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The Interactive Effects of Ambivalence and Certainty on Political Opinion Stability

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Abstract

Some political attitudes and opinions shift and fluctuate over time whereas others remain fairly stable. Prior research on attitude strength has documented several features of attitudes that predict their temporal stability. The present analysis focuses on two of them: attitudinal ambivalence and certainty. Each of these variables has received mixed support for its relationship with attitude stability. A recent set of studies, however, has addressed this link by showing that ambivalence and certainty interact to predict stability. Because those studies relied exclusively on college student samples and considered issues that may have been especially likely to evince change over time, the present analysis aimed to replicate the original findings in a sample of registered Florida voters with an important politically relevant issue: abortion. Results of these analyses replicated the previous findings and support the generalizability of the ambivalence \times certainty interaction on attitude stability to a sample of registered voters reporting their attitudes toward abortion. Implications for public opinion and the psychology of political attitudes are discussed.

Keywords: attitude stability, certainty, ambivalence, attitude strength, public opinion

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A complete understanding of public opinion relies not just on snapshots of opinions at any given moment, but also on changes in opinions over time. Plenty of research efforts have observed trends in national opinion polls to understand the degree to which public opinion shifts or remains stable as time moves on (e.g., Gold, 2015; Page & Shapiro, 1982). In addition to this macro perspective on shifting opinions, other work has aimed to understand the changes in *individuals'* opinions over time. Is a person's opinion at one moment the same as his or her opinion at another moment? If not, what determines stability?

Many social psychological models conceptualize attitudes as relatively enduring evaluations (Eagly & Chaiken, 1993; Petty, Briñol, & DeMarree, 2007). Indeed, longitudinal analyses have found that on some topics at least, people's opinions can be relatively stable (e.g., Achen, 1975). Other analyses, however, show that opinions can

also fluctuate quite a lot, leading some to posit that many people do not hold stable attitudes at all (Converse, 1964; Schwarz, 2007).

This pattern of results—that opinions can be stable and that they can fluctuate—suggests that an attitude’s stability can depend on a host of factors. In this research, we examine features of the attitude itself that predict stability. The degree to which an individual’s opinion is likely to change over time is important because the stability of attitudes is related to their ability to predict future behavior (Doll & Ajzen, 1992; Glasman & Albarracín, 2006).

Attitude Strength

One approach to understanding which attitudes will change over time has been the study of attitude strength: the notion that some attitudes are more durable and consequential than others. Strong attitudes are those that resist change in the face of explicit persuasion, predict relevant behavior, and most relevant to the present research, endure over time (Krosnick & Petty, 1995). The research on attitude strength has identified many attributes of attitudes that predict those important outcomes, including the two we focus on in this research: ambivalence and certainty (see Luttrell & Sawicki, 2020, for a more complete review).

Although research has tended to focus primarily on main effects of various attitude attributes, more recent work has shown that the relationships between stability and these strength-related attitude attributes further depends on other features of the attitude or environment. In particular, a recent set of studies has documented how ambivalence and certainty interact to predict attitude stability over time (Luttrell, Petty, & Briñol, 2016). Before reviewing these findings, we provide some background on these two attitude strength variables.

Attitude Ambivalence and Certainty as Predictors of Stability

First, attitudinal *ambivalence* refers to how much an attitude is associated with both positivity *and* negativity (Thompson, Zanna, & Griffin, 1995). Notably, this construct has been treated in slightly different ways over the years in political psychology. For example, some have used “ambivalence” to refer to public opinion overall, indicating “an ambivalent public,” for example (e.g., Page & Shapiro, 1992). We adopt the definition that is common in psychology, which is that “ambivalence” occurs when an individual has both positive and negative reactions to the same issue (Kaplan, 1972). For instance, a person might believe that allowing women the choice to pursue abortion empowers them and gives them control over their bodies but also that abortions deny unborn babies the right to life. The conflict between this person’s pro-abortion and anti-abortion considerations means his or her attitude toward abortion is ambivalent. Holding such mixed reactions tends to result in feeling conflicted, but not always (e.g., see Priester & Petty, 1996; van Harreveld, van der Pligt, & de Liver 2009). We return to this point shortly.

