

# ARTICLE

## GROUP DELIBERATION AND THE ENDOWMENT EFFECT: AN EXPERIMENTAL STUDY

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### ABSTRACT

The “endowment effect” (EE)—the tendency to value an asset more when it is possessed—has been empirically studied in detail at the individual level. The prices individuals demand to sell a good they own is significantly higher than what they offer to buy it. No published study has examined the EE at the group level, however, despite implications ranging from attorney–client and international negotiation, to land use decisions, to corporate as well as legislative decisionmaking. Accordingly, this experimental study investigated the influence of group deliberation on individuals’ expression of the EE: Does group deliberation attenuate or exacerbate the EE, or does it have no effect? Further, is the EE exhibited at the group level?

Findings showed that where the EE exists for individuals, group deliberation exacerbated the individual effect; that is, post-deliberation individual judgments showed the EE even more strongly than pre-deliberation judgments. Contrast analysis confirmed that the EE grew larger after group discussion, as a

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result of an increased preference for retention of an initially allocated right. Further, the EE existed in groups' judgments.

The findings have implications in at least two broad areas: decisionmaking by groups (e.g., by boards of directors) and negotiation between groups (e.g., by attorney, political, or business teams). They also raise questions and challenges about the possibility of ameliorating the EE (e.g., education and market experience). Accordingly, the study identifies, for the first time, relevant practical applications, and lays groundwork for further research.

### BACKGROUND

The endowment effect (EE), or the tendency to experience a “warm glow of ownership” and to value a good or entitlement more highly when it is possessed, is a robust effect considered to significantly undercut basic assumptions of law and economics.<sup>1</sup> Traditional law and economics predicts that an individual's willingness to pay for a good should match her willingness to sell that good, and thus that her asking price and offer price should match. This prediction reflects basic assumptions underlying the Coase Theorem as well.<sup>2</sup> Nevertheless, the prediction has been shown to be flawed in a number of experimental and real-life settings; typically, the price that individuals tend to demand to sell a good that they own is significantly higher than the amount they would be willing to offer to buy it.<sup>3</sup> The effect is not limited to tangible assets—it can attach to intangible assets or rights.<sup>4</sup> It is present across all ages<sup>5</sup> and has been replicated cross-culturally.<sup>6</sup> And perhaps surprisingly, it can come into effect

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1. Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325, 1326–29 (1990) (demonstrating the endowment effect empirically); Jeremy A. Blumenthal, *Emotional Paternalism*, 35 FLA. ST. U. L. REV. 1, 33 (2007) (using the “warm glow” term and discussing endowment effect).

2. Kahneman, Knetsch & Thaler, *supra* note 1, at 1325–26.

3. *Id.* at 1326, 1327 tbl.1; Richard Thaler, *Towards a Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 43–44 (1978). See generally John K. Horowitz & Kenneth E. McConnell, *A Review of WTA/WTP Studies*, 44 J. ENVTL. ECON. & MGMT. 426 (2002) (reviewing forty-five studies); Serdar Sayman & Ayse Önçüler, *Effects of Study Design Characteristics on the WTA-WTP Disparity: A Meta Analytical Framework*, 26 J. ECON. PSYCHOL. 289 (2005) (reviewing thirty-nine studies).

4. See Sayman & Önçüler, *supra* note 3, at 290 (describing an early study observing disparity in valuation of hunting rights).

5. E.g., William T. Harbaugh, Kate Krause & Lise Vesterlund, *Are Adults Better Behaved Than Children? Age, Experience, and the Endowment Effect*, 70 ECON. LETTERS 175, 178–79 (2001) (finding no difference in endowment effect between children and college undergraduates).

6. Peter J. Carnevale & Alison Ledgerwood, *Identity Rivalry and the Group*

almost instantly; although it can become stronger as a right or asset is held longer, it appears even for assets obtained just moments before.<sup>7</sup> It is robust across a wide variety of situations, both laboratory and real life,<sup>8</sup> and is considered by some the most important empirical contribution that behavioral law and economics has made.<sup>9</sup>

The effect is generally attributed to “loss aversion,” where losing something of a given magnitude causes a larger decrease in utility than the increase in utility that gaining a good of that magnitude would cause.<sup>10</sup> That is, the EE seems to stem more from a perceived disutility of parting with an asset, than from a

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Endowment Effect 3–4. Paper presented at the annual meeting of the International Association of Conflict Management, Seville, Spain (June 2005) [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=724227](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=724227).

7. Michael A. Strahilevitz & George Lowenstein, *The Effect of Ownership History on the Valuation of Objects*, 25 J. CONSUMER RES. 276, 285 (1998); Kahneman, Knetsch & Thaler, *supra* note 1, at 1342.

8. Jennifer Arlen, Matthew Spitzer & Eric Talley, *Endowment Effects Within Corporate Agency Relationships*, 31 J. LEGAL STUD. 1, 7 (2002); Samuel Issacharoff, *Can There Be a Behavioral Law and Economics?*, 51 VAND. L. REV. 1729, 1734–35 (1998). Its strength varies according to a number of factors, including whether the good is held for use or exchange, whether the good is typically a market good, and others. *See, e.g.*, Horowitz & McConnell, *supra* note 3, at 427 (typical market good); Sayman & Öncüler, *supra* note 3, at 293 (availability of substitutes and availability to be traded on the market).

9. *E.g.*, Issacharoff, *supra* note 8, at 1735; Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1229 (2003). One author considers it to be the fundamental evolutionary basis for private property in the first place. Herbert Gintis, *The Evolution of Private Property*, 64 J. ECON. BEHAV. & ORG. 1, 5 (2007).

Two studies are often cited to show that there is no endowment effect, or only a weak effect: Charles R. Plott & Kathryn Zeiler, *Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?*, 97 AM. ECON. REV. 1449, 1463 (2007) and Charles R. Plott & Kathryn Zeiler, *The Willingness to Pay-Willingness to Accept Gap, the “Endowment Effect,” Subject Misconceptions, and Experimental Procedures for Eliciting Valuations*, 95 AM. ECON. REV. 530, 542 (2005). Of course, finding a null effect in an experiment does not show that the phenomenon in question does not really exist; rather, it shows either that the experiment may not have been powerful enough to identify the effect, or even that it was powerful enough but the procedures that were applied “corrected” the phenomenon. Jeremy A. Blumenthal, *Thoughts on Plott and Zeiler (2005, 2007)* 4 (Nov. 13, 2009) (on file with author). Indeed, some procedures might correct a bias too much, leading to overcorrection. *See infra* notes 96–99 and accompanying text. Plott and Zeiler’s data in fact show a slight reverse endowment effect. Plott & Zeiler, *supra*, at 1460; *see* Blumenthal, *supra*, at 4–5 (applying a more liberal and slightly more powerful statistical analysis to Plott & Zeiler’s original experimental data).

10. Kahneman, Knetsch & Thaler, *supra* note 1, at 1326–28; Korobkin, *supra* note 9, at 1250; Leaf Van Boven, David Dunning & George Loewenstein, *Egocentric Empathy Gaps Between Owners and Buyers: Misperceptions of the Endowment Effect*, 79 J. PERSONALITY & SOC. PSYCHOL. 66, 66 (2000). *But see* Owen D. Jones & Sarah F. Brosnan, *Law, Biology, and Property: A New Theory of the Endowment Effect*, 49 WM. & MARY L. REV. 1935, 1951 (2008) (acknowledging the loss-aversion explanation but suggesting it is inadequate).

perceived increase in the asset's value.<sup>11</sup> Further, the effect seems to stem from primarily emotional, as opposed to cognitive, factors.<sup>12</sup> A recent review of why the EE occurs emphasized four potential explanations, all with emotional underpinnings: (1) "pure" loss aversion, where to lose something "simply hurts more" than not obtaining it—a bias that simply reflects "difference[s] in emotional content;" (2) "attachment," where simply owning an entitlement adds value, sentimental or otherwise, over and above the entitlement's pure "commodity status;" (3) a "regret avoidance" hypothesis, reflecting the notion that "giving up an entitlement is more likely to cause future regret than not obtaining an entitlement;" and (4) the "disutility" of selling, where simply participating in the sale of an entitlement causes dysphoria, especially when that sale involves inappropriately commodifying that entitlement.<sup>13</sup> As an empirical matter, such reluctance to commodify does seem to underlie many of the EE findings: two recent meta-analytic reviews of EE studies demonstrated that the less a possession is like an "ordinary market good," the more likely it is that the EE will occur.<sup>14</sup> Recent experimental research lends further credence to the role of emotional reactions or regret avoidance in the EE, finding a correlation between the perceived "importance" of a possession and the degree of loss aversion.<sup>15</sup>

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11. Jeffrey J. Rachlinski & Forest Jourden, *Remedies and the Psychology of Ownership*, 51 VAND. L. REV. 1541, 1553 (1998).

12. Blumenthal, *supra* note 1, at 34; Korobkin, *supra* note 9, at 1250–55.

13. Korobkin, *supra* note 9, at 1250–55.

14. Horowitz & McConnell, *supra* note 3, at 427 (reviewing forty-five studies and finding that EE is highest for nonmarket goods and lowest for various forms of money, with "ordinary private goods" falling somewhere in between); Sayman & Önçüler, *supra* note 3, at 300, 304 tbl.2 (reviewing thirty-nine studies and finding that similarity of good to "market good" was negatively correlated with strength of EE, and "perceived illegitimacy" of transaction was positively correlated with strength of EE); *see also* Kahneman, Knetsch & Thaler, *supra* note 1, at 1344 (noting that EE reflects an unwillingness to sell, but little unwillingness to buy, suggesting that what is involved is a difficulty parting with a good, rather than with money). More precisely, the meta-analyses reviewed studies examining the disparity between the willingness to pay for a good or entitlement and the willingness to accept some compensation for that same good or entitlement. The endowment effect reflects that disparity. *See, e.g.*, Kahneman, Knetsch & Thaler, *supra* note 1, at 1342 ("The endowment effect is one explanation for the systematic differences between buying and selling prices that have been observed so often in past work.").

15. *See* Ying Zhang & Ayelet Fishbach, *The Role of Anticipated Emotions in the Endowment Effect*, 15 J. CONSUMER PSYCHOL. 316, 322 (2005) (finding that anticipated emotional reactions have an impact on loss aversion); Eric J. Johnson, Simon Gächter & Andreas Herrmann, *Exploring the Nature of Loss Aversion* 23–24 (Mar. 2006) (unpublished manuscript), *available at* [http://papers.ssrn.com/sol3/papers.cfm?Abstract\\_id=892336](http://papers.ssrn.com/sol3/papers.cfm?Abstract_id=892336) (finding that knowledge, importance, and age have an impact on loss aversion). The potential for market inefficiencies to result from under-trading (based

The EE has been repeatedly observed at the individual level.<sup>16</sup> Surprisingly, however, little research exists on EE in the group setting. Knowing whether it occurs at the group level, though, is important both at the theoretical or basic research level, and in a number of practical contexts.

First, as a theoretical matter, it is not immediately clear what effect group discussion should have on individuals' tendency to exhibit the EE. That is, the effect of group discussion on individual judgments has long been a focus of study in social psychology—indeed, social psychology might be seen precisely *as* the study of group influence on individual judgment—but it is not always clear what effect there might be.<sup>17</sup> In some instances, group discussion might ameliorate or even eliminate individual biases or errors in decisionmaking, based, for instance, on the ability to share information, correct misinformation, or through other means.<sup>18</sup> In other contexts, group discussion might exacerbate or even cause biases, as in the well-known “risky shift” or groupthink phenomena.<sup>19</sup> Finally, of course, there might

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on potential market participants' EE or disparity between willingness to pay and willingness to accept) has led some scholars to discuss the propriety of third-party intervention to attenuate the effect. *E.g.*, Blumenthal, *supra* note 1, at 35; Cass R. Sunstein, *Legal Interference with Private Preferences*, 53 U. CHI. L. REV. 1129, 1172 (1986) (arguing that the endowment effect and related biases may support “considerable legislative and judicial intrusion into private preference structures”).

16. See Arlen, Spitzer & Talley, *supra* note 8, at 3 (finding “an increasing body of empirical and experimental evidence” in support of the EE in individual decisionmaking); see also Korobkin, *supra* note 9, at 1232–35 (discussing various experiments in which individuals demonstrated the EE).

17. See Norbert L. Kerr, Robert J. MacCoun & Geoffrey P. Kramer, *Bias in Judgment: Comparing Individuals and Groups*, 103 PSYCHOL. REV. 687, 692–93 (1996) (collecting existing research on group decisionmaking and concluding that research did not conclusively demonstrate an effect caused by group judgment).

18. For examples, see Dagmar Stahlberg et al., *We Knew it All Along: Hindsight Bias in Groups*, 63 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 46, 55–56 (1995) (finding that group discussion ameliorates hindsight bias); Gwen M. Wittenbaum & Garold Stasser, *The Role of Prior Expectancy and Group Discussion in the Attribution of Attitudes*, 31 J. EXPERIMENTAL SOC. PSYCHOL. 82, 99 (1995) (showing that group discussion attenuates the tendency to make dispositional attributions).

19. See generally ROGER BROWN, SOCIAL PSYCHOLOGY: THE SECOND EDITION 200–48 (1986) (discussing risky shift phenomenon); IRVING L. JANIS, GROUPTHINK: PSYCHOLOGICAL STUDIES OF POLICY DECISIONS AND FIASCOES (2d ed. 1982); Cass R. Sunstein, *Deliberative Trouble? Why Groups Go to Extremes*, 110 YALE L.J. 71 (2000) (explaining group polarization and its effect on deliberative democracy). For examples of group discussion exacerbating individual biases, see Paul W. Paese, Mary Bieser & Mark E. Tubbs, *Framing Effects and Choice Shifts in Group Decision Making*, 56 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 149, 160 (1993), finding group decisions were riskier when members were risk-seekers and more risk-averse when members were not, and Glen Whyte, *Escalating Commitment in Individual and Group Decision Making: A Prospect Theory Approach*, 54 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 430, 447 (1993), observing that groups are more susceptible to the influence of sunk costs.

be no effect of group discussion, and individual judgments after deliberation may be just as biased as before (or group judgments will be biased or unbiased, unrelated to whether individual biases existed).<sup>20</sup> Kerr and colleagues have been prominent in trying to disentangle ways to predict when each of these might happen; one possibility relates simply to the strength of the initial bias: the stronger the individual bias, they have suggested, the more likely it will be expressed at the group level.<sup>21</sup>

Adding to the lack of clarity about what effect to expect, recall that the EE stems primarily from emotional factors, rather than cognitive. However, little research has examined the influence of group discussion specifically on emotional biases.<sup>22</sup> “Studies that investigate mood’s influence on legal [or social] judgments, for instance, often do not take the next step to examine the effect of deliberation . . . .”<sup>23</sup> Those that do have yielded mixed results. In early research, Kaplan and Miller induced a negative mood in mock jurors by exposing them to annoying behavior by the participants in the criminal case they watched.<sup>24</sup> In various conditions, the attorney on each side badgered witnesses, engaged in “obnoxious asides” to his audience, or needlessly repeated questions to the witnesses.<sup>25</sup> In another condition, the judge was the one acting to annoy the mock jurors, interrupting the trial to “ask pointless questions, to scold both attorneys, to give obscure points of law, and once to leave the room for a phone call.”<sup>26</sup> In yet another condition the experimenter was the one to elicit annoyance, for instance with equipment breaking down, necessitating delay.<sup>27</sup>

The researchers found that jurors reported substantial annoyance, and this negative mood expressed itself in ratings of

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20. For a good discussion of distinguishing these possibilities at the theoretical level (i.e., addressing whether and how group information processing might be different from individuals’ in the first place), see generally Norbert L. Kerr, Keith E. Niedermeier & Martin F. Kaplan, *On the Virtues of Assuming Minimal Differences in Information Processing in Individuals and Groups*, 3 GROUP PROCESSES & INTERGROUP REL. 203 (2000).

21. Kerr, MacCoun & Kramer, *supra* note 17, at 713.

22. See Jeremy A. Blumenthal, *Does Mood Influence Moral Judgment? An Empirical Test with Legal and Policy Implications*, 29 LAW & PSYCHOL. REV. 1, 21 (2005); Joseph P. Forgas, *Affective Influences on Individual and Group Judgments*, 20 EUR. J. SOC. PSYCHOL. 441, 443, 449–51 (1990) (noting the lack of group studies as a reason for conducting a study on the impact of group discussion on positive and negative judgments).

23. Blumenthal, *supra* note 22, at 21.

24. Martin F. Kaplan & Lynn E. Miller, *Reducing the Effects of Juror Bias*, 36 J. PERSONALITY & SOC. PSYCHOL. 1443, 1451 (1978).

25. *Id.*

26. *Id.*

27. *Id.*

the defendant's guilt: When the prosecutor was the cause of the annoyance, guilt ratings went down; when the defense attorney was the cause, guilt ratings went up.<sup>28</sup> In both instances, however, deliberation virtually eliminated the effects of this negative mood; group judgments became more polarized in the direction of the weight of the evidence.<sup>29</sup> Thus, in the context of negative mood, of the sort that plausibly might be elicited during a frustrating, unfamiliar trial, mood influences on mock juror judgments were nevertheless attenuated by group discussion.

Joseph Forgas, a psychologist, investigated the effect of group discussion on social judgments, though not in the jury context.<sup>30</sup> In this research, participants were asked to rate various person categories (e.g., Italians, Catholics, librarians).<sup>31</sup> Participants made their ratings both individually and in groups of three, after having either a positive or negative mood induced.<sup>32</sup> Subjects participated in either condition in separate sessions, about two weeks apart, and their ratings from the two sorts of sessions were compared.<sup>33</sup> Participants in positive moods who discussed their ratings ended up giving more extreme ratings on the "evaluative" scale (arguably closest to the sort of rating a jury might make), obtaining the sort of polarization shift observed in other research.<sup>34</sup> There was tentative evidence that negative judgments were also polarized; although Forgas reported that this effect "did not reach significance," he did not report the size of the effect.<sup>35</sup> Thus, although he concluded that the effects of negative mood were attenuated by group discussion, the extent to which this is so is not clear. Positive mood effects, however, were not attenuated.<sup>36</sup>

The effect of group deliberation on the individual emotional bias is thus one important research question. A second, though, is whether groups as units exhibit the EE on their own. That is, when groups are asked to render decisions, do they reflect a preference for the status quo, or, relatedly, a higher price to part with a good than to buy it?

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28. *Id.* at 1451–52.

29. *Id.* at 1452.

30. Forgas, *supra* note 22, at 444.

31. *Id.* at 445.

32. *Id.* at 445–46. A number of different ratings were collected, such as "evaluative" (combining likeability and honesty), "competence" (combining intelligence and industriousness), and "self-confidence." *Id.* at 447.

33. *Id.* at 446, 449.

34. *Id.* at 449–50.

35. *Id.*

36. *Id.* at 449–51.

The potential presence of the EE at the group level has important practical implications. One of the clearest involves business and corporate decisionmaking, in particular at the board of directors level. To what extent might the EE make it less likely for businesses to sell assets,<sup>37</sup> or for boards of directors to accept takeover bids? Similarly, to what extent might shareholders be less likely to agree to sell their shares at a particular price, especially after a group meeting? It is true, of course, that “corporations” do not actually make decisions, but rather the people within the corporations make decisions.<sup>38</sup> Nevertheless, in corporate and many other contexts, individual judgments and biases may be affected by group discussion. Accordingly, it is important in such instances to investigate what effect group discussion might have on the EE, including in the corporate context.<sup>39</sup> More than twenty years ago Herbert Hovenkamp noted that existing EE studies investigated only individuals, however, not multi-owner firms.<sup>40</sup> More recently, Russell Korobkin again noted the lack of research into whether decisions made in the corporate context exhibit the EE.<sup>41</sup> Surprisingly, researchers have not heeded these calls for more relevant research.<sup>42</sup>

In addition to the business setting, commentators have suggested the relevance of the EE in the context of land-use decisions, in particular ones that might involve community deliberation. Korobkin, for instance, sees the EE as a potential barrier to enacting zoning regulations that a community might seek in order to restrict a landowner’s particular use because the landowner might have a higher selling price than the community views as appropriate.<sup>43</sup> That is, the landowner might feel endowed with the right to use his property as he wishes, and the

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37. Thaddeus L. Pitney, *Endowment Effects and the Efficient Allocation of Business Assets* 31 (May 1, 2006) (unpublished manuscript) (on file with author).

38. Korobkin, *supra* note 9, at 1241.

39. See Pitney, *supra* note 37, at 36 (“To provide a better understanding of how the endowment effect actually affects businesses, research should be conducted specifically on the endowment effect in business settings.”).

40. Herbert Hovenkamp, *Legal Policy and the Endowment Effect*, 20 J. LEGAL STUD. 225, 237 (1991).

41. Korobkin, *supra* note 9, at 1241.

42. One of the few efforts to examine the EE in a corporate setting looked at the effect of principal-agent decisionmaking. Arlen, Spitzer & Talley, *supra* note 8, at 4–5. As Korobkin has pointed out, however, study participants there had no experience in the decisions they were supposed to make. Moreover, direct financial consequences were involved for the subjects. Korobkin, *supra* note 9, at 1241 n.76. Thus, the Arlen et al. study is somewhat less applicable to the present research question.

43. Korobkin, *supra* note 9, at 1263.

local government would likely be unable to persuade him to sell the right to do so. Korobkin is not clear, however, why this prevents the local government from actually promulgating such a regulation, as opposed to simply making it more difficult to negotiate prior to acting legislatively. His better example involves a potential change in a regulation already in place, which might be subject to the EE on behalf of either the local government or the community, who might feel “endowed” with the right to restrict or, in any event, might prefer the status quo.<sup>44</sup> Clearly, group discussion among community members might influence their perceptions and the value associated with the regulation.

Similarly, Georgette Poindexter has discussed the EE in the context of what she calls “communal aesthetics,” or the expression of a community’s “vision of the physical ideal of their city . . . captur[ing] the social implementation of collective aesthetic values.”<sup>45</sup> When zoning regulations are not expressly designed to prevent harm, she argues, landowners whose property is regulated have a potentially stronger legal challenge to those regulations.<sup>46</sup> The EE might make it even more difficult to persuade a landowner to accept an aesthetic zoning law;<sup>47</sup> equally, community members might feel endowed with a particular physical form of the city, rendering a change to a new physical form difficult. Again, group discussion among community members about a change from one form to another might affect the perceived value of the existing form and thus the likelihood of making that change.

The “Residents’ Choice Rule” developed by Rachel Godsil raises another example of the potential biasing effect of the EE.<sup>48</sup> Godsil discusses some companies’ practice of siting polluting facilities in “under-protected communities,” typically those with segregated minority communities with little political power to object.<sup>49</sup> She suggests a reworking of traditional common-law nuisance rules, including Calabresi and Melamed’s property/liability rule distinctions, to develop a “Residents’

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44. *Id.*

45. Georgette C. Poindexter, *Light, Air, or Manhattanization?: Communal Aesthetics in Zoning Central City Real Estate Development*, 78 B.U. L. REV. 445, 447–48 (1998).

46. *Id.* at 448–49.

47. *See id.* at 500 (arguing that the endowment effect “could distort the merits of communal aesthetics by giving disproportionate value to the existing form”).

48. Rachel D. Godsil, *Viewing the Cathedral from Behind the Color Line: Property Rules, Liability Rules, and Environmental Racism*, 53 EMORY L.J. 1807, 1872 (2004).

49. *See id.* at 1871.

Choice Rule” in which an entitlement is located in the residents of the community or neighborhood in question, and the residents are allowed to choose the form of protection—property rule or liability rule—by majority vote.<sup>50</sup> Presumably, each community member may be subject to the EE in his perception of the relevant property value; the deliberation necessary for deciding *as a group* (or at least for coming to a majority decision) may influence the existence and expression of the EE.<sup>51</sup>

At yet a broader level, scholars have interpreted the EE to suggest that many sorts of government regulation may be difficult; more specifically, once a particular rule or policy is in place, a group that benefits from it could come to value it more than if the rule had not yet been promulgated and would accordingly work harder to preserve the policy than if it did not yet exist.<sup>52</sup> This interpretation, however, implicitly assumes the presence of the EE at the group level, suggesting that particular interest groups feel endowed with an asset, a good, a distribution regime, or a right.<sup>53</sup> This is the sort of assumption the present study seeks to examine.<sup>54</sup>

Finally, another sort of group discussion involves negotiation between parties. Each side might have one or more negotiators, leading to group discussion as part of the negotiations, but also, potentially, within groups on each side. Either sort of group discussion—within or between sides—might affect individuals’ perceptions. Of course, such negotiations take place at all levels, from interpersonal to international. The EE might influence international negotiations not only over land, but also rights; because of the celerity with which it attaches, it could even decrease a state’s willingness to part with land it just recently occupied, as in wartime.<sup>55</sup>

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50. *Id.* at 1872.

51. It may also lead to other group effects, as noted above. *See supra* note 19 and accompanying text.

52. *E.g.*, Clayton P. Gillette, *Lock-in Effects in Law and Norms*, 78 B.U. L. REV. 813, 827 (1998) (stating that when legal change is proposed, “the endowment effect suggests that those who enjoy the benefits of the status quo will value those benefits more highly than those who advocate change value their agenda”); Korobkin, *supra* note 9, at 1266–67 (“[P]arties who benefit from the status quo will fight harder to avoid a change in the status quo than they would have fought to establish their preferred position if the status quo had been the opposite, and this will make the status quo difficult to change.”).

53. *See* Gillette, *supra* note 52, at 827 (suggesting that parties responsible for passing existing laws may be subject to the endowment effect due to their investment in producing the laws).

54. And, of course, the sort of discussion or deliberation involved is quite different from the more conventional face-to-face discussion that might lead to the group effects posited here.

55. *See* Van Boven, Loewenstein & Dunning, *supra* note 10, at 352.

Quite a different sort of negotiation (at least in theory) involves litigants. For instance, the EE might influence plaintiffs' perceptions of the value of their lawsuit, leading them to suggest a higher settlement value to their attorneys (or to not want to settle at all).<sup>56</sup> Discussion with that attorney may or may not lead to a different—perhaps more realistic—settlement value; whether such discussion in fact affects their perception of the actual value is another empirical question. Relatedly, some research indicates that an agent acting on behalf of a principal is less likely to demonstrate the EE;<sup>57</sup> to the extent that an attorney conducting settlement negotiations nevertheless does exhibit it, to what extent might such negotiation affect perceptions of the lawsuit's value or the appropriate settlement amount? Of course, this sort of group discussion is distinct from deliberation within a decisionmaking group; however, neither question has been subjected to much empirical study.

All of these possibilities remain speculative, however, illustrating the usefulness of additional relevant empirical research. But despite the evident theoretical and practical usefulness of examining the issue, little relevant empirical research exists. In one (unpublished) study of the effect of group discussion on the endowment effect,<sup>58</sup> both individuals and groups were separately asked to negotiate over certain academic curricular requirements: specifically, what compensation they would demand for the addition of a seminar to their course requirements and what amount they would offer to pay for the removal of that same seminar from their requirements.<sup>59</sup> Those individual and group judgments were compared. The authors found an EE for individual judgments, and an even stronger one for group judgments, suggesting that group discussion had exacerbated the effect.<sup>60</sup> Although they did not discuss the reason, examining their findings suggests that the effect stemmed from groups placing a higher value on the rights they owned (were endowed with), rather than a

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56. More precisely, it might influence their perceptions of an appropriate value for which to “sell” or settle the lawsuit; recall that the EE seems to stem from the disutility of parting with an asset, rather than an increased actual value. See Kahneman, Knetsch & Thaler, *supra* note 1, at 1339; *supra* note 11 and accompanying text.

57. See Arlen, Spitzer & Talley, *supra* note 8, at 18.

58. Amira Galin et al., *The Endowment Effect in Individual and Team Negotiations* 5 (Henry Crown Inst. of Bus. Research, Working Paper No. 8, 2006), available at [http://reanati.tau.ac.il/Eng/\\_Uploads/dbsAttachedFiles/WP\\_8-2006\\_Galin\\_Gross.pdf](http://reanati.tau.ac.il/Eng/_Uploads/dbsAttachedFiles/WP_8-2006_Galin_Gross.pdf).

59. *Id.* at 5–6.

60. *Id.* at 9.

lower value placed on a right that negotiators wanted to purchase.

In similar research, Peter Carnevale focused primarily on the effect of culture on whether the EE was exhibited.<sup>61</sup> He divided study participants into individuals or couples, from both individualistic and collectivist cultures.<sup>62</sup> He found the EE present in individuals from individualistic cultures and, with some caveats, in couples from collectivist cultures.<sup>63</sup> His research studied only couples, not groups. Further, it focused less on the impact of discussion, and neither his study nor the curriculum negotiation study compared individuals' judgments before and after deliberation. Finally, Carnevale has also investigated what he calls a "group endowment effect," focusing on whether individuals exhibit the EE for an asset that is held by (or associated with) a group with which the individual has an identity bond.<sup>64</sup> Again, however, the focus there was still on individuals' expression of the EE, not the influence of group discussion on that individual expression or on whether groups exhibit the effect.

Given this dearth of research, this study investigated the influence of group discussion on individual expression of the EE: *Does group deliberation attenuate or exacerbate the EE, or does it have no effect?* It also examined whether the EE is present at the group level: *Do groups endowed with an entitlement value it more than when they are not endowed with the same entitlement?*

## METHOD

### *Overview*

The present study compared individual and group decisionmaking regarding the purchase or sale of particular rights. For both individuals and groups, the preference for buying versus selling such rights was compared. Discrepancies between the preferences and values assigned to the right when a decisionmaker was buying versus selling would demonstrate the presence of the endowment effect; differences between types of decisionmakers, of course, would show the influence of group discussion.

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61. Peter J. Carnevale, *Property, Culture, and Negotiation*, in *NEGOTIATION AS A SOCIAL PROCESS* 309, 310 (Roderick M. Kramer & David M. Messick eds., 1995).

62. *Id.* at 310, 318.

63. *Id.* at 319.

64. Carnevale & Ledgerwood, *supra* note 6, at 4–5.

*Participants*

One hundred fifty-nine university students participated (74 men and 85 women), with a mean age of 22.56 (std. dev. = 4.27). Sixty-two were undergraduates, ninety-three were law students, and four did not indicate their educational status. Undergraduates, as well as fifty-three law students, participated for course credit. The other law students participated for the possibility of winning a prize (cash or gift certificate) worth either \$50 or \$100.

*Procedure*

After being introduced to the study, all participants were told that they would participate alone and in a group and were seated with the other subjects who would constitute their group. They were then given a questionnaire with the study material. Each participant read and signed an informed-consent form,<sup>65</sup> and proceeded to complete the questionnaire. Participants first completed background information such as age, sex, level of education, and political orientation.<sup>66</sup> They then read one of two scenarios, discussed further *infra*, and were asked to respond individually to a series of questions, including their preference for buying or selling. (Options included a range from “definitely should buy [not sell]” and “probably should buy [not sell],” to “not sure,” to “probably should not buy [sell]” and “definitely should not buy [sell].”) When all subjects in each group had completed the individual questions, they were instructed to discuss the material and answer the same questions as a group. Groups consisted of three to four members, with one group of two members. A total of forty-seven groups made collective judgments.

After recording their group answers, participants were asked again for a post-deliberation, individual judgment. This sequence (individual judgments, followed by group discussion and group answers, followed by post-deliberation individual answers) was repeated for the second scenario.<sup>67</sup> Participants were then thanked and excused.

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65. All procedures were conducted in accordance with the ethical guidelines of the American Psychological Association. See AM. PSYCHOLOGICAL ASS'N, ETHICAL PRINCIPLES OF PSYCHOLOGISTS AND CODE OF CONDUCT § 3.10 (2010).

66. Because the EE involves emotion, subjects also reported their current mood on two scales with endpoints of “not at all happy” and “extremely happy” and “not at all angry” and “extremely angry.” These ratings, however, were not related to any of the findings reported below and are not discussed further.

67. The order of the scenarios' presentation was counterbalanced across subjects to

*Study Design and Materials*

Again, the materials consisted of two hypothetical scenarios, “Henry’s Pond” and “Del-Mott,” taken from Rachlinski and Jourden’s 1998 endowment effect study.<sup>68</sup> The scenarios are described in detail in that paper<sup>69</sup> and are provided in the Appendix *infra*. Briefly, subjects are asked to act on behalf of either an environmental-preservation trust protecting a particular wetland area (Henry’s Pond), or a startup biotech firm that has developed a particular pesticide from an endangered plant (Del-Mott). In Henry’s Pond, the wetland area is home to rare species of ducks and geese that the Trust seeks to protect. Unfortunately, a helicopter company has begun conducting business next to the Pond, causing difficulties on both sides (as the scenario puts it, “Helicopters and birds do not mix well.”). In the different scenario conditions, participants are told either that the Trust’s property rights are legally protected, but they can sell the rights to the helicopter company; or that the property rights are not protected, and they must purchase the right to continue their use and thus the protection of the bird species and the status quo. The money either obtained from the company or saved from not having to purchase could be used for another environmental protection project, saving seals off the coast of Canada (“Seal Island”).

In the Del-Mott scenario, participants are on the board of a biotech firm that has developed a pesticide from particular endangered plants; however, the firm has come into conflict with a larger chemical company whose conduct would destroy the plants. Subjects are told either that they have the legal right to continue using the plants (and thus that the company must purchase it from them) or that they must purchase the right to continue using and protecting the plants from the chemical company. The money either obtained from the company or saved from not having to purchase may be used for other activities, such as debt reduction, and the firm could engage in a public stock offering.

The study involved two primary experimental manipulations. The first was whether the decision was made as an individual or as a group. The second was whether the decisionmaker (whether individual or group) was asked to make

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avoid order effects. Carey S. Ryan & Kelvin L. Van Manen, *Order Effects*, in 2 ENCYCLOPEDIA OF SOCIAL PSYCHOLOGY 639 (Roy F. Baumeister & Kathleen D. Vohs eds., 2007).

68. Rachlinski & Jourden, *supra* note 11, at 1577–82.

69. *Id.* at 1561–66.

a judgment about a particular right from a “sell” (endowed) or “buy” (unendowed) perspective. That is, subjects were instructed either that they owned a set of rights and could sell them (“sell” condition), or that they were able to make a purchase that would enable them to retain that same set of rights (“buy” condition).<sup>70</sup> Again, differences between the “buy” and “sell” condition would indicate the endowment effect; the question of focal interest was whether the size of that effect would differ based on the decisionmaker condition.

Specifically, in the Henry’s Pond (HP) scenario, if participants in the Buy (unendowed) condition favored *buying* the helicopter company’s right to conduct their business, then that would suggest they wanted to protect the Pond. If they instead favored *not buying* the right, then they would prefer dispensing with their allocated right to the Pond and using money to purchase Seal Island and save the seals. Thus, preferences for buying the helicopter company’s rights would illustrate a preference for saving the Pond and maintaining the status quo. In the Sell (endowed) condition, similarly, a preference for *not selling* would indicate a desire to save the Pond and thus a preference for the status quo; a preference for *selling* would indicate a desire to purchase Seal Island and save the seals, and thus a preference for relinquishing the status quo. In sum, a preference for *buying* or *not selling* would indicate a desire to save the Pond and a preference for the status quo. Given the questionnaire construction, these preferences would be shown by higher scores on the questionnaire ratings (lower scores would indicate a preference for relinquishing the status quo).

The same was so for the Del-Mott (DM) scenario. In the Buy (unendowed) condition, a preference for *buying* Del-Mott’s rights over the plants would indicate a preference for protecting the plants and maintaining the status quo; a preference for *not buying* the rights would indicate acquiescence in Del-Mott’s destroying the plants and a change in the status quo. In the Sell (endowed) condition, a preference for *selling* would indicate a willingness to relinquish the rights to the plants and acquiesce in their destruction, changing the status quo. A preference for *not selling* would indicate a preference for maintaining the status quo, protecting the existing allocated right to protect the plants.

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70. *Id.* at 1560 (“Thus, the materials essentially required the subjects to state a preference for one of two sets of rights, and manipulated which ones they already owned (or were about to own).”).

Thus, a significantly higher score for the Sell condition relative to the Buy condition would demonstrate the endowment effect, because that would show a preference for maintaining the status quo when a party was endowed with an initially allocated right.

### Results

Before turning to any effect of group deliberation, I evaluated whether the EE was present at the individual level, looking first at pre-deliberation, individual judgments. For the DM scenario, as predicted, the mean for the Sell condition was significantly higher than the Buy condition (see *infra* Figure 1, left panel).<sup>71</sup> Unlike Rachlinski and Jourden's findings, however, participants here exhibited no EE for the HP scenario.<sup>72</sup> Because the primary question here is the effect of group deliberation on the EE, I excluded the HP scenario from further analysis. Accordingly, only the DM scenario results are presented here.

I then tested the effect of group deliberation in a number of ways. First, I looked at the traditional question of whether group discussion had an effect on individual judgments—in particular, whether individuals' pre-deliberation judgments differed from their post-deliberation judgments.

Just as the EE was present for pre-deliberation individual judgments, it was present for post-deliberation individual judgments as well. Specifically, although pre- and post-deliberation judgments were highly correlated,<sup>73</sup> there was an effect of the manipulation on individual post-deliberation judgments (see *infra* Figure 2). Indeed, the effect of the experimental manipulation was even stronger on post-deliberation judgments, suggesting that the EE was present to a greater degree after group deliberation.<sup>74</sup> Another way to view this is to look at the difference scores for each subject (i.e., rather than at the group means), looking at the degree of change from pre- to post-deliberation. This change was significantly different from zero—that is, individual subjects exhibited significantly

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71.  $t(157) = -1.662$ ,  $p < 0.05$  (1-tailed),  $r = -0.131$  ( $M_{Buy} = 3.76$ ,  $sd = 0.997$ ,  $n = 80$ ;  $M_{Sell} = 4.04$ ,  $sd = 1.091$ ,  $n = 79$ ). One-tailed tests were used here because a specific hypothesis existed about the direction of the results (i.e., that Sell condition means would be higher than the Buy condition means).

72. Cf. Rachlinski & Jourden, *supra* note 11, at 1566–68.

73.  $r(155) = 0.578$ ,  $p < 0.001$ .

74.  $t(154) = -3.448$ ,  $p = 0.0005$  (1-tailed),  $r = -0.268$  ( $M_{Buy} = 3.77$ ,  $sd = 1.037$ ,  $n = 77$ ;  $M_{Sell} = 4.32$ ,  $sd = 0.955$ ,  $n = 79$ ).

more of a preference for the status quo *after* deliberation.<sup>75</sup> Individual judgments apparently became more extreme as a result of group deliberation, but only in the Sell condition, mirroring Galin et al.'s findings.<sup>76</sup>

Finally, I directly tested the question whether individual and group decisions differed in predictable ways. Consistent with the earlier findings, I expected group deliberation to exacerbate any endowment effect that existed, in particular by making judgments in the Sell condition more extreme. This analysis was done by a set of planned contrasts, which allow a researcher to test not just whether general differences exist, but whether the observed data fit a specific *pattern* identified ahead of time—here, the pattern suggested by Galin et al.'s data.<sup>77</sup> The observed data fit the predicted pattern well.<sup>78</sup> As expected, what the effect seemed to reflect was an EE that grew larger after group discussion as a result of an increased preference for retention of a particular, initially allocated right. This pattern was also present in a more narrow analysis, where subjects were asked simply for a preference to buy or sell (as opposed to the range of options described above).<sup>79</sup> Specifically, for the forced-choice decisions, groups were significantly more likely to want to buy or not sell rights (i.e., to maintain the status quo), relative to individuals.<sup>80</sup>

Finally, I compared post-deliberation *group* judgments in the two experimental conditions, Buy and Sell, and found a strong EE at the group level (see *infra* Figure 1, right panel).<sup>81</sup> That is, the decisions made by groups after deliberation also reflected a preference for the status quo.

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75.  $t(155) = 1.94$ ,  $p = 0.054$  (2-tailed) ( $M_{\text{pre-deliberation}} = 3.90$ ,  $sd = 1.051$ ,  $n = 159$ ;  $M_{\text{post-deliberation}} = 4.04$ ,  $sd = 1.031$ ,  $n = 156$ ).

76. See *supra* notes 58–60 and accompanying text.

77. See Galin et al., *supra* note 58, at 12 (finding that team negotiations intensified the EE bias held by individuals). For information on planned contrasts, see generally ROBERT ROSENTHAL & RALPH L. ROSNOW, *CONTRAST ANALYSIS: FOCUSED COMPARISONS IN THE ANALYSIS OF VARIANCE* (1985) and R. Michael Furr & Robert Rosenthal, *Evaluating Theories Efficiently: The Nuts and Bolts of Contrast Analysis*, 2 UNDERSTANDING STAT. 45 (2003). With planned contrasts, a researcher assigns contrast weights or values to a particular hypothesized pattern. ROSENTHAL & ROSNOW, *supra*, at 2. Focused statistical tests, more statistically powerful than analysis of variance, can then address the match between the observed data and that pattern. See *id.* at 1–3; Furr & Rosenthal, *supra*, at 46–48 (comparing planned contrasts with analysis of variance).

78.  $t(202) = 3.00$ ,  $p < 0.0025$  (1-tailed),  $r = 0.208$ .

79. See *supra* text accompanying notes 66–67.

80. Here,  $t(185) = -1.872$ ,  $p = 0.037$  (1-tailed),  $r = -0.136$  ( $M_{\text{individuals}} = 1.82$ ,  $sd = 0.407$ ,  $n = 141$ ;  $M_{\text{groups}} = 1.93$ ,  $sd = 0.25$ ,  $n = 46$ ).

81.  $t(45) = -2.623$ ,  $p = 0.006$  (1-tailed),  $r = 0.364$  ( $M_{\text{Buy}} = 3.92$ ,  $sd = 0.504$ ,  $n = 24$ ;  $M_{\text{Sell}} = 4.39$ ,  $sd = 0.722$ ,  $n = 23$ ).

## DISCUSSION

Consistent with the little research that exists, the present data show that group discussion exacerbates the EE in individuals' judgments. Given the many instances in which individuals exhibit the EE, given the fact that it occurs not just for assets but for intangibles such as rights, and given the many situations in which people may engage in discussion or deliberation about the target of the judgment, these findings may be cause for concern.

This concern may arise in two broad but related categories: decisionmaking by groups (intragroup decisionmaking, e.g., by boards of directors)<sup>82</sup> and negotiation between groups (intergroup decisionmaking, e.g., by attorney, political, or business teams).<sup>83</sup> Both might occur at quite different levels. Intragroup discussion might be at the business level, or at the community or national level, as when particular interest groups come together to decide preferences or policies. Intergroup discussion and negotiation may also occur in the boardroom, but also in the attorney's office or over the international bargaining table. Moreover, in both categories, there may even be a cumulative effect of group discussion. For instance, intragroup discussion may polarize existing individual tendencies to exhibit the endowment effect; intergroup negotiation may further exacerbate the decisions or preferences that each group then brings to the bargaining table. Indeed, each of the practical examples provided earlier<sup>84</sup> might be affected detrimentally if individual biases are polarized and exacerbated by group discussion, with implications for market behavior or dispute settlement and resolution at a variety of levels.

*Debiasing*

This is a somewhat pessimistic view, to say the least. What then might be done to help? A number of suggestions have been made as to how to correct the EE, but these have focused on individuals, and it is not clear whether they would work at the group level—further empirical research will be useful.

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82. Cf. Pitney, *supra* note 37, at 28 (examining studies on prospect theory and loss aversion in groups of business decisionmakers and suggesting they may help explain whether these groups might also exhibit an endowment effect).

83. See, e.g., Galin et al., *supra* note 58, at 11–12 (finding group negotiations intensify the EE bias); *supra* note 19 and accompanying text.

84. See *supra* notes 37–56 and accompanying text.

First, in individuals, some attenuation of the EE has been achieved through de-emphasizing owners' anticipated negative feelings.<sup>85</sup> Specifically, the buy/sell disparity was reduced when individuals were in a good mood, when the transaction was framed as an *inactive* rather than *active* decision, or when their anticipated regret was reduced by emphasizing the potential downsides of failures to act.<sup>86</sup> Two caveats attach, however. First, contrary research has demonstrated that subjects in a good mood *do* exhibit the EE, but a negative mood attenuates the effect.<sup>87</sup> Second, whichever is accurate,<sup>88</sup> whether such a remedy would work at the group level is unclear. Recall Forgas's findings regarding the effect of group deliberation on emotional biases: group deliberation under positive affect tended to polarize individuals' initial judgments.<sup>89</sup> Although his study involved social judgments, rather than buy/sell decisions, it provides a different perspective on the effect of positive mood at the group level.<sup>90</sup>

Second, some have argued that learning and experience can help mitigate the EE. There is mixed evidence on this point, however; some studies show a reduction in the EE after multiple iterative buy/sell decisions, and others do not.<sup>91</sup> Again, it is not clear what effect the group context would have here. Learning or market experience may be helpful in the context of boards of directors. However, generally, learning effects are shown in auction-type experiments, and this is rarely analogous to the sort of group deliberation or negotiation under discussion here.<sup>92</sup> Moreover, it may be that any learning in regards to particular business assets, for instance, would not transfer to judgments and decisions about other assets.<sup>93</sup> Most important, though, the opportunity to receive feedback and learn is simply not available

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85. Zhang & Fishbach, *supra* note 15, at 322.

86. *Id.*

87. Chien-Huang Lin et al., *The Role of Emotions in the Endowment Effect*, 27 J. ECON. PSYCHOL. 589, 595 (2006).

88. Of course, aspects of both might be correct, as refined research might show.

89. See Forgas, *supra* note 22, at 449.

90. See *id.* at 442–44.

91. Compare Don L. Coursey, John L. Hovis & William D. Schulze, *The Disparity Between Willingness to Accept and Willingness to Pay Measures of Value*, 102 Q.J. ECON. 679, 687–89 (1987) (determining that the disparity between the willingness to accept (WTA) and willingness to pay (WTP) converged after iterative bidding in a sealed auction), with Kahneman, Knetsch & Thaler, *supra* note 1, at 1335 (concluding that the gap between the willingness to accept and the willingness to pay was stable over a series of trials in which outcomes were binding and had monetary payoffs for participants).

92. Pitney, *supra* note 37, at 15, 34–35.

93. *Id.* at 34–35.

in a number of the instances in which the EE may be at issue; many are simply one-shot deals. For instance, many plaintiffs are not repeat players, and may not learn from their one litigation experience;<sup>94</sup> residents in an underprivileged neighborhood or community will likely only have one opportunity to decide how to react to a company's efforts to place a polluting factory there.

Third, there is some indication that informing subjects about loss aversion generally may help attenuate effects due to that phenomenon.<sup>95</sup> This has not been investigated in the specific EE context, however, nor in the group context. Moreover, substantial research demonstrates the danger of *overcorrection* when someone is informed of a particular bias, especially one based on affective influences.<sup>96</sup> That is, when someone realizes that an incidental emotion might bias her decision, she may try to correct for it. However, because she may not always accurately assess the intensity and duration of her emotions,<sup>97</sup> and because she may not accurately assess the degree of her emotional biases,<sup>98</sup> she may overcorrect for the bias, leading to biased judgments in the opposite direction.<sup>99</sup> If group polarization then occurs—i.e., if group discussion exacerbates individual effects—then the effect of overcorrection might be even stronger.

### *Future Research*

All of these possible efforts to mitigate the EE warrant further testing at the group level, and these possibilities constitute one line of further empirical research. A second line, however, might usefully extend aspects of the present study. For instance, the decision here simply involved preferences to buy or

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94. See Richard W. Painter, *Litigating on a Contingency: A Monopoly of Champions or a Market for Champerty?*, 71 CHI.-KENT L. REV. 625, 686 (1995).

95. Cf. Johnson, Gächter & Herrmann, *supra* note 15, at 19–24 (examining the effects of attribute knowledge on loss aversion).

96. See Blumenthal, *supra* note 1, at 52–54; Ehud Guttel, *Overcorrection*, 93 GEO. L.J. 241, 273 (2004) (noting that the legal system sometimes must correct for overcorrection); C. Neil Macrae et al., *Out of Mind but Back in Sight: Stereotypes on the Rebound*, 67 J. PERSONALITY & SOC. PSYCHOL. 808, 809–11 (1994).

97. Linda M. Isbell & Robert S. Wyer, Jr., *Correcting for Mood-Induced Bias in the Evaluation of Political Candidates: The Roles of Intrinsic and Extrinsic Motivation*, 25 PERSONALITY & SOC. PSYCHOL. BULL. 237, 237–38 (1999); see Jeremy A. Blumenthal, *Law and the Emotions: The Problems of Affective Forecasting*, 80 IND. L.J. 155, 167–72 (2005) (providing examples of studies in which participants inaccurately predicted their own emotional responses).

98. See Van Boven, Dunning, Loewenstein, *supra* note 10, at 73.

99. Leonard Berkowitz et al., *On the Correction of Feeling-Induced Judgmental Biases*, in FEELING AND THINKING: THE ROLE OF AFFECT IN SOCIAL COGNITION 131, 134 (Joseph P. Forgas ed., 2000); Isbell & Wyer, *supra* note 97, at 237–38.

sell, without determination of a price. Follow-up studies might include a price-setting task as well; this would allow for scenarios perhaps more analogous to certain business settings, and, not unhelpfully, a more continuous scale for statistical analysis. It is also unclear—as is the case in many group-dynamics contexts—what effect group size might have. Here the groups consisted of three or four members; of course, many groups making legally or politically relevant decisions, and most boards of directors, have more. This size group, however, would certainly be relevant to the decisionmaking of many attorney team groups, neighborhood zoning boards, or other small groups.

Another issue future research might address involves the decision rule to be used by the group decisionmakers, i.e., unanimity, majority, or some other rule. Here, no instructions were given as to the decision rule; obviously, though, different groups make use of different rules and some use different rules for different decisions (consider the U.S. Senate voting on a bill (simple majority) versus voting to end a filibuster (three-fifths support)). In the jury decisionmaking context, decision rule can affect group processes, though not necessarily the ultimate verdict; analogous research in the endowment effect context would be fruitful as well. Finally, this pilot study involved university students; further research might extend the methodology to attorneys, businesspeople (e.g., at a university's executive MBA program), or other community members.

In brief, this first step in examining the EE in the group context identifies a number of relevant practical applications, and helps lay the groundwork for substantial further empirical research. More important, it takes a robust empirical finding with economic and psychological implications at the individual level, and extends it, at the level of the group, into settings with important legal implications.

#### APPENDIX

##### *“Del-Mott” scenario (“Sell” condition)*<sup>100</sup>

Imagine that you graduated many years ago. After school, you organized a start-up biotechnology company. You provided the business and finance background for the company with four other partners who have advanced degrees in various sciences.

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100. All four scenarios presented in this appendix are taken from Rachlinski & Jourden, *supra* 11, at 1561–66, 1577–81. The “Sell” condition scenarios are reprinted verbatim and the “Buy” conditions are the mirror images of the “Sell” condition scenarios. *Id.*

Your firm has worked on a number of projects, some of which generated viable products, although your firm has not had any resounding financial success. This has occasionally led to some lean and difficult financial times for your young company, but you have always managed to find financing to tide you over any rough periods.

One year ago, you made a momentous decision for your company. After careful study, you proposed to abandon the company's focus on therapeutic drugs and to begin working on new, organic pesticides. You persuaded your partners that without this adjustment, competition from existing pharmaceutical companies would eventually make your venture unprofitable. Although your proposal sparked heated disagreement among your partners, you ultimately won them over.

Shortly thereafter, your new strategy paid off in a number of small successes and one product with vast potential. Using the sap from a rare Hawaiian plant, the Iwihi Bush, one of your partners extracted an enzyme that, when sprayed on wheat, makes it virtually immune to a common, destructive fungus. Currently, chemical pesticides are available that perform the same function, but all of these are known carcinogens. Such pesticides have increasingly been found in ground water throughout the Midwest and may be the cause of numerous health problems in farm workers. Your new substance (which you call Iwihi-101) has no such side effects. This new product has enormous potential, and could replace pesticides that now have \$20 million in annual sales, collectively.

There are some problems with your efforts to go forward with Iwihi-101, however. The Iwihi Bush is an endangered species found only in a small valley on the island of Hawaii, on land owned entirely the Del-Mott Fruit Company. Del-Mott allowed your partners onto its land to bio-prospect for valuable plants, and allowed them to remove several specimens, which now grow in your company's greenhouse. Since the discovery of Iwihi-101, however, Del-Mott has restricted access to its property. You have learned that Del-Mott is owned by a much larger chemical company, which produces one of the pesticides with which Iwihi-101 would compete. Del-Mott subsequently destroyed all of the Iwihi Bushes on its property, apparently in an attempt to keep your company from developing its new pesticide. Fortunately, your partners are certain that the plants can be grown in greenhouses to provide an adequate supply for commercial sale of Iwihi-101.

Del-Mott initially demanded the return of all Iwihi Bushes in your possession. Fortunately, your attorneys inform you that you need not do so. When it allowed your partners to remove the bushes, Del-Mott effectively relinquished its right to those plants and they now belong to your company. Indeed, Del-Mott's subsequent behavior suggests that they agree with your attorneys. They have offered to buy all of the plants in your possession. Under the terms offered by Del-Mott, you would assure them that you have provided all samples, seeds, and cuttings from the Iwihi plants. Should you then fail to turn them all over, Del-Mott could later get a court order requiring you to return them, and then a failure to do so would result in a criminal contempt sanction.

If you sell the plants to Del-Mott, you would not be able to market Iwihi-101 and you believe that Del-Mott will destroy the plants, leaving the species extinct. They have, however, offered a substantial sum for the return of the plants. They have offered enough money that your company would be able to engage in substantial research and marketing efforts for its other products. You would also be able to eliminate your firm's entire debt load and have enough assets left over that you would be able to issue a public offering of stock, which has been your primary goal since you started the company. Such an offering would put your company on a firm financial footing for an indefinite period.

*"Del-Mott" scenario ("Buy" condition)*

Imagine that you graduated many years ago. After school, you organized a start-up biotechnology company. You provided the business and finance background for the company with four other partners who have advanced degrees in various sciences. Your firm has worked on a number of projects, some of which generated viable products, although your firm has not had any resounding financial success. This has occasionally led to some lean and difficult financial times for your young company, but you have always managed to find financing to tide you over any rough periods.

One year ago, you made a momentous decision for your company. After careful study, you proposed to abandon the company's focus on therapeutic drugs and to begin working on new, organic pesticides. You persuaded your partners that without this adjustment, competition from existing pharmaceutical companies would eventually make your venture unprofitable. Although your proposal sparked heated

disagreement among your partners, you ultimately won them over.

Shortly thereafter, your new strategy paid off in a number of small successes. Along with some careful management you have been able to eliminate your firm's entire debt load. You now have enough assets that you may soon be able to issue a public offering of stock, which has been your primary goal since you started the company. Such an offering would put your company on a firm financial footing for an indefinite period.

Your company's new focus has also resulted in one product with vast potential. Using the sap from a rare Hawaiian plant, the Iwihi Bush, one of your partners extracted an enzyme that, when sprayed on wheat, makes it virtually immune to a common, destructive fungus. Currently, chemical pesticides are available that perform the same function, but all of these are known carcinogens. Such pesticides have increasingly been found in groundwater throughout the Midwest and may be the cause of numerous health problems in farm workers. Your new substance (which you call Iwihi-101) has no such side effects. This new product has enormous potential, and could replace pesticides that now have \$20 million in annual sales, collectively.

There are some problems with your efforts to go forward with Iwihi-101, however. The Iwihi Bush is an endangered species found only in a small valley on the island of Hawaii, on land owned entirely the Del-Mott Fruit Company. Del-Mott allowed your partners onto its land to bio-prospect for valuable plants, and allowed them to remove several specimens, which were stored in your company's greenhouse. Your botanists have been unable to get the plant to reproduce in your greenhouse and in fact, the plants that were originally removed are dead or nearly so. Since the discovery of Iwihi-101, Del-Mott has restricted access to its property. You have learned that Del-Mott is owned by a much larger chemical company, which produces one of the pesticides with which your Iwihi-101 would compete.

Del-Mott has refused your further requests for access to the plants. Unfortunately, your attorneys inform you that there is no legal way you can obtain access to these plants. Even if you did get some of the plants off of their property, Del-Mott could obtain a court order requiring you to return them and then a failure to do so would result in a criminal contempt sanction.

Del-Mott has offered to sell you the property containing the plants for a sizeable sum. Your firm has been doing well, and you would be able to raise the money. However, it would mean undertaking a significant debt load and cutting back on research

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*GROUP DELIBERATION*

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and marketing for your other projects. It would also mean that you would not be able to issue a public offering of stock for the time being. In short, you would sacrifice all of your recent gains to obtain the plants. Del-Mott informs you that if you do not buy the property, they intend to clear the land and destroy the plants. This would mean the end of your Iwihi-101 project and the extinction of the species.

*“Henry’s Pond” scenario (“Sell” condition)*

Imagine that you have graduated and moved on to become a successful business person. Due to your success and ability, you have been asked to serve on the board of directors for a non-profit environmental organization, The Nature Land Trust. This organization identifies environmentally sensitive lands that are at risk of development and purchases them from the landowner. The organization’s many volunteers then maintain the property in a natural state. With your advice and assistance, your group has raised hundred [sic] of thousands of dollars and now preserves thousands of acres of environmentally sensitive properties throughout North America.

Recently, your organization purchased “Henry’s Pond” in a rural part of Southern Wisconsin. The area consists of 50 acres of swampy, undeveloped land with a large pond in it. The Pond is frequented by rare species of migrating ducks and geese many of which use it as a nesting ground. Additionally, many geese stop at the pond for several days during their annual migration. Your group spent years raising the money to purchase Henry’s Pond, and considers it one of their most sensible acquisitions.

A problem has arisen with Henry’s Pond. A helicopter company, Midwest Transport, Inc., has recently purchased and developed property adjoining Henry’s Pond. Midwest runs charter helicopter flights from downtown Chicago to various cities throughout Wisconsin. The Company has constructed a number of helicopter pads and hangars, and now uses the site as its main heliport. Its principal helicopter pad is just off of the northern end of the Trust’s Property, and is within 150 yards of the northern banks of Henry’s Pond.

Helicopters and birds do not mix well. The noise from the nearby helicopters has driven many of the birds away from the pond. Furthermore, those that remain have refrained from nesting, and are unlikely to reproduce. Many birds have also gotten caught in helicopter blades, killing them and damaging helicopters. Although it is unlikely that bird-helicopter encounters would result in a disastrous helicopter crash, the

heliport has essentially destroyed the ecological value of Henry's Pond.

Midwest and the Trust have exchanged letters on the matter, which have taken an increasingly angry tone. The Trust is unhappy about Midwest's impact on its sanctuary and Midwest is unhappy about the number of birds that the Trust's activities continue to attract in spite of the noise. The Trust's Board of Directors has asked its attorneys to review the situation and assess its options.

Fortunately, the attorneys agree that Midwest's activities constitute a nuisance under Wisconsin law. Property law in the State of Wisconsin protects "ecological" uses of land and is well-suited to protecting private wildlife sanctuaries. Midwest may not legally continue to operate its heliport. If Midwest continues to disturb the Pond, the Trust could sue to obtain a court order against Midwest to refrain from such interference. Midwest would almost certainly obey such an order, since the penalty for violating it would be a severe criminal contempt of court sanction.

Midwest has apparently made a similar conclusion. Hoping to improve its image as a friend of the environment, however, Midwest has offered to pay the Trust for the right to continue to operate its heliport at a reasonable price and on favorable terms. If Midwest pays the Trust, Midwest could legally continue operating its heliport. If members of the Trust then took any steps to interfere with Midwest's activities, it would be able to sue to obtain a court order against the Trust to refrain from such interference. Members of the Trust would almost certainly obey such an order, since the penalty for violating it would be a severe criminal contempt of court sanction.

The Trust obviously has limited funds. Money from the sale of this right to Midwest would increase the budget for other projects. In particular, if Midwest pays the Trust, it will have enough money to purchase an island off the coast of Eastern Canada that is a breeding area for the rare harp seal. The island ("Seal Island") is currently owned by the Canadian government, which has begun allowing fishermen to place lobster traps just off its shores. The fishermen mean no harm, but now disturb what would otherwise be a prime breeding ground for the seals. Purchase of Seal Island would allow the Trust to keep the fishermen at a comfortable distance. Furthermore, if fishermen are not kept away from the island this spring, the seals will probably stop using the island indefinitely. Thus, it is critical that the Trust purchase the island as soon as possible.

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*GROUP DELIBERATION*

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Ecologists in the group are divided over which project would be more valuable. Both the migrating birds of Henry's Pond and the harp seals are rare and verge on being endangered. Some also argue that it makes sense to sacrifice Henry's Pond for other projects. Others contend that the job of protecting Henry's Pond is complete, and the Trust should not sacrifice what it has already gained. The Board has been asked to make a recommendation as to what actions the Trust should take.

*"Henry's Pond" scenario ("Buy" condition)*

Imagine that you have graduated and moved on to become a successful business person. Due to your success and ability, you have been asked to serve on the board of directors for a non-profit environmental organization, The Nature Land Trust. This organization identifies environmentally sensitive lands that are at risk of development and purchases them from the landowner. The organization's many volunteers then maintain the property in a natural state. With your advice and assistance, your group has raised hundred [sic] of thousands of dollars and now preserves thousands of acres of environmentally sensitive properties throughout North America.

Recently, your organization purchased "Henry's Pond" in a rural part of Southern Wisconsin. The area consists of 50 acres of swampy, undeveloped land with a large pond in it. The Pond is frequented by rare species of migrating ducks and geese many of which use it as a nesting ground. Additionally, many geese stop at the pond for several days during their annual migration. Your group spent years raising the money to purchase Henry's Pond, and considers it one of their most sensible acquisitions.

A problem has arisen with Henry's Pond. A helicopter company, Midwest Transport, Inc., has recently purchased and developed property adjoining Henry's Pond. Midwest runs charter helicopter flights from downtown Chicago to various cities throughout Wisconsin. The Company has constructed a number of helicopter pads and hangars, and now uses the site as its main heliport. Its principal helicopter pad is just off of the northern end of the Trust's Property, and is within 150 yards of the northern banks of Henry's Pond.

Helicopters and birds do not mix well. The noise from the nearby helicopters has driven many of the birds away from the pond. Furthermore, those that remain have refrained from nesting, and are unlikely to reproduce. Many birds have also gotten caught in helicopter blades, killing them and damaging helicopters. Although it is unlikely that bird-helicopter

encounters would result in a disastrous helicopter crash, the heliport has essentially destroyed the ecological value of Henry's Pond.

Midwest and the Trust have exchanged letters on the matter, which have taken an increasingly angry tone. The Trust is unhappy about Midwest's impact on its sanctuary and Midwest is unhappy about the number of birds that the Trust's activities continue to attract in spite of the noise. The Trust's Board of Directors has asked its attorneys to review the situation and assess its options.

Unfortunately, the attorneys agree that Midwest is well within its rights to operate a heliport on its property. Property law in the State of Wisconsin protects "economically productive" uses of land and is ill-suited to protecting private wildlife sanctuaries. Midwest may legally continue operating its heliport. If members of the Trust take any steps to interfere with Midwest's activities, it may sue to obtain a court order against the Trust to refrain from such interference. Members of the Trust would almost certainly obey such an order, since the penalty for violating it would be a severe criminal contempt of court sanction.

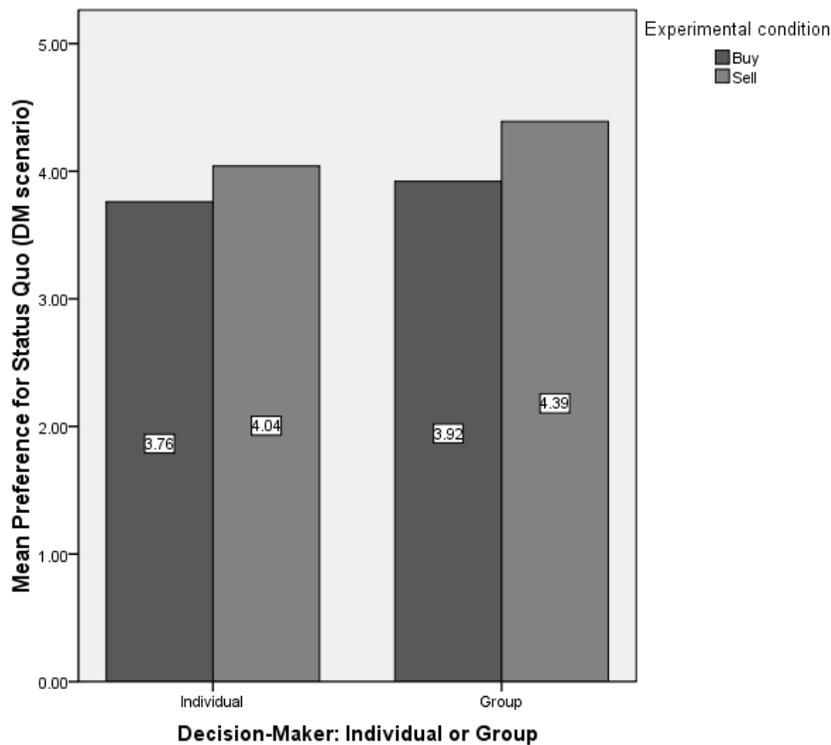
Midwest has apparently made a similar conclusion. Hoping to improve its image as a friend of the environment, however, Midwest has offered to enter into a "conservation agreement" with the Trust at a reasonable price and on favorable terms. If the Trust pays Midwest's costs, Midwest will agree to move its helicopter operation to a safe distance for both the helicopters and the birds and agree to refrain from disturbing the birds at the Pond. The Trust's ecologists agree that the proposal would restore the ecological value of the Pond. Thereafter, Midwest could not legally continue operating its heliport near the Pond. If Midwest continued to disturb the Pond, the Trust could sue to obtain a court order against Midwest to refrain from such interference. Midwest would almost certainly obey such an order, since the penalty for violating it would be a severe criminal contempt of court sanction.

The Trust obviously has limited funds. Money paid to Midwest would have to come out of the budget for other projects. In particular, the Trust has raised almost enough money to purchase an island off the coast of Eastern Canada that is a breeding area for the rare harp seal. The island ("Seal Island") is currently owned by the Canadian government, which has begun allowing fishermen to place lobster traps just off its shores. The fishermen mean no harm, but now disturb what would otherwise be a prime breeding ground for the seals. Purchase of Seal Island

would allow the Trust to keep the fishermen at a comfortable distance. Furthermore, if fishermen are not kept away from the island this spring, the seals will probably stop using the island indefinitely. Thus, it is critical that the Trust purchase the island as soon as possible.

Ecologists in the group are divided over which project would be more valuable. Both the migrating birds of Henry’s Pond and the harp seals are rare and verge on being endangered. Some also argue that other projects should not be sacrificed for Henry’s Pond. Others contend that the money should be spent to finish the job and other projects should be sacrificed to complete the protection for the Pond. The Board has been asked to make a recommendation as to what actions the Trust should take.

**Figure 1. Preference for Status Quo by Decisionmaker (Individual or Group)**



**Figure 2. Preference for Status Quo by Pre- and Post-Deliberation (Individuals)**

