Journal of Experimental Social Psychology 61 (2015) 131–138

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

When self-perceptions of expertise increase closed-minded cognition: The earned dogmatism effect☆

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HIGHLIGHTS

- The Earned Dogmatism Hypothesis is supported in six experiments.
- Social norms entitle experts to be more closed-minded or dogmatic.
- Self-perception of high expertise increases closed-mindedness.

ARTICLE INFO

Article history:
Received 13 January 2015
Revised 30 July 2015
Accepted 25 August 2015
Available online 28 August 2015

Keywords:
Attitudes
Social cognition
Political cognition
Open-mindedness
Open-minded cognition
Cognitive style

ABSTRACT

Although cultural values generally prescribe open-mindedness, open-minded cognition systematically varies across individuals and situations. According to the *Earned Dogmatism Hypothesis*, social norms dictate that experts are entitled to adopt a relatively dogmatic, closed-minded orientation. As a consequence, situations that engender self-perceptions of high expertise elicit a more closed-minded cognitive style. These predictions are confirmed in six experiments.

Social psychology research often emphasizes directional bias in cognition. This includes attitude research that indicates cognition can be biased in the direction of prior attitudes (Eagly, Chen, Chaiken, & Shaw-Barnes, 1999; Fazio & Towles-Schwen, 1999; Petty & Cacioppo, 1986; Petty & Wegener, 1991); social cognition research that documents biases when perceivers select, encode, interpret, and retrieve information (e.g., Bodenhausen, 1988; Wyer & Srull, 1989); as well as research that focuses on motivated cognition (e.g., Jost, Glaser, Kruglanski, & Sulloway, 2003). In the present paper, *open-minded cognition* is defined as directionally unbiased information processing; a tendency to select, interpret, retrieve, weigh, and elaborate upon information in a manner that is *not* biased by the individual's prior opinion or expectation (Ottati, Wilson, & Price, 2015; Price, Ottati, Wilson, & Kim, 2015). *Closed-minded or dogmatic cognition* is defined as directionally biased; a tendency to process information in a manner that reinforces the individual's prior opinion or expectation (Ottati et al., 2015; Price et al., 2015; see also Nickerson, 1998; Samuelson & Church, 2014a; Samuelson & Church, 2014b; Stanovich & West, 2007).

Although cultural norms place a positive value on open-mindedness, open-minded cognition varies across individuals and situations (Ottati et al., 2015). For example, closed-mindedness is associated with a predisposition to experience psychological insecurity (Rokeach & Kemp, 1960; Tosi, Fagan, & Frumkin, 1968; see also Vail, Arndt, Motyl, & Pyszczynski, 2012), and increases when individuals encounter morally objectionable viewpoints (e.g., communications advocating discrimination; Ottati et al., 2015). In examining the determinants of open-minded cognition, the present paper focuses on self-perceptions of expertise. "Expert" designates someone who is relatively knowledgeable within a domain. "Novice" designates someone who possesses a limited amount of knowledge (Delli Carpini & Keeter, 1992).

Individuals induced to believe they are experts tend to overestimate the accuracy of their beliefs (Arkes, Christensen, Lai, Blumer, 1987; Trafimow & Sniezek, 1994). The *Earned Dogmatism Hypothesis*

☆ This research was made possible through the support of a grant from the Fuller Theological Seminary/Thrive Center in concert with the John Templeton Foundation (IH-111). Opinions are those of the authors and do not necessarily reflect the views of the Fuller Thrive Center or the John Templeton Foundation.

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http://dx.doi.org/10.1016/j.jesp.2015.08.003
0022-1031/

proposes that this finding arises, in part, because social norms entitle experts to adopt a more dogmatic cognitive orientation. Because experts have already given extensive thought to issues within a domain, they have "earned" the privilege of harboring more dogmatic opinions and beliefs. In contrast, social norms discourage individuals from being dogmatic when they possess a limited amount of knowledge. Expression of dogmatic convictions can be viewed as warranted, justified, or appropriate when the communicator possesses high expertise. This is less likely to be true when the communicator knows little about a topic. Social norms dictate that novices should adopt a more open-minded orientation.

1. Earned dogmatism and the flexible merit standard model

The *Earned Dogmatism Hypothesis* is derived on the basis of the Flexible Merit Standard Model (Ottati et al., 2015). The Flexible Merit Standard Model presumes that, when thinking about an issue, individuals initially activate and select an appropriate "merit standard." That is, individuals consider the degree to which a dogmatic versus open-minded reaction is appropriate and merited. A cognitive orientation may be viewed as appropriate in one situation, but inappropriate in another situation (Ottati et al., 2015; see also Leary & Hoyle, 2015; Schwarz, 2011 for situational determinants of cognitive style). Some situations activate an open-minded norm (e.g., a lecture concerning "new math"), and thereby elicit open-minded cognitive processing (Ottati et al., 2015). Other situations activate a more dogmatic normative standard (e.g., communications advocating racism), and thereby elicit a more closed-minded response (e.g., "I refuse to consider this option," Ottati et al., 2015). Individuals typically adopt a cognitive style that is congruent with the activated normative standard (Ottati et al., 2015).