Because greater ambivalence tends to reflect a weaker attitude (Conner & Armitage, 2008), one would reasonably predict that more ambivalent attitudes would fluctuate more over time. Although some data support this negative correlation between ambivalence and stability (Bargh et al., 1992; Craig, Martinez, & Kane, 2005), other data do not (Armitage & Conner, 2000; Bassili, 1996; Karpen, Jia, & Rydell, 2012). In their review of research on fluctuating policy attitudes, Steenbergen and Brewer (2004) concluded “that an ambivalent mass public...is not necessarily an unpredictable mass public.” This mix of positive and null results suggests that the ambivalence-stability relationship might depend on other features of the attitude.

In addition to varying in ambivalence, attitudes can also differ in their accompanying degree of *certainty*. Attitude certainty is generally defined as a subjective sense of conviction in one’s attitude or the sense that one’s attitude

is valid (Tormala & Rucker, 2018).ⁱ That is, even if two people agree in their favorable attitude toward a particular policy, one person may nevertheless feel more certain than the other that it is the right opinion to have. In general, more confidently held attitudes, including political ideology, tend to be stronger and more consequential (Shoots-Reinhard et al., 2015; see Tormala & Rucker, 2018, for a review). Thus, one would expect that greater certainty would relate to greater temporal stability, but the literature again offers mixed support for this prediction. Although some data support the positive certainty-stability correlation (Abelson, 1988; Bassili, 1996), other data do not (Craig et al., 2005). This mixed evidence similarly calls for a greater understanding of other attitudinal features that moderate this effect.

An Interaction Approach

Luttrell et al. (2016) recently clarified the relationships between ambivalence, certainty, and stability, demonstrating that ambivalence and certainty *interact* to predict attitude stability over time. That is, an attitude may exist in several combinations of (un)certainly and (un)ambivalence. For example, people can be confident about an unambivalent attitude if they only have positive or negative associations with a topic and also perceive that evaluation as especially valid. However, people can also be confident about an ambivalent attitude if they have spent considerable time weighing the pros and cons, concluding that both sides of an issue have merit.

Across three studies investigating different topics, increasing attitude certainty was associated with greater temporal stability (less change over time) only at relatively low degrees of attitude ambivalence. That is, certainty reflected a crystallized, enduring attitude only when that attitude was pretty clearly positive or negative. At relatively high degrees of ambivalence, however, greater certainty was actually associated with *greater* change over time. In other words, when a person's attitude was relatively mixed, greater certainty in that attitude reinforced its inherent instability. Put simply, certainty magnified the typical effect of ambivalence (see also Clarkson, Tormala, & Rucker, 2008; Durso, Briñol, & Petty, 2016).

So, why might these variables interact in this way? First, ambivalence is an attitudinal attribute that reflects the degree to which the attitude is based on evaluatively consistent or inconsistent information. As such, ambivalent attitudes are especially sensitive to situational influences that can push them in one direction or another. This makes ambivalent evaluations more variable over time (e.g., Tourangeau, Rasinski, Bradburn, & D'Andrade, 1989). That is, either positive or negative considerations relevant to the topic could be more salient or accessible at any given time, perhaps based on the most recently encountered media report or friend with whom the issue was discussed, making it less likely that people report the same overall evaluation at every opportunity (Zaller & Feldman, 1992). Certainty, however, reflects a judgment of the validity of mental content (Briñol & Petty, 2009; Petty et al., 2007). Therefore, greater attitude certainty should increase the consistency between whichever reactions come to mind in a given instance and the overall evaluation of the target at that moment because those reactions seem especially valid.

The unique qualities of ambivalence and certainty thus predict an interaction between these variables in predicting attitude stability. That is, attitudes should be especially stable over time when they are both unambivalent and held with certainty because this certainty should validate the valence that consistently comes to mind at each moment of measurement, reinforcing the stability of unambivalent attitudes. By contrast, attitudes should be especially *unstable* when they are both ambivalent and held with certainty; in this case, certainty validates the natural tendency of ambivalent attitudes, which is for different evaluations to come to mind at each measurement. Further, certainty may magnify one's motivation to resolve ambivalence, prompting additional thought and information

seeking to settle on a more consistent evaluation (DeMarree, Briñol, & Petty, 2015; Sawicki et al., 2013). Thus, higher certainty should make ambivalent attitudes less stable.

Two Manifestations of Ambivalence

Prior research has distinguished between two aspects of ambivalence. On the one hand, ambivalence can refer to the mere structural existence of mixed positive and negative reactions to a target of evaluation. In this sense, ambivalence is a function of whether a person tends to have a relatively clear, one-sided attitude or a relatively mixed attitude that contains high degrees of both acknowledged positivity and negativity (Kaplan, 1972).

On the other hand, ambivalence can refer more specifically to an unpleasant feeling of conflict that pertains to an attitude (Newby-Clark, McGregor, & Zanna 2002; Priester & Petty, 1996; van Harreveld et al., 2009). That is, holding an attitude comprised of mixed reactions can be accompanied by uncomfortable feelings which people are often motivated to reduce. However, felt conflict about one's attitude can depend on a host of influences beyond the sheer degree to which a person has a mix of positive and negative reactions. For example, holding the degree of mixed reactions constant, people can feel torn or conflicted when they anticipate conflicting information of which they are currently unaware (Priester, Petty, & Park 2007), face a pending decision (e.g., van Harreveld et al., 2009), wish they had a different attitude (DeMarree, Wheeler, Briñol, & Petty, 2014), or think about the attitudes that other valued people hold that are different from their own (Priester & Petty, 2001).

The theoretical account advanced earlier suggests that certainty is most likely to moderate the effects of the *structural* level of ambivalence (i.e., the extent to which someone reports having mixed reactions to the same issue). By contrast, feeling conflicted is a unique construct that we suggest is not necessarily related to the certainty-dependent consistency or inconsistency of evaluative reactions over time. In other words, a person's attitude may fluctuate when she confidently holds a mixture of positive and negative associations with a topic, even if she does not affectively experience that as a conflict. Indeed, in prior studies, certainty only interacted with the structural aspect of ambivalence to predict stability. There was no reliable interaction with an index of felt conflict (Luttrell et al., 2016). Notably, this is not to suggest that feeling conflicted is necessarily *unrelated* to attitude stability (e.g., Luttrell et al., 2016, found an overall correlation between feeling conflicted and attitude stability). Rather, we suggest that the process through which it would be tied to attitude stability is not one that would be moderated by certainty.

The Present Research

The present research addresses two key limitations of Luttrell et al.'s (2016) studies. First, those data were collected from undergraduate college students. Given this restricted sample and its unique properties (e.g., Henrich, Heine, & Norenzayan, 2010), it remains an open question whether the results would generalize to the opinion dynamics of other populations. Although there is no particular reason to believe that the ambivalence \times certainty interaction cannot reflect a fundamental way in which opinions are held and fluctuate over time, the effect could be attributed to some unique features of the college student population. For example, younger adults are relatively more likely to change their attitudes over time compared to other age groups (Jennings & Niemi, 1981; Sears, 1983; Visser & Krosnick, 1998). Thus, the previous studies may have capitalized on a population with a particularly high propensity to change their attitudes. Further, the certainty and ambivalence of college students' attitudes might be especially impactful because young adults tend to know less about a range of issues compared to those in middle adulthood (Visser & Krosnick, 1998). As people age, they may develop more crystallized attitudes due to their expanding knowledge base, rendering features like ambivalence and certainty less impactful. Thus, to

test the replicability of previous findings in a sample drawn from a different population, the present analysis considers opinion responses from a sample of registered Florida voters randomly selected from voter registration rolls with working telephone numbers (Florida Voters Panel Study [FVPS]; Kane, 1999).

Second, Luttrell et al. (2016) considered people's attitudes toward organic food, alcohol, and Mitt Romney in the months leading up to the 2012 presidential election. Although these topics are not trivial, they may be especially well suited to establishing variance in temporal stability. Organic food may not be a topic about which college students have well-developed opinions, the first year of college is likely to be a time of considerable change in one's relationship with alcohol, and the participant sample consisted of individuals going to school in a swing state (Ohio), which meant they were likely exposed to a wide range of political rhetoric in the months preceding the election. That is, for all three of these topics, change over time was relatively likely. So, as an even more stringent test of the ambivalence \times certainty interaction hypothesis, the present work considers an attitude object about which many adults are likely to have relatively stable attitudes: abortion. Thus, if ambivalence and certainty interact to predict changes in abortion attitudes over time among a non-college student sample, it would provide especially strong support for the effect. Finally, showing that an effect can replicate across different topics and populations is important because sometimes even seemingly small variations in research materials can lead to very different results (e.g., Luttrell, Petty, & Xu, 2017).

Overview of Hypotheses

In sum, we hypothesized that attitudinal ambivalence and certainty would interact to predict the likelihood that people would report inconsistent positions on the abortion issue over time. We expected that the traditional attitude strength relationship between certainty and stability (i.e., greater certainty corresponding to greater stability) would be especially the case the less ambivalent the attitude was. The more ambivalent the attitude, however, the more increases in certainty would instead predict reduced temporal stability. We also expected this interaction pattern to show that the traditional relationship between ambivalence and stability (i.e., greater ambivalence corresponding to reduced stability) would be especially the case for attitudes held with increasingly high certainty.

Recall that Luttrell et al. (2016) observed the ambivalence \times certainty effect only when considering ambivalence as the degree to which people's attitudes were structurally comprised of mixed reactions and not when it was defined as the subjective experience of feeling conflicted. The ambivalence-relevant survey items included in the FVPS allowed us to again test the potential differences between these two aspects of ambivalence. That is, the survey included two questions pertaining to respondents' ambivalence about the general issue of abortion.ⁱⁱ One item asked voters to report how much they had "mixed feelings and beliefs about the abortion issue." We used this to capture the extent to which people reported holding evaluatively consistent versus inconsistent reactions to the issue. We rely on a different item to capture the experience of felt conflict: "I sometimes find myself feeling 'torn' between two sides of the abortion issue."

It is important to note that both ambivalence items available in the survey data are subjective measures inasmuch as they are self-reports of the features of the attitude. But, one item is a subjective report of whether people think their attitude consists of mixed reactions (similar to what prior scholars have called "objective" or "structural" ambivalence), whereas the other is about feeling conflicted about the attitude object, which prior scholars have sometimes called "subjective" or "felt" ambivalence (Priester & Petty, 1996; Thompson et al., 1995). Because the theoretical basis for our predictions emphasizes the conceptual difference between being mixed and feeling

conflicted, we predicted that reports of being “mixed” about abortion would interact with certainty to predict temporal stability but that reports of “feeling torn” (i.e., conflicted) would not.

To gather initial support for this prediction, we re-analyzed the data from Studies 1 and 2 in [Luttrell et al. \(2016\)](#), isolating individual items in the “subjective ambivalence” index that separately captured being “mixed” and “feeling conflicted.” These new analyses supported significant “mixed” × certainty interactions on attitude stability in both studies, but the “conflicted” × certainty interaction did not emerge as a significant interaction in either study (see the [Supplementary Materials](#) for a full report of these re-analyses). Therefore, although each item is technically a “subjective” report, they differ conceptually and empirically in the ways suggested by the theoretical account in the original research. We therefore believe it is appropriate to treat the “mixed” and “torn” items from the FVPS as mapping onto “structural” versus “felt” ambivalence respectively.

Method

Participants

The data for the present study come from the FVPS, a panel study of registered voters in Florida ([Kane 1999](#)). These data are available to institutions that are members of the Interuniversity Consortium for Political and Social Research (ICPSR) and were downloaded from the ICPSR website. Participants responded to survey questions via telephone in two waves. Data for the first wave were collected from January – February, 1999 ($N = 708$; $M_{\text{age}} = 60.10$, $SD = 15.58$; 53.8% female), and data for the second wave were collected in June, 1999. Response rate for Wave 1 was 54.6%, and 60.2% of the Wave 1 respondents responded to the follow-up survey.

We chose this dataset because it uniquely met the needs of our research question. Although other available datasets measure attitudes at multiple times, we are not aware of any others that also jointly assess ambivalence and certainty in respondents’ initial attitudes. Respondents indicated their position on an important social and political issue (abortion) on identical measures at two time points, and they also responded to questions assessing their ambivalence and certainty with respect to their position. These measures could thus be submitted to statistical analysis using regression models akin to those employed in [Luttrell et al. \(2016\)](#). Complete scripts for all analyses can be found at the Open Science Framework (see [Supplementary Materials](#)). Although other attitudes were assessed during both waves (i.e., attitudes toward politicians and political groups), measures of ambivalence and certainty were not assessed for these topics.

Measures

Attitude Stability

Participants indicated their position on abortion at both time points by responding to the question “When it comes to abortion matters, in general, would you describe yourself as pro-choice or pro-life?” People who refused to answer this question at either time point ($N = 9$) were dropped from analysis, but those who remained had chosen from “pro-choice,” “pro-life,” “neutral,” or “don’t know.” Attitude stability was computed using a dichotomous change index such that 0 indicated a respondent who provided the same response at both measurements, and 1 indicated a respondent who provided any different response (within the four options) during the second wave survey. Given the nature of the issue, it is not surprising that 314 people (75%) responded with the same answer at both time points. Nonetheless, 104 individuals (25%) showed some change either completely shifting from one point of view

to another ($N = 41$) or making a less dramatic shift (e.g., from being pro-life to responding, “don’t know,” see Table 1 for frequencies of each specific form of stability and change).ⁱⁱⁱ

Table 1

Frequencies of Each Form of Stability and Change

Wave 1 Response	Wave 2 Response	Frequency	Percentage
Pro-Choice	Pro-Choice	181	43.3
Pro-Choice	Pro-Life	19	4.5
Pro-Choice	Neither	16	3.8
Pro-Choice	Don't Know	6	1.4
Pro-Life	Pro-Choice	22	5.3
Pro-Life	Pro-Life	123	29.4
Pro-Life	Neither	8	1.9
Pro-Life	Don't Know	2	0.5
Neither	Pro-Choice	13	3.1
Neither	Pro-Life	6	1.4
Neither	Neither	8	1.9
Neither	Don't Know	1	0.2
Don't Know	Pro-Choice	2	0.5
Don't Know	Pro-Life	5	1.2
Don't Know	Neither	4	1.0
Don't Know	Don't Know	2	0.5

Note. These frequencies include participants who did not provide a response to the ambivalence and/or certainty items and thus were not included in final analyses.

Ambivalence

To index the degree to which they had mixed evaluations of abortion (analogous to structural ambivalence), respondents rated their agreement with the statement, “I sometimes have mixed feelings and beliefs about the abortion issue.”^{iv} Responses were recoded such that they fell linearly on a 5-point Likert scale anchored at “strongly disagree” and “strongly agree,” with higher numbers indicating more ambivalence. “Don’t know” responses to this question were dropped from analysis ($N = 30$). Because this measure is the focal measure of having ambivalent reactions, we refer to it more simply as “ambivalence” when reporting the results.

To index experienced conflict (felt ambivalence) about the issue (i.e., not merely acknowledging having mixed views), we used responses indicating how similar the following statement was to the participants’ own feelings: “I sometimes find myself feeling ‘torn’ between two sides of the abortion issue.” Responses were provided on a 7-point scale anchored at “very similar to my own feelings” and “not like my own feelings at all.” They were recoded such that higher numbers reflect greater felt conflict. “don’t know” responses to this question were dropped from analysis ($N = 18$). Similar measures of “feeling torn” have been used in prior research (e.g., Newby-Clark et al., 2002) and this was the only item in the survey that examined feeling conflicted about abortion.

Certainty

Participants were asked how much they agreed with the statement, “I think my views about abortion are absolutely correct.” Although this question does not directly ask participants for their certainty or confidence per se, the per-

ception of correctness is a key feature of attitude certainty (see Petrocelli, Tormala, & Rucker, 2007), and previous investigations of the certainty \times ambivalence effect find similar results when considering perceived correctness as the index of attitude certainty and when considering perceived clarity as the index of attitude certainty (Luttrell et al., 2016). Responses were recoded such that they fell linearly on 5-point Likert scales anchored at “strongly disagree” and “strongly agree,” with higher numbers indicating more confident attitudes. “Don’t know” responses were dropped from analysis ($N = 42$).

Demographic Covariates

In all models, we controlled for age, gender, education, and political ideology, all of which have been associated with attitudes toward legal abortion (cf. Barkan, 2014) and which may also account for the stability of such attitudes. Nevertheless, the statistical significance of all effects does not change when these variables are not entered as covariates (see Supplementary Materials).

Participants self-reported their age in years ($N = 18$ responded “don’t know”). They reported their gender as “male” or “female,” and responses were dummy coded (female = 0; male = 1); 53.8% identified as female and 46.0% identified as male (1 respondent did not choose a gender group). They reported how many years of schooling they have had, which we use as an indicator of education ($N = 6$ responded “don’t know”). They also reported where they would place themselves on a scale from “very liberal” (1) to “very conservative” (7). Summary statistics for age, education, and ideology are presented in Table 2.

Procedure

Demographics, initial attitudes, ambivalence, and certainty regarding abortion were assessed during the first wave of data collection. Follow-up attitudes were assessed during the second wave.

Results

To test whether any of the predictor variables were associated with participant attrition, data were submitted to a multiple logistic regression model, entering certainty, having mixed reactions, feeling torn, initial abortion position, and demographic covariates as simultaneous predictors of whether a participant completed the second wave survey (1) or not (0). Results show that none of these variables predicted retention, $ps > .25$.

Table 2

Correlations Between Measures and Descriptive Statistics

Measure	1	2	3	4	5	<i>M</i>	<i>SD</i>
1. Certainty						3.88	1.32
2. Ambivalence	-.34**					2.93	1.64
3. Felt Conflict	-.23**	.46**				3.40	2.61
4. Age	-.02	.00	.03			59.47	15.65
5. Education	-.07	-.01	.07	-.13*		14.16	2.58
6. Ideology	.13*	-.07	-.12*	.03	-.05	4.54	1.66

Note. Correlations only for participants who completed both surveys.

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

Certainty and “Mixed” Predicting Response Instability

Table 2 presents the bivariate correlations among the predictor variables considered in all analyses that follow. Relevant for the focal analyses, consistent with previous research, the measure of being mixed about the abortion issue and attitude certainty were significantly, although modestly, negatively correlated in both the full sample, $r(640) = -.33, p < .001$, and among those who completed the attitude measure at both times, $r(380) = -.34, p < .001$.

We first tested the ambivalence \times certainty interaction on attitude instability, focusing on reports of being “mixed.” Data were submitted to a multiple logistic regression model, following recommended practice for testing conditional effects in political science (Brambor, Clark, & Golder, 2006). Demographic covariates, certainty, being mixed, and the certainty \times mixed interaction term were entered as simultaneous predictors of attitude change (Table 3).^y Certainty and being mixed were mean-centered. Results reveal a significant interaction between certainty and being mixed, $B = .15, Z = 2.46, p = .01, 95\% \text{ CI } [.03, .27]$ (see Figure 1). Decomposing this interaction reveals that the traditional attitude strength effect of certainty on stability is observed to a greater extