provided on the right side of Table 1.

RESULTS

Manipulation checks

Most participants answered both manipulation check items correctly (89% identified the amount of allowed voice; 88% identified a specific fact in the scenario queried). Results did not differ significantly when participants who missed manipulation check items were included or excluded, so analyses were conducted on the entire sample.

Focal curve fitting

Curve fitting and parameter estimation using the functional form of prospect theory's value function provide a rigorous way to directly assess whether voice fits the asymmetric prospect theory value function, which previous research only approximated using linear, quadratic, and cubic functions (Price et al., 2001). For this reason, we used curve fitting to address hypotheses in this paper.

The equations associated with prospect theory were used to test Hypothesis 1. These value functions explicate the relationship between value and outcomes as a set of two equations (Equation 5, Kahneman & Tversky, 1986):

$$\text{(gain)} \qquad u(x) = x^{\text{alpha}}$$

$$\text{(loss)} \qquad u(x) = -\,\text{lambda} * \left((-x)^{\text{beta}}\right)$$

Given the structure of the data, we added an intercept to the functions because the midpoint of our procedural justice scale differed from the midpoint assumed in the prospect theory function. Recall that participants rated procedural justice statements between 1 (*strongly disagree*) and 9 (*strongly agree*), for which the midpoint is 5. In contrast, the midpoint assumed by the aforementioned prospect theory function between equal gains and losses was zero. By adding an intercept, we verified that the intercept in our model, when left free to vary, was roughly around the middle of the justice scale. That the intercept was free to vary meant that the curvature in gain and loss domains and the greater steepness in the loss domain resulted from fit with these functions. They were not due to a fixed reference point as would be the case if we had set the intercept for gain and loss functions to 5.0.

By using the value function curve, we defined the reference point as internal to each individual, which is congruent with earlier work on the importance of expectations in determining reference points (e.g., Mellers, Schwartz, Ho, & Ritov, 1997; Payne, 2005). Previous studies on the voice value function have not done so. Instead, they have employed an aggregate score from a control group as the reference point (e.g., Price et al., 2001), which is not ideal. Applying a reference point deduced from an average of others' perceptions obfuscates the individual-level relationship between the reference point and perceptions. Further, using a mean reference point tacitly assumes greater between-group versus within-group differences.[4] Given the integral part that this reference point plays in assessing the function, we directly measured each individual's reference point—as justice rules. Our measurement of individual-level preferred voice minimums is another contribution of this paper.

Additionally, we included an extra parameter to gain and loss equations to account for the range of possible values for each individual's unmet minimum (−20) and individual's exceeded minimum (20). For example, when an individual's justice rules are unmet by four (i.e., they prefer voice on four *more* computer functions than their manager allowed), this is

[3]Conceptual equivalence is a concern when using a procedural justice scale across countries. Generally, invariance in factor structure and item loadings across groups is indicative of conceptual equivalence (Ryan, Chan, Ployhart, & Slade, 1999). Using Lisrel 8.80, we compared all countries simultaneously, and results, which are available from the first author, suggest conceptual equivalence.

[4]Robinson (1950) first discussed this problem with ecological correlations and discussed "ecological fallacy," which is often cited as a caution against generalizing from one or a few members of a culture to all other members of that culture (e.g., Hofstede, 1980). Within each national sample, there may be wide variations so that it is possible that a South Korean is more individualistic than a particular American, even though research suggests that the latter is higher on individualism than the former in general. Given these reasons, we assess individual-level reference points.

DOI: 10.1002/bdm

the same magnitude as when an individual's rules are exceeded by four (i.e., preferred voice on four *fewer* computer functions than one's manager allowed). Thus, our functions are as follows:

$$(\text{gain})\ \text{PJ} = \text{intercept} + (\text{linear term for gain} * (\Delta\text{voice}^{\text{alpha}}))$$

$$(\text{loss})\text{PJ} = \text{intercept} + (-\text{linear term for loss} * ((-\Delta\text{voice})^{\text{beta}}))$$

Curve fitting results obtained by testing this model included a parameter estimate and corresponding standard error associated with lower and upper 95% confidence intervals (CIs). In assessing whether the curve fit the data, we focused on two things: the size of the linear term for loss versus gain, which indicates the steepness of each domain, and whether the exponent (alpha or beta) is significant, which indicates curvature within each domain. Given prospect theory, we expected the linear term for loss to be greater than the linear term for gain, reflecting the greater steepness of the loss domain than the gain domain. To assess whether the exponent was significant, we looked at whether the CIs around it contained 1.0; if the CIs did *not* contain 1.0, then the exponent was significant.

Hypotheses testing

Hypothesis 1: Shape of the value function

Least squares curve fitting was used to estimate parameters. For all reported statistics, we used an α of .05. Individuals' voice was the independent variable, and procedural justice perceptions were the dependent measure for both gain and loss functions. Results from curve fitting analyses on the sample pooled across countries are depicted in Figure 1, indicating that the value function fits the current voice data well.

Beginning with results for the gain model, which was the first function that dealt only with the region greater than the reference point, our data show that the first component of the gain equation, the intercept, 5.60, CI [5.26, 5.94], was reasonably close to the middle of the 9-point procedural justice scale (5.0), suggesting that subjects were using the scale sensibly and that fixing the intercept at the exact middle of the scale was unnecessary. This supported our decision to leave it free to vary. Additionally, there was a linear effect for gain, .32, CI [.06, .70]. We will return to this effect, which showed steepness in the domain of gains and not linearity, to compare it with that for the loss domain. Turning next to the exponent alpha, as predicted the alpha of .38, which reflects concavity in the domain of gains, was significant, CI [.03, .74]. In total, the gain equation had a *d* of .30 (equivalent to $\eta^2 = .02$, for transformation ref. Cohen, 1988, pp. 280–281), meaning the gain model accounted for about as much variance in procedural justice perceptions in the positive domain as is shown in meta-analytic research related to prospect theory to be explained by more constrained framing designs (Kühberger, 1998, p. 39).

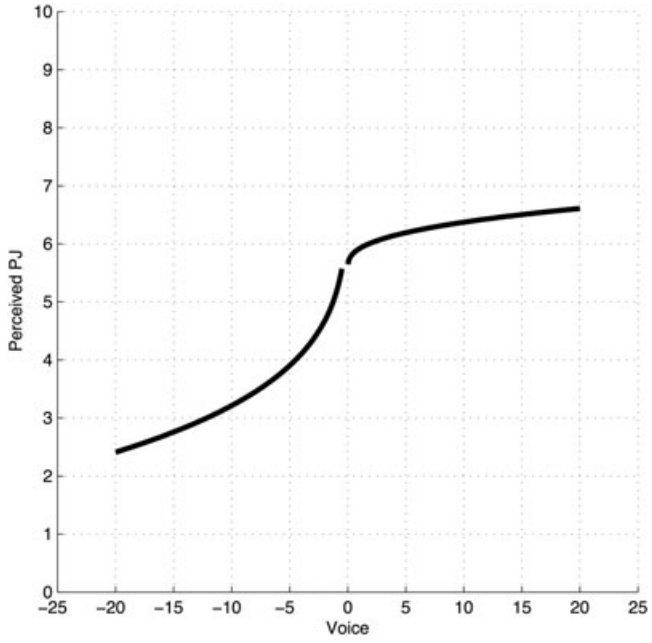

Figure 1. Plotted best-fitting curves relating delta of minimum acceptable and actual voice and ratings of perceived procedural justice (PJ)

Turning to the loss model, which was the second function that dealt only with the region less than the reference point, results showed that the loss intercept, 8.12, CI [2.15, 14.1], was not significantly different from the midpoint of the procedural justice scale. However, it was contained in a large CI, which was an artifact of the curve fitting procedure; the steepness of the loss function near the right edge exacerbated the error in estimating the intercept. What was of particular importance here is the linear term for the loss function, −2.97, CI [−8.26, 2.82], which was greater in absolute value than the .32 linear term for the gain function, indicating a steeper curve in the loss domain as prospect theory predicts. Further, the beta of .22, CI [−.10, .54], reflected the convex nature in the domain of losses and was significant. Recall that if null, the exponent beta would include 1, not 0 as is commonly seen in additive models. Together, these results suggested that the data as a whole fit the prospect theory loss curve. The loss equation had a *d* of .80 (equivalent to $\eta^2 = .14$), meaning the loss function accounted for more variance in procedural justice perceptions in the negative domain than is shown in meta-analytic research related to prospect theory framing in gain and loss domains (Kühberger, 1998, p. 39).

As Figure 1 makes clear, our findings were consistent with prospect theory: The slope of the figure was steeper in the domain of losses than in the domain of gains, and the figure reflected concavity in the domain of gains and the convexity in the domain of losses. Further, supplementary analyses suggested that floor or ceiling effects did not explain this result. The distributions in gains showed that only 13% of responses were at the limit of the scale. There was a similar finding in the loss domain, where only 12% of responses were at the limit. With approximately 87.5% of responses not being at the limit of the scale, it was unlikely that ceiling or floor effects were driving the results. Hypothesis 1 was supported.

Hypothesis 2: Similarity in the shape of the value function across countries

We expected that the shape of the voice value function would be similar across countries. For each country, we tested gain

DOI: 10.1002/bdm

and loss curve functions separately. We then compared each country to the overall results reported previously by assessing whether results from the overall model fit within the confidence intervals obtained for each specific country.

Starting with the gain model, the intercept of the overall model (5.60) fit was congruent with the CIs of each country model. All but one intercept (The Netherlands, 2.65) clustered close to the overall intercept (range 5.27 to 6.10), suggesting stability in the gain intercept. Recall for the overall model a linear effect for gain was obtained (.32). For each separate country, this linear effect fell between CIs for the overall linear effect. Finally, recall that the estimate from the overall model for alpha (.38) was significant, supporting concavity in the domain of gains. This estimate fell between the CIs for all countries, suggesting that separate countries did not differ from this overall concavity effect. Thus, all countries fit the overall form of the voice value function.

Turning to the loss function, we first assessed the intercept. Recall that the intercept for the overall model was at 8.12. This intercept fit within the CIs for all but four countries: Singapore, 4.85, CI [3.80, 5.89], the USA, 5.67, CI [4.00, 7.34], Spain, 5.21, CI [2.36, 8.06], and Sweden, 4.62, CI [3.32, 5.92]. Note, however, that the CIs obtained for each of these countries did contain the midpoint of the procedural justice scale (5.0), and thus concerns about functional fit in these countries are less warranted. Next, we checked to see whether the linear effect for the overall model fell between the CIs for specific countries.

Recall the overall linear effect (−2.97). The linear effect for the overall model fell outside the country CIs for five countries: Singapore, the USA, Spain, Chile, and Sweden. Thus, we next assessed whether the linear effect for loss showed a trend of being greater than the linear effect for gain in each of these countries. Of these countries, the linear term for loss was greater than that for gain in Spain ($-.46 > .32$), Singapore ($-.15 > .07$), Chile ($4.33 > .78$), and the USA ($-.14 > .07$). Only in Sweden ($-.14 < .17$) was this not the case. Together, this suggests that data for most but not all countries supported greater steepness in the domain of losses than in gains. Finally, we compared the significant beta term obtained for the overall model (.21), which supported the convex-shaped curve predicted by prospect theory, to see if it fell between CIs for each country. In all cases but one, it fell between countries' CIs. Whereas outside the error bars, it was only .01 away from the upper interval for Chile, −.98, CI [2.15, .20]. Thus, the convexity of the loss shape was congruent across countries.

To summarize, the data mostly supported Hypothesis 2, which stated that all countries would conform to prospect theory. Findings for specific countries, however, should be interpreted cautiously as these are likely attributable to the wide CIs caused by small sample sizes per country.

Hypothesis 3: Country differences in reference points

To test whether preferred voice minimums may be *lower* for participants from *higher* power distance countries and *higher* for participants from *lower* power distance countries, we first ran a country-level simple bivariate correlation between mean voice and Hofstede's power distance values per country (Hofstede, Hofstede, & Minkov, 2010; for Tunisia only, Guimond, 2006), which provided some weak evidence for Hypothesis 3 ($r = -.22$, $p = .56$). Next, we conducted a univariate analysis of variance with a p-value of .01 to compensate for family-wise error and ran all associated pairwise comparisons of preferred voice minimums among nations. Overall results indicated significant differences among countries, $F(8, 2810) = 9.37$, $p < .01$, $\eta^2 = .03$. Pairwise comparisons among all nations suggested that the differences were not entirely consistent with high or low power distance country groupings (see Table 2 for mean differences between countries). The power distance results did not explain voice level differences across countries.

DISCUSSION

The present study suggests that perceptions of procedural justice correspond to the shape and asymmetry of the prospect theory value function (Kahneman & Tversky, 1979). The justice rule also serves as an inflection point. From a theoretical point of view, values higher than this standard—the

Table 2. Pairwise comparisons among countries for preferred minimum voice

	Preferred minimum voice			
Country	Mean difference	*SE*	Lower bound	Upper bound
1. Singapore				
4. Tunisia	−.94*	.29	−1.87	−.01
6. South Korea	—	—	—	—
7. Spain	−2.29**	.51	−3.92	−.67
8. Chile	−1.92**	.47	−3.42	−.42
9. Sweden	−2.08**	.37	−3.28	−.89
2. USA				
6. South Korea	—	—	—	—
7. Spain	−1.95**	.51	−3.58	−.32
8. Chile	−1.58**	.47	−3.08	−.07
9. Sweden	−1.74**	.38	−2.94	−.54
3. The Netherlands				
6. South Korea	—	—	—	—
7. Spain	−1.90**	.53	−3.58	−.22
8. Chile	—	—	—	—
9. Sweden	−1.69**	.40	−2.95	−.42
5. Tunisia				
1. Singapore	.94*	.29	.01	1.87
6. South Korea	1.15**	.31	.17	2.14
8. Chile	—	—	—	—
9. Sweden	−1.14*	.04	−2.25	−.03
5. Belgium				
6. South Korea	—	—	—	—
7. Spain	−2.13**	.52	−3.81	−.45
8. Chile	−1.76**	.49	−3.31	−.20
9. Sweden	−1.92**	.40	−3.19	−.66

Note: Only significant differences are reported for all two-tailed tests. Mean difference is the first listed country minus the indented country listed below it. Actual voice is omitted from the table because it was manipulated.
*$p < .05$;
**$p < .01$.

DOI: 10.1002/bdm

gain function—are especially noteworthy, as this has received less empirical attention. Consistent with previous research on prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981, 1992), overall results show gains as having a concave curve related to procedural justice. Values less than the reference point—the loss function—show a relatively steep, non-linear decline in procedural justice perceptions. These results provide further evidence that prospect theory, an economic model focused on monetary gains and losses, is of value in understanding individuals' perceptions of less tangible but still valuable goods, including procedural fairness. Further, these findings contribute to very sparse evidence in the organizational justice literature regarding individuals' differential weighting of events.

A second contribution involves the assessment of justice perceptions across nine different countries. We found evidence for both cross-cultural similarities in the *way* people value voice (Hypothesis 2), and cross-cultural differences in *how much* they desire voice (Hypothesis 3). Related to the former, prospect theory seems to hold for fairness judgments and do so across different nations, arguably providing evidence that the shape of this function is generalizable. On average, the respondents who participated in our study appear to value procedural fairness in the same way, experiencing unmet justice rules more strongly than met justice rules. Identification of such cross-cultural similarities is important (Chen, Leung, & Chen, 2009).

Whereas the *shape* of the value function showed evidence of cross-cultural *similarity*, the *reference point* showed evidence of cross-cultural *diversity*. Differences were observed when comparing the mean ratings of preferred voice minimums across countries. From this follows our conclusion that all nations do not place the same degree of emphasis on voice, an observation that is generally consistent with other work (e.g., Brockner et al., 2001; Li & Cropanzano, 2009). Further attesting to the validity of our present findings is recent research on reference points across nations (e.g., Arkes et al., 2010). However, little evidence supported our prediction that preferred voice minimums would be lower (higher) for participants from higher (lower) power distance countries. Power distance, at least as characterized by Hofstede (1980, 1984), did not adequately predict the reference point for voice in the current study. It may be simply too broad to capture the detailed institutions of culture (Chen et al., 2009). Possibly another cultural dimension such as the concept of "face" (ref. Heine, 2001; Ho, 1976) may more clearly explain cross-cultural differences in justice rules for voice.

Limitations, strengths, and future directions

The current paper focused on one aspect of procedural justice: Voice. As such, future work could ascertain how individuals make multi-attribute judgments of fairness on the basis of the combination of the five additional aspects of procedural justice (Leventhal, 1980; Leventhal, Karuza, & Fry, 1980). This approach would be distinct from the paradigm studied here, where individuals examined one dimension (i.e., voice) on the basis of different degrees of input. The advantage of this experimental paradigm is that such designs tend to have high internal validity, allowing for strong theory tests (Moore & Flynn, 2008). However, there are also limitations. Such hypothetical decisions may not completely reflect those of real decisions. Despite this limitation and supporting our results, existing empirical evidence suggests that framing effects based on prospect theory are largely consistent across hypothetical and real choices for money (Kühberger, Schulte-Mecklenbeck, & Perner, 2002).

The current approach is also limited in that it simplifies voice. Here voice is operationalized to increase incrementally (e.g., voice on 11 features or voice on 13 features). In organizational situations, it may be instead that voice occurs in a dichotomous way (e.g., voice before and after a decision) or includes multiple types of input via multiple channels. Optimistically, replication in real-world settings will produce a pattern of voice results consistent with laboratory results reported here, albeit with stronger effects given that the organizational decisions frequently studied by justice researchers have significant consequences (e.g., layoffs).

CONCLUSION

The present study highlights the existence of a voice value function that is congruent with prospect theory, actually testing this function. As such, our study contributes to both the decision making and organizational justice literatures. Our focus across countries suggests that the shape of the function is generalizable across cultures, whereas specific levels of voice are not. This study provides a foundation for and encourages additional research on the voice value function and is initial evidence that prospect theory's value function should also be useful in understanding resources more broadly than monetary resources, including organizational justice.

REFERENCES

Arkes, H. R., Hirshleifer, D., Jiang, D., & Lim, S. (2010). A cross-cultural study of reference point adaptation: Evidence from China, Korea, and the US. *Organizational Behavior and Human Decision Processes*, *112*, 99–111.

Blader, S. L., & Tyler, T. R. (2001). Justice and empathy: What motivates people to help others? In M. Ross, & D. T. Miller (Eds.), The justice motive in everyday live (pp. 226–25). New York: Cambridge University Press.

Brislin, R. W. (1980). Translation and content analysis of oral and written materials. In H. C. Triandis, & J. W. Berry (Eds.), Handbook of cross-cultural psychology, (Vol. *2*, pp. 389–444). Boston, MA: Allyn & Bacon.

Brockner, J., Ackerman, G., Greenberg, J., Gelfand, M. J., Fransesco, A. M., Chen, Z. X., Leung, K., Bierbrauer, G., Gómez, C., Kirkman, B. L., & Shapiro, D. L. (2001). Culture and procedural justice: The influence of power distance on reactions to voice. *Journal of Experimental Social Psychology*, *37*, 300–315.

DOI: 10.1002/bdm

Brockner, J., Heuer, L., Siegel, P. A., Wiesenfeld, B., Martin, C., Grover, S., Reed, T., & Bjorgvinsson, S. (1998). The moderating effect of self-esteem in reaction to voice: Converging evidence from five studies. *Journal of Personality and Social Psychology*, *75*, 394–407.

Camerer, C. F. (1995). Individual decision making. In J. Kagel, & A. Roth (Eds.), Handbook of experimental economics (pp. 587–703). Princeton, NJ: Princeton University Press.

Chen, Y., Leung, K., & Chen, C. C. (2009). Bringing national culture to the table: Making a difference with cross-cultural differences and perspectives. *The Academy of Management Annals*, *3*, 217–249.

Cohen, J. (1988). *Statistical power for the behavioral science* (2nd Ed). Hillsdale, NJ: Erlbaum.

Earley, P. C., & Lind, E. A. (1987). Procedural justice and participation in task selection: The role of control in mediating justice judgments. *Journal of Personality and Social Psychology*, *52*, 1148–1160.

Folger, R. (1977). Distributive and procedural justice: Combined impact of "voice" and improvement on experienced inequity. *Journal of Personality and Social Psychology*, *35*, 108–119.

Guimond, S. (2006). Social comparison and social psychology: Understanding cognition, intergroup relations, and culture. Cambridge, England: Cambridge University Press.

Heath, C., Larrick, R. P., & Wu, G. (1999). Goals as reference points. *Cognitive Psychology*, *38*, 79–109.

Heine, S. J. (2001). Self as cultural product: An examination of East Asian and North American selves. *Journal of Personality*, *69*, 881–906.

Ho, D. Y. (1976). On the concept of face. *American Journal of Sociology*, *81*, 867–884.

Hofstede, G. (1984). The cultural relativity of the quality of life concept. *Academy of Management Review*, *9*, 389–398.

Hofstede, G. (1980). Motivation, leadership, and organization: Do American theories apply abroad? *Organizational Dynamics*, *9* (1), 42–63.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and organizations: Software of the mind (revised and expanded 3rd Edition). New York: McGraw-Hill.

Hollensbe, E. C., Khazanchi, S., & Masterson, S. S. (2008). How do I assess if my supervisor and organization are fair? Identifying the rules underlying the entity-based justice perceptions. *Academy of Management Journal*, *51*, 1099–1116.

Hunton, J. E., Hall, T. W., & Price, K. H. (1998). The value of voice in participative decision making. *Journal of Applied Psychology*, *83*, 788–797.

Kahneman, D., & Tversky, A. (1986). Choices, values and frames. In H. R. Arkes, & K. R. Hammond (Eds.), Judgment and decision making: An interdisciplinary reader (pp. 194–210). New York: Cambridge University Press.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decisions under risk. *Econometrica*, *47*, 263–291.

Kras, E. S. (1995). Management in two cultures: Bridging the gap between U.S. and Mexican managers. Rev. ed. Yarmouth, Me.: Intercultural Press.

Kühberger, A., Schulte-Mecklenbeck, M., & Perner, J. (2002). Framing decisions: Hypothetical and real. *Organizational Behavior and Human Decision Processes*, *89*, 1162–1175.

Kühberger, A. (1988). The influence of framing on risky decisions: A met-analysis. *Organizational Behavior and Human Decision Processes*, *75*, 23–55.

Lau, V. P., & Wong, Y. Y. (2009). Direct and multiplicative effects of ethical dispositions and ethical climates on personal justice norms: A virtue ethics perspective. *Journal of Business Ethics*, *90*, 279–294.

Leventhal, G. S. (1980). What should be done with equity theory? In K. J. Gergen, M. S. Greenberg, & R. H. Willis (Eds.), Social exchange: Advances in theory and research (pp. 27–55). New York: Plenum.

Leventhal, G. S., Karuza, J., & Fry, W. R. (1980). Beyond fairness: A theory of allocation preferences. In G. Mikula (Ed.), Justice and social interaction (pp. 167–218). New York: Springer-Verlag.

Li, A., & Cropanzano, R. (2009). Do East Asians respond more/less strongly to organizational justice than North Americans? *Journal of Management Studies*, *46*, 787–805.

Liberman, N., Idson, L. C., & Higgins, E. T. (2005). Predicting the intensity of losses vs. non-gains and non-losses vs. gains in judging fairness and value: A test of the loss aversion explanation. *Journal of Experimental Social Psychology*, *41*, 527–534.

Lind, E. A., Kanfer, R., & Earley, P. C. (1990). Voice, control and procedural justice: Instrumental and noninstrumental concerns in fairness judgments. *Journal of Personality and Social Psychology*, *59*, 952–959.

Mellers, B.A., Schwartz, A., Ho, K., & Ritov, I. (1997). Decision affect theory. *Psychological Science*, *8*, 423–429.

Moore, D. A., & Flynn, F. J. (2008). The case for behavioral decision research in organizational behavior. *Academy of Management Annals*, *2*, 399–431.

Payne, J. W. (2005). It is whether you win or lose: The importance of the overall probabilities of winning or losing in risky choice. *The Journal of Risk and Uncertainty*, *30*, 5–19.

Price, K. H., Hall, T. W., Van den Bos, K., Hunton, J. E., Lovett, S., & Tippett, M. J. (2001). Features of the value function for voice and their consistency across participants from four countries: Great Britain, Mexico, the Netherlands, and the United States. *Organizational Behavior and Human Decision Processes*, *84*, 95–121.

Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review*, *15*, 351–357.

Ryan, A. M., Chan, D., Ployhart, R. E., & Slade, A. L. (1999). Employee attitude surveys in a multi-national organization: Considering language and culture in assessing measurement equivalence. *Personnel Psychology*, *52*, 37–58.

Shapiro, D. L. (1993). Reconciling theoretical differences among procedural justice researchers by re-evaluating what it means to have one's view "considered": Implications for third-party managers. In R. Cropanzano (Ed.), Justice in the workplace: Approaching fairness in human resource management (pp. 51–78). Hillsdale, NJ: Erlbaum.

Sharp, D. J., & Salter, S. B. (1997). Project escalation and sunk costs: A test of the international generalizability of agency and prospect theories. *Journal of International Business Studies*, *28*, 101–121.

Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior and Organization*, *1*, 39–60.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*, 453–458.

Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty*, *5*, 297–323.

Van den Bos, K. (2005). What is responsible for the fair process effect? In J. Greenberg, & J. A. Colquitt (Eds.), Handbook of organizational justice: Fundamental questions about fairness in the workplace (pp. 273–300). Mahwah, NJ: Erlbaum.

Van den Bos, K., Brockner, J., Stein, J. H., Steiner, D. D., Van Yperen, N. W., & Dekker, D. M. (2010). The psychology of voice and performance capabilities in masculine and feminine cultures and contexts. *Journal of Personality and Social Psychology*, *99*, 638–648.

Van den Bos, K., & Spruijt, N. (2002). Appropriateness of decisions as a moderator of the psychology of voice. *European Journal of Social Psychology*, *32*, 57–72.

DOI: 10.1002/bdm

Authors' biographies:

E. Layne Paddock is an Assistant Professor of Organisational Behaviour and Human Resources at Singapore Management University. Her research interests include organizational justice and the work-family interface. She holds a BS and MA from the College of William & Mary and an MSc and PhD from the University of Arizona.

Jaewon Ko is a Professor in the Department of Psychology at Korea Military Academy. His research is centered on leadership issues in military settings. He holds BAs from both Korea Military Academy and Seoul National University, MA from Seoul National University, and PhD from the University of Arizona.

Russell Cropanzano is a Professor of Management and Entrepreneurship at the University of Colorado–Boulder. His research is centered on employee responses to workplace justice. He holds a BA from Louisiana State University, an MA from Southern Methodist University, and a PhD from Purdue University.

Jessica Bagger is an Associate Professor in Management and Organization at the University of Gothenburg. Her research relates to the work-family interface and organizational justice issues. Jessica earned her BA, BSBA, MSc, and PhD at the University of Arizona.

Assâad El Akremi is an Associate Professor of Management at the University of Toulouse 1–Capitole, where he also is a researcher at the Management Research Center (CNRS 5303). He holds a PhD from the University of Toulouse. His current interests include organizational justice, social exchange, and corporate social responsibility.

Julie Camerman is an Invited Professor of Organizational Behavior at the Catholic University of Louvain at Louvain-la-Neuve. She is currently the Head of the Docimology Service at the Training Institute of the Federal Administration of Belgium.

Gary J. Greguras is a Professor of OBHR in the Lee Kong Chian School of Business at Singapore Management University. His research interests include performance measurement and development, job attitudes and emotions, and values/culture. He received his PhD degree in Industrial-Organizational Psychology from Bowling Green State University.

Antonio Mladinic is a Full Professor at Universidad Católica de Chile. His research is centered on gender differences in social behavior and in particular issues related to workplace justice. He holds a BA from Universidad de Chile and an MA and PhD from Purdue University.

Carolina Moliner is an Associate Professor at the University of Valencia and a Researcher at the Institute for Research in Personnel Psychology, Organizational Development and Quality of Working Life (IDOCAL). Her research is focused on organizational justice and trust, service quality, quality of life, well-being at work, and emotions.

Kidok Nam is an Emeritus Professor in the Department of Psychology at Korea Military Academy. His research focused on group dynamics, leadership, and consumer behaviors. He holds BAs from both Korea Military Academy and Seoul National University, an MA from Seoul National University, and a PhD from the University of Illinois (Urbana-Champaign).

Kjell Törnblom is a Professor Emeritus (PhD from the University of Missouri–Columbia) and presently a Guest Professor at the Swiss Federal Institute of Technology Zurich (ETH). His most recent tenured appointments were with the University of Colorado at Denver and University of Skövde, Sweden. Major research areas are social justice and social resource theory.

Kees van den Bos is a Professor of Social Psychology including the Social Psychology of Organizations and a Professor of Empirical Legal Science at Utrecht University, the Netherlands. His research interests focus on experienced fair and unfair treatment, morality, cultural worldviews, trust, and prosocial behavior. He holds a PhD from Leiden University.

Authors' addresses:
E. Layne Paddock, Lee Kong Chian School of Business, Singapore Management University, Singapore, Singapore.

Jaewon Ko, Department of Psychology, Korea Military Academy, Seoul, Korea.

Russell Cropanzano, Leeds School of Business, University of Colorado at Boulder, Boulder, CO, USA.

Jessica Bagger, Department of Business Administration, University of Gothenburg, 40530 Göteborg, Sweden.

Assâad El Akremi, CRM, University of Toulouse 1—Capitole, Toulouse, France.

Julie Camerman, Research and Development, Training Institute of the Federal Administration, Brussels, Belgium.

Gary J. Greguras, Lee Kong Chian School of Business, Singapore Management University, Singapore, Singapore.

Antonio Mladinic, Department of Psychology, Universidad Católica de Chile, Santiago, Chile.

Carolina Moliner, Faculty of Psychology, University of Valencia, Valencia, Spain.

Kidok Nam, Department of Psychology, Korea Military Academy, Seoul, Korea.

Kjell Törnblom, ETH Zurich, Department of Environmental Systems Science (USYS), Transdisciplinarity Lab (TdLab), Zurich, Switzerland.

Kees Van den Bos, Social Psychology, Utrecht University, Utrecht, the Netherlands.

DOI: 10.1002/bdm