The *Earned Dogmatism Hypothesis* extends this logic. In accordance with role theory, it is presumed that social norms differ for individuals who occupy distinct roles within a situation (Katz & Kahn, 1978; Sarbin & Allen, 1968; Triandis, 1972, 1980; Triandis, Marin, Hui, Lisansky, & Ottati, 1984). Consider, for example, a seminar pertaining to cancer. Within this situation, some individuals may occupy the role of "novice" (e.g., a layperson) whereas others may occupy the role of "expert" (e.g., a cancer researcher). Because novices possess limited knowledge, social norms dictate that they should listen and learn in an open-minded fashion. The expert possess extensive knowledge, and therefore is entitled to adopt a more dogmatic or forceful orientation (see Triandis et al., 1984 for related effects of status). Dogmatic statements are more likely to be tolerated when the "expert" speaks than when a "novice" speaks. Novices possess limited knowledge, and as such, are expected to adopt a more humble and open-minded orientation (see Kruglanski & Mayseless, 1987; Kruse, Chancellor, Lyubomirsky, 2014a; Kruse, Chancellor, Ruberton, Lyubomirsky, 2014; Leary & Hoyle, 2015 for linkages between awareness of personal limitation, reduced entitlement, humility, and open-mindedness).

The *Earned Dogmatism Hypothesis* proposes that this logic applies when individuals perceive *themselves* to be an "expert." That is, individuals who perceive themselves to be relatively low in expertise should adopt an open-minded cognitive orientation whereas individuals who perceive themselves to be an expert should adopt a more closed-minded orientation (see Fernbach, Rogers, Fox, & Sloman, 2013; Kruglanski & Mayseless, 1987; Leary & Hoyle, 2015 for related conceptualizations). This hypothesis can be tested by providing individuals with success versus failure feedback. Failure feedback heightens awareness of knowledge limitations, and thereby engenders self-perceptions of low expertise. This should activate norms that prescribe an open-minded cognitive style, which the individual follows. Success feedback reduces awareness of knowledge limitations and engenders self-perceptions of high expertise. This should activate norms that entitle the individual to adopt a more dogmatic orientation.

2. Alternative hypotheses

Success may elicit a variety of feelings (power, security, anxiety, self-esteem) and cognitive states (attitude certainty, attitude extremity). Research suggests that, in many cases, these states elicit an effect that is *opposite* of the Earned Dogmatism Effect. Specifically, research indicates success elicits positive states (high self-esteem, self-assurance, happiness) whereas failure elicits negative states (e.g., irritability, sadness, anxiety; Heatherton & Polivy, 1991; Nummenmaa & Niemi, 2004). Moreover, positive states (e.g., self-efficacy, security, gratitude) increase open-mindedness (Bandura, 1977; Jarvinen, 2015; Kruse, Chancellor, Lyubomirsky, 2014b; Kruse, Chancellor, Ruberton, Lyubomirsky, 2014; Mikulincer & Shaver, 2001) whereas negative states and dispositions (insecurity, anxiety, mortality salience) increase dogmatism (Fillenbaum & Jackman, 1961; Goldsmith & Goldsmith, 1982; Larsen & Schwendiman, 1969; Ottati et al., 2015; Pestonjee & Singh, 1979; Rokeach & Kemp, 1960; Schulze, 1962; Slone, 2000; Vail et al., 2012). Thus, accounts that emphasize the mediational role of positive and negative feeling states often predict that success will increase open-mindedness. Because this is opposite to the Earned Dogmatism Effect, these accounts often fail to provide an alternative interpretation for the Earned Dogmatism effect.

Nevertheless, it is useful to demonstrate that the Earned Dogmatism Effect emerges when controlling for alternative states of this nature. This eliminates other possible alternative interpretations. For example, failure might elicit feelings of insecurity that promote adherence to strongly held values, one of which is open-mindedness. Alternatively, success might elicit a feeling of power that increases certainty regarding previously established opinions, and thereby decreases openness to alternative viewpoints (see Anderson & Galinsky, 2006; Anderson, John, & Keltner, 2012; Galinsky, Gruenfeld, & Magee, 2003; Guinote, 2007 for relevant research). Some of these "alternative" interpretations may actually be compatible with the Earned Dogmatism Hypothesis.[1] Nevertheless, if one can demonstrate that self-perceived expertise ("I am knowledgeable") increases dogmatism even when controlling for effects of this nature (mood, power, security, attitude strength), alternative interpretations would be discounted and the Earned Dogmatism Hypothesis would be strongly supported. This is accomplished in the final experiment (Experiment 6).

3. Experiment 1

According to the Earned Dogmatism Hypothesis, social norms dictate that closed-mindedness is more warranted or justifiable when exhibited by an "expert" than a "novice." Experiment 1 presented participants with a description of "Jason." Jason's previously acquired political knowledge was described as extremely extensive (expert) or extremely limited (novice). In both conditions, Jason's *present* political thinking was described as closed-minded and dogmatic. It was predicted that Jason's present dogmatic orientation would elicit more favorable normative ratings in the "expert" condition (see Na, Choi, & Sul, 2013 for an analogous method).

3.1. Participants

Thirty-four MTurk participants were recruited. Average age was 36.24, 61.8% were female, 23.5% were non-white, 55.6% were Democratic, and 39% were Republican.

[1] For example, self-perception of expertise ("I am knowledgeable") may possess an affective component ("I feel powerful"). These cognitive and affective components of expertise might cause individuals to feel normatively entitled to formulate strong opinions that are defended in a dogmatic fashion. Consistent with the Earned Dogmatism Hypothesis, this interpretation presumes that the effect of expertise on open-minded cognition is mediated by normative entitlement.

3.2. Procedure

Participants were randomly assigned to an "expert" or "novice" condition describing a 40 year old person named "Jason." The first part of the description was titled "Past Experience Reading about Politics." In the "expert" condition, this section indicated Jason "is an expert in politics… has read the newspaper cover to cover… during the past 20 years… has carefully considered every political issue and debate… [and] his knowledge of politics is extensive." In the "novice" condition, this section indicated Jason "knows very little about politics… has only glanced at a newspaper a few times… during the past 20 years… has not carefully considered political issues… [and] his knowledge of political issues is extremely limited."

The second part of the description was entitled "Current Approach to Politics." For *all participants*, this second section indicated Jason's current approach to politics is closed-minded and dogmatic. Specifically, Jason "no longer has much patience for political opinions or arguments he disagrees with… believes it is a waste of time to pay attention to certain political ideas… is no longer open to considering many other viewpoints… often tunes out political messages he disagrees with... [and] does not wait to hear arguments on both sides of an issue." After reading both sections, participants rated their reaction to Jason's "current approach to politics" on scales ranging from "unwarranted" to "warranted," "not justifiable" to "justifiable," and "inappropriate" to "appropriate" (7-point scales coded 1 to 7).

3.3. Results and discussion

The three ratings were averaged to produce a Normative Approval score ($\alpha = .91$). Normative Approval of Jason's current dogmatic approach was higher in the "expert" condition ($M = 4.06$) than "novice" condition ($M = 2.83$, $t(31) = -2.39$, SE = .52, $p < .05$, $\eta^2 = .15$). As predicted, social norms prescribe that a dogmatic orientation is more warranted, justifiable, and appropriate when exhibited by an "expert" than a "novice" (see Fig. 1).

4. Experiment 2

The remaining experiments test the core prediction associated with the Earned Dogmatism Hypothesis, namely that self-perceived expertise engenders a more closed-minded style of thinking. Experiments 2–4 manipulated self-perceived expertise by having participants succeed (high self-perceived expertise) or fail (low self-perceived expertise) at a task. In Experiment 2, participants completed an easy or difficult *political* knowledge test, and were provided with false feedback that implied their performance was above average in the easy condition (success) or below average in the difficult condition (failure). The manipulation was "double-barreled." The "failure" condition was intended to elicit poor actual performance accompanied by failure feedback. The "success" condition was intended to elicit high performance accompanied by success feedback. Afterwards, participants completed a measure of *Political* open-minded cognition.

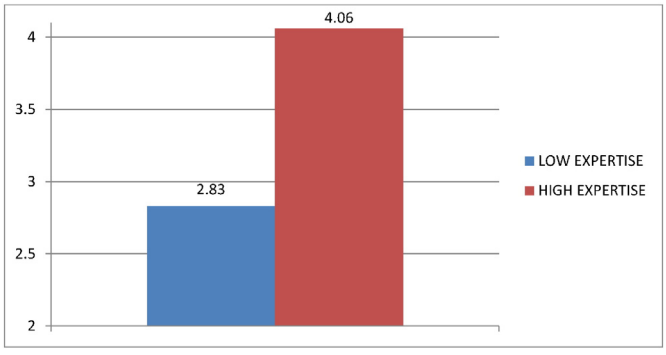

Fig. 1. Effect of Jason's Expertise on Normative Approval of Jason's Dogmatic Orientation (Hypothesis, $p < .05$).

4.1. Participants

Forty-eight MTurk participants were recruited. Average age was 34.12, 44.1% were female, 12.8% were non-white, 55.3% were Democratic, and 34.0% were Republican. Data analysis was performed twice, once including all participants ($N = 48$), and once excluding participants who performed too well on the difficult test (resultant $N = 34$).

4.2. Procedure

Participants were randomly assigned to the easy (success) or difficult (failure) political test condition. Fifteen multiple-choice questions covered political procedure, political figures, as well as government agencies and their functions. For example, one question in the easy condition asked, "Who is the current President of the United States?" An equivalent question in the difficult condition asked, "Who was Nixon's initial Vice-President?"

After completing the test, participants were provided with false feedback. Participants in the easy (success) condition were told they performed better than 86% of other test takers; participants in the difficult (failure) condition were told they performed *worse* than 86% of test takers. Then, participants completed the six-item Political Open-Minded Cognition scale (Ottati et al., 2015; Price et al., 2015; e.g., "I am open to considering other political viewpoints," "1 strongly disagree" to "7 strongly agree").[2] After reverse scoring the "closed" items, responses were averaged to produce a Political Open-Minded Cognition score ($\alpha = .86$). Participants then completed demographic items, and provided comments regarding the study.

4.3. Results and discussion

Participants answered more questions correctly in the success (easy) condition ($M = 14.56$) than failure (difficult) condition ($M = 8.70$; $t(46) = 9.264$, SE = .632, $p < .001$, $\eta^2 = .65$). However, contrary to expectation, actual test performance was quite high for some participants in the failure (difficult) condition. These participants often commented that they did not believe the false negative feedback. Thus, the "failure" condition did not effectively elicit feelings of failure for these participants. To address this problem, participants who answered 10 or more items correctly in the "failure" (difficult) condition were excluded when performing the "reduced sample" analysis ($N = 14$ removed). Because the difficult condition was initially oversampled, this still left the two conditions with nearly equal sample sizes ($N_{Easy} = 18$, $N_{Difficult} = 16$). For this "reduced sample," the *Earned Dogmatism Hypothesis* was supported (Fig. 2, left panel). Participants in the failure (difficult) condition expressed greater Political Open-minded cognition ($M = 4.71$) than participants in the success (easy) condition ($M = 4.27$), $t(32) = -2.082$, SE = .211, $p < .045$, $\eta^2 = .06$). In the "full sample" analysis, the failure ($M = 4.46$) and success condition ($M = 4.27$) did not significantly differ, $t(38) = -1.095$, SE = .206, $p = .28$, $\eta^2 = .03$).

The Earned Dogmatism Hypothesis was supported when excluding participants scoring high on the difficult test. Unfortunately, this procedure confounds "self-perceived expertise" with "actual expertise"

[2] Items were: "I am open to considering other [political] viewpoints"; "I often 'tune out' [political] messages I disagree with."; "I believe it is a waste of time to pay attention to certain [political] ideas."; "[When it comes to politics,] I try to reserve judgment until I have a chance to hear both sides of an issue."; "I have no patience for [political] arguments I disagree with"; "When thinking about a [political] issue, I consider as many different opinions as possible" (1 = "Strongly Disagree" to 7 = "Strongly Agree."). Study 4 *General* scale deleted bracketed text.

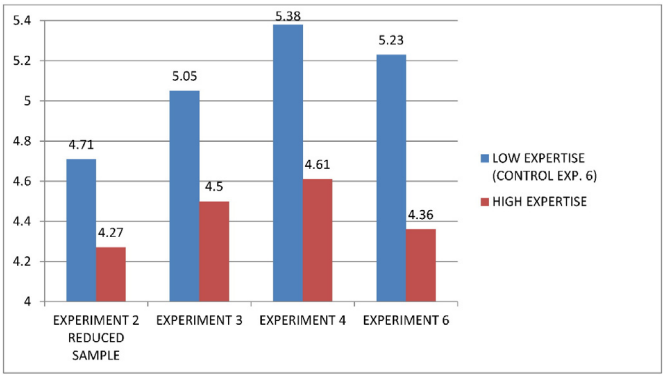

Fig. 2. Effect of Self-Perceived Expertise on Open-Minded Cognition ($p < .05$ in all cases).

(relatively high-scoring participants were excluded from the failure but not success condition). Effects of "actual expertise" are rooted in psychological mechanisms that differ from those presently investigated (Dunning, 2011; Fisher & Keil, 2015). Consequently, this experimental confound was deliberately eliminated in the remaining experiments.

5. Experiment 3

Experiment 3 employed a variant of Schwarz et al.'s (1991) "ease of retrieval" manipulation. Participants were asked to name either two (easy) or ten (difficult) policies implemented by President Obama. It was presumed that participants in the two-policy condition would infer from their relative ease of retrieval that they knew a respectable amount about politics, leading to high self-perceptions of political expertise. Participants in the ten-policy condition were expected to infer from the difficulty they had completing the task that they were uninformed about politics, leading to low self-perceptions of political expertise. Political Open-Minded Cognition was the dependent variable.

5.1. Participants

Fifty MTurk participants were recruited. Average age was 34.6, 46.2% were female, 23.4% were non-white, 57.3% were Democratic, and 21.3% were Republican.

5.2. Procedure

Participants were randomly assigned to the easy or difficult condition. In the easy condition, participants were instructed to describe one or two policies President Obama has supported or enacted. Participants were able to advance to the next screen as long as they described one policy. In the difficult condition, participants were asked to describe ten policies President Obama enacted or signed into law. If they could not name ten, they were instructed to write "I don't know" in any remaining text boxes. Then, participants completed the Political Open-Minded Cognition scale and demographic items.

5.3. Results

All participants in the easy condition named at least one policy, and 53.6% named two policies. In the difficult condition, participants named 4.15 policies on average. As predicted by the *Earned Dogmatism Hypothesis*, participants in the difficult condition reported greater Political Open-Minded Cognition ($M = 5.05$) than participants in the easy condition ($M = 4.496$), $t(76) = -2.098$, SE = .265, $p < .04$, $\eta^2 = .06$ (Fig. 2, left middle panel).

6. Experiment 4

Experiment 4 manipulated success versus failure by administering an easy or *extremely* difficult test. Participants were shown the correct answer after completing each item, and therefore knew they answered many correctly in the success condition or few correctly in the failure condition. The questions were in multiple domains (e.g., music, history). Performance on this *general* knowledge test was predicted to influence *General* Open-Minded Cognition. It was predicted that General Open-Minded Condition would be higher in the failure condition than success condition.

Experiment 4 also included a Post-Test that was designed to examine the plausibility of the previously described "alternative hypotheses" that emphasize the role of alternative mediating variables. Specifically, the Post-Test examined the extent to which the experimental manipulation significantly influenced state self-esteem, state power, attitude certainty, attitude extremity, as well as a variety of affective states (secure, insecure, threatened, nervous, anxious, angry, irritable, sad, depressed, happy, euphoric, relaxed).

6.1. Participants

Fifty MTurk participants were recruited. Average age was 33.62, 41.5% were female, 28.3% were non-white, 52% were Democratic, and 24% were Republican.

6.2. Procedure

Participants were randomly assigned to the easy or difficult condition. They completed fifteen multiple-choice questions on various topics (e.g., history, art, geography, science). "Difficult" test questions were drawn from the National Academic Quiz collegiate level (e.g. "What was the nationality of the composer Chopin?"). "Easy" questions were drawn from the middle school level (e.g., "The Statue of Liberty was gifted to the United States by which country?"). After answering each question, participants were shown the actual correct answer (performance feedback).

After the test, participants completed the General Open-Minded Cognition scale (Price et al., 2015). This scale is identical to the Political Open-Minded Scale, but with reference to politics deleted (e.g., "I am open to considering other viewpoints"). After reverse scoring the "closed" items, responses were averaged to produce a General Open-Minded Cognition score ($\alpha = .88$). Lastly, participants completed demographic items.

6.3. Results and discussion

Participants in the easy condition answered more items correctly ($M = 12.32$) than participants in the difficult condition ($M = 5.84$, $t(48) = 8.829$, SE = .773, $p < .001$, $\eta^2 = .62$). Performance in the difficult condition was much lower ($M = 5.84$ out of 15) than in Experiment 2 ($M = 8.70$ out of 15). All participants in the failure condition obtained low scores, eliminating the need to exclude participants. As predicted, participants in the difficult condition ($M = 5.376$) reported greater Open-Minded Cognition than participants in the easy condition ($M = 4.614$), $t(48) = -2.328$, SE = .327, $p < .03$, $\eta^2 = .10$ (Fig. 2, middle right panel).

6.4. Post-test — assessing alternative mediators

51 MTurk participants completed a post-test ($M_{age} = 36.24$, 45.1% female, 15.68% non-white, 52.94% democratic, 25.49% republican). Following the same experimental manipulation; participants completed randomly ordered measures of the previously described "alternative mediators." These included measures of state self-esteem (DeHart, Pelham, & Tennen, 2006), state power (Cuddy, Wilmuth, Yap, &

Carney, 2015), attitude certainty (Tormala & Petty, 2004), attitude extremity, and a variety of affective states (secure, insecure, threatened, nervous, anxious, angry, irritable, sad, depressed, happy, euphoric, relaxed).[3] Effects were non-significant for self-esteem ($p = .94$), power ($p = .38$), euphoria, anxiety ("anxious," "threatened," "nervous," $\alpha = .92$, $p = .21$), attitude certainty ($p = .144$), and attitude extremity ($p = .77$). However, failure increased insecurity, anger, irritability, and sadness ("sad," "depressed," $\alpha = .98$) ratings; whereas success increased secure, happy, and relaxed ratings ($p < .05$ in all cases). Many studies suggest that these states should produce effects that are *opposite* to the earned dogmatism effect. Nevertheless, to rule out alternative interpretations, we developed a new manipulation of self-perceived expertise that is less likely to influence the participant's feeling state.

7. Experiment 5

According to role theory, an individual (e.g., college senior) can occupy a "high expertise role" in some situations (e.g., providing academic advice to college freshman) and a "low expertise role" in other situations (e.g., obtaining academic advice from a faculty member). Thus, in everyday life, perceptions of relative expertise vary within the individual across situations. The final two experiments focus on this "within-individual" variation by examining participants' responses to three situational scenarios. In the "low expertise" scenario, the protagonist encounters a group of people who know a lot *more* about politics than the protagonist. In the "high expertise" scenario, the protagonist encounters a group of people who know a lot *less* about politics than the protagonist. In the "control scenario," the protagonist encounters a group of people who are simply described as "typical" in terms of political knowledge. Participants read each of these scenarios twice, first imagining that "John" is the protagonist and then imagining that they themselves ("You") are the protagonist.

In Experiment 5, participants rated the extent to which John *should* feel entitled to respond in a closed-minded fashion (Normative Entitlement). In Experiment 6, after providing this normative rating, participants rated the extent to which they themselves *would* be open-minded in the specific situation (Situation Specific Open Minded Cognition). Experiment 5 demonstrates that the three scenarios provide an effective manipulation of relative expertise, and confirms that the "high expertise" scenario elicits higher levels of Normative Entitlement than the "control" scenario. It also demonstrates that only three of the "alternative mediators" yield reliable, albeit weak differences when comparing these two conditions (irritability, sadness, power). Controlling for these three variables, Experiment 6 demonstrates that the "high expertise" and "control" scenario significantly differ when predicting Situation-Specific Open-Minded Cognition. Mediational analyses confirm that this effect is mediated by Normative Entitlement.

This experimental design possesses many advantages. First, in accordance with role theory, it enables one to document that social norms regarding open-mindedness differ *within* the individual when the individual occupies distinct social roles. Second, this within-subject design completely controls for the effect of individual difference variables, including individual differences in previously acquired knowledge (i.e., individual differences in expertise). Third, because participants do not experience success or failure, this method is less likely to influence the participants' affective state (e.g., feelings of security, anger, sadness); thereby reducing the likelihood that these affective states will mediate effects on Open-Minded Cognition. Finally, inclusion of a control condition enables one to distinguish two separate hypotheses. The *Earned Dogmatism Hypothesis* predicts that, relative to the control condition, the "high-expertise role" will increase Normative Entitlement to respond in a closed-minded manner and decrease open-minded cognition. The *Obligated Novice Hypothesis* predicts that, relative to the control condition, the "low-expertise role" will decrease Normative Entitlement to respond in a closed-minded manner and increase open-minded cognition.

7.1. Participants

31 MTurk participants completed Experiment 5. Three were excluded for missing data or failing attention-check items (final $N = 28$, $M_{age} = 34.11$, 46.4% female, 60.7% democratic, 14.3% republican).

7.2. Procedure

Participant Role (low-expertise, high-expertise, control) was manipulated within-participants (in a random order). Each of the three conditions was composed of a pair of scenarios, the first pertaining to "JOHN" and the second pertaining to "YOU." For the "*Low-Expertise Role*" condition, participants first read that "JOHN" attended a party where he "encounters a group of individuals who know a lot *more* about politics than John does." To strengthen this relative expertise manipulation and to assess its effectiveness, participants then indicated whether the situation involved people who "know a great deal about politics," "know very little about politics," or "are pretty typical in terms of their knowledge of politics" (manipulation check). Participants then completed three situation specific Normative Entitlement items, "In this situation, John should feel [obligated to seriously consider viewpoints he disagrees with] [entitled to reject certain ideas without seriously considering them] [it is acceptable to ignore certain ideas]" (0 = "disagree" to 10 = "agree"). Participants also completed randomly ordered measures of the "alternative states" assessed in the Post Test of Experiment 4 (potential confounds or alternative mediators). When responding to these measures, participants were instructed to indicate how they feel "right now." Next, participants were presented with an otherwise identical scenario that indicated they *personally* ("YOU") encountered the same group. In response to this second scenario, participants simply completed the manipulation check.

The "*High-Expertise Role*" condition was identical, except that it described a "group of individuals who know a lot *less* about politics than JOHN [YOU]." The "*Control Condition*" was identical, except that the group of individuals was "pretty typical in terms of their knowledge of politics."

7.3. Results and discussion

The manipulation was effective. 97% of the manipulation check responses were correct. The *Obligated Novice Hypothesis* was not supported. Average Normative Entitlement ($\alpha = .85$)[4] did not differ when comparing the "low-expertise" condition ($M = 3.51$) to the "control" condition ($M = 3.96$), $t(27) = -1.26$, $SE = .36$, $p = .22$, $\eta^2 = .009$. Moreover, compared to the control condition, the "low-expertise role" condition elicited lower levels of self-esteem ($p < .05$), attitude extremity ($p < .05$), relaxation ($p < .05$) and security ($p = .101$); and higher levels irritability ($p < .05$) and anxiety ($p < .10$). In contrast, the *Earned Dogmatism Hypothesis* was strongly supported. Average Normative Entitlement ratings were higher in "high-expertise role" condition ($M = 5.82$) than "control" condition ($M = 3.96$), $t(27) = 5.52$, $SE = .34$, $p < .001$, $\eta^2 = .17$. Effects on the "alternative states" were non-significant ($p > .10$), except for the following. The "high-expertise condition" elicited less irritability ($M = 2.39$) than the "control condition

[3] Power items asked "To what extent do you feel [powerful, dominant, in control, in charge, like a leader] right now?" ("1 = not at all," "5 = a lot,"Cuddy, Wimith, Yap, Carney, 2015). Affect items asked "To what extent did your performance on the test make you feel [secure, etc.]" ("0 = not at all," "10 = extremely"). Attitudes assessed toward "Republicans," "Democrats," "Tom Hanks," "Madonna," "San Francisco," and "New York City" ("−3 strongly unfavorable," "+3 strongly favorable"). Attitude extremity was average absolute value of attitude ratings. Attitude Certainty was average of "How certain are you of your attitude toward [Republicans, etc.]?" ("1 = not at all certain," "9 = extremely certain;" Tormala & Petty, 2004).

[4] Alphas for within subject design are averaged across conditions.

($M = 2.75$), $t(27) = -2.42$, $SE = .15$, $p < .05$, $\eta^2 = .008$. Sadness was marginally lower in the high-expertise condition ($M = 1.43$) than control condition ($M = 1.75$), $t(27) = -1.82$, $SE = .18$, $p < .10$, $\eta^2 = .02$. State power ratings were marginally higher in the high expertise condition ($M = 2.56$) than control condition ($M = 2.31$), $t(27) = 1.79$, $SE = .14$, $p < .10$, $\eta^2 = .02$. Euphoria ratings were marginally *lower* in the high-expertise condition ($M_{HE} = 2.21$, $M_C = 2.79$), $t(27) = -1.98$, $SE = .29$, $p < .10$. This marginal effect on euphoria is *opposite* to the pattern of means observed in Experiment 4 ($M_{HE} = 3.70$, $M_{LE} = 2.83$), and as such, does not appear to be a reliable finding.

Relative to the control condition; the low expertise role failed to reduce Normative Entitlement, and significantly influenced many alternative mediators (self-esteem, insecurity, attitude extremity). Thus, the *Obligated Novice Hypothesis* was not supported. In contrast, relative to the control condition; the high-expertise role significantly increased Normative Entitlement, and produced small, unreliable, or non-existent effects on the "alternative mediators." Thus, the *Earned Dogmatism Hypothesis* was supported. Experiment 6 therefore focused exclusively on the Earned Dogmatism Hypothesis (i.e., low-expertise role condition dropped).

8. Experiment 6

Experiment 6 focused exclusively on the Earned Dogmatism Hypothesis. Participants were exposed to the "high expertise role" scenario and "control" scenario. Again, participants read each of these scenarios twice, first imagining that "John" is the protagonist and then imagining that they themselves ("You") are the protagonist. After reading the "John" version, participants provided Normative Entitlement ratings. After reading the "You" version, participants provided their Situation Specific Open Minded Cognition ratings. Experiment 6 demonstrates that the effect of self-perceived expertise on Situation-Specific Open-Minded Cognition is mediated by Normative Entitlement, even when controlling for the empirically verified confounds identified in Experiment 5.

8.1. Participants

59 MTurk participants completed Experiment 6. Nine were excluded for missing data (final $N = 50$, $M_{age} = 31.48$, 52.0% female, 50.0% Democratic, 26.0% Republican).

8.2. Procedure

Experiment 6 was identical to Experiment 5 except for the following. First, Experiment 6 dropped the "low-expertise scenario" condition. Second, after reading and completing the manipulation check item for the "You" version of each scenario, participants provided Situation-Specific ratings of their *personal* level of Open-Minded Cognition.[5] Importantly, previous research has demonstrated that this Situation-Specific measure of Open-Minded Cognition is strongly associated with actual information selection bias (Ottati et al., 2015, Study 9). Third, when assessing the "alternative state" control variables, we only administered those that yielded a reliable and (at least) borderline significant mean difference when comparing the "high expertise" and "control" conditions in Experiment 5 (irritability, sadness, power).

8.3. Results and discussion

The manipulation was effective. Manipulation check responses were correct in 90% of the cases. For the main analyses, the data was analyzed using the long data format for within-subject designs. ANOVA and Regression yielded the same significant effects (see Keppel & Zedeck, 1989, within-subject analysis). Regression results are reported because they accommodate the Sobel mediational test. Participant Role (high expertise vs. control) was the independent variable, Normative Entitlement was the mediational variable, and open-minded cognition served as the dependent variable. Measures of irritability, sadness, and power were included as control variables.

Results strongly supported the Earned Dogmatism Hypothesis (Figs. 2 & 3). Open Minded Cognition was lower in the "high-expertise" condition ($M = 4.36$) than control condition ($M = 5.23$), $\beta = -.29$, $B = -.86$, $SE = .15$, $t(46) = -5.74$, $p < .001$, $\eta^2 = .08$. Normative entitlement was higher in the "high-expertise" condition ($M = 4.73$) than control condition ($M = 3.57$), $\beta = .24$, $B = 1.15$, $SE = .26$, $t(46) = 4.44$, $p < .001$, $\eta^2 = .05$. Normative Entitlement was strongly negatively associated with open-minded cognition, $\beta = -.69$, $B = -.42$, $SE = .07$, $t(46) = -5.93$, $p < .001$, $\eta^2 = .08$. Adjusted open-minded cognition means revealed that the difference between "high expertise" ($M = 4.68$) and control condition ($M = 5.23$) was smaller when controlling for Normative Entitlement, $\beta = -.18$, $B = -.54$, $SE = .16$, $t(45) = -3.41$, $p < .001$, $\eta^2 = .02$. Sobel's test confirmed that Normative Entitlement mediated the effect of self-perceived Expertise on open-minded cognition (Sobel = 2.82, $SE = .11$, $p < .005$).

9. General discussion & conclusion

Research regarding the Flexible Merit Standard Model demonstrates that different situations activate different normative standards that produce different levels of open-minded cognition (Ottati et al., 2015). Extending this logic, the *Earned Dogmatism Hypothesis* presumes that normative expectations also differ for individuals who occupy distinct roles within the same situation (Katz & Kahn, 1978; Triandis, 1972; Triandis et al., 1984). Specifically, it was proposed that role expectations differ for "experts" (e.g., cancer researcher) and "novices" (e.g., non-medical professionals) within a given situation (e.g., a seminar on cancer prevention). In particular, dogmatism is viewed as more warranted, justifiable, or appropriate when exhibited by an expert than when exhibited by a novice. Experiments 1 and 5 verified this assumption.

If social norms entitle experts to be more dogmatic, conditions that promote self-perceptions of high expertise should increase dogmatic processing. This *Earned Dogmatism Effect* was observed in five experiments. It emerged when using success (high expertise) and failure (low expertise) manipulations of test performance both within and outside the political domain (Experiments 2–4). It also emerged when comparing participants who occupy a "high expertise social role" to participants in a control condition, even under conditions that control for alternative mediating mechanisms (e.g., mood, feelings of power; Experiments 5 & 6). Self-perceptions of expertise increased Normative Entitlement to be closed-minded, which in turn, decreased open-minded cognition. Importantly, Experiments 5 and 6 demonstrated that this Earned Dogmatism Effect emerges when self-perceptions of expertise vary within individuals who occupy different roles in different situations.

The present findings confirm that situations activate role-specific social norms that influence the degree to which individuals engage in open versus closed-minded thinking. This emphasis upon the mediational role of social norms can be contrasted from related research that focuses on the mediational role of affective feeling states. For example, previous research suggests that threatening situations elicit feelings of insecurity that promote dogmatism whereas other situations elicit feelings of personal security that promote open-mindedness (see Jarvinen, 2015; Mikulincer & Shaver, 2001; Slone, 2000; Vail et al., 2012 for related evidence). Insecure individuals are presumably threatened by information that challenges their worldview, and as a consequence, respond to such information in a dogmatic manner. Secure individuals are less easily threatened, and therefore adopt a more open-minded cognitive orientation

[5] Situation-specific items added "In this situation" to the General Open-Minded Cognition items.

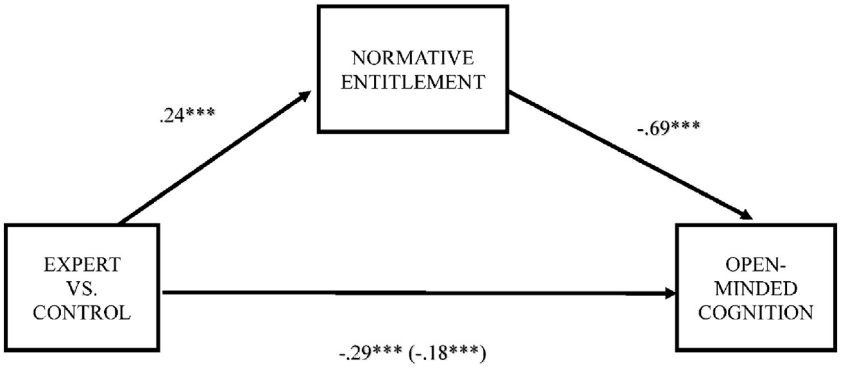

Fig. 3. Effect of Self-Perceived Expertise (Expert vs. Control) on Open-Minded Cognition Mediated by Normative Entitlement (β, Experiment 6).

(see Kruse, Chancellor, Lyubomirsky, 2014a; 2014b; Kruse, Chancellor, Ruberton, Lyubomirsky, 2014 for related findings).

Although self-perceptions of high expertise may engender feelings of personal security in some circumstances, the present findings reveal that social norms entitle experts to adopt a relatively dogmatic cognitive style. As a consequence, self-perceptions of high expertise can increase dogmatic thinking. Interestingly, however, this Earned Dogmatism Effect only emerged when comparing the "high expertise role" condition to the control condition. When comparing the "low expertise role" condition to the control condition, effects on the Normative Entitlement Ratings were completely absent whereas effects on the affective ratings were quite prominent, revealing greater emotional discomfort in the "low expertise role" condition. Thus, the psychological effects of assuming "novice" and "expert" roles appear to differ qualitatively. It is conceivable that affectively mediated effects predominate when considering the effects of "low expertise" whereas normatively mediated effects predominate when considering the effects of assuming an "expert" social role. Future research might investigate this possibility.

Finally, it should be noted that the present research focuses on situational variation in self-perceptions of expertise when controlling for individual differences in actual amount of expertise or knowledge (see Fisher & Keil, 2015 for the distinction between actual and perceived expertise). Research that focuses on individual differences in expertise has revealed that unskilled individuals can exhibit biased self-perceptions of expertise that engender over-confidence (Dunning, 2011). Other work, however, suggests that individuals who possess *high* levels of knowledge or skill within a domain can also exhibit relatively high levels of over-confidence (Fisher & Keil, 2015). Additional research is needed to examine how "actual" and "perceived" expertise combine to influence open-mindedness, dogmatism, and over-confidence. We look forward to future work that investigates questions of this nature.

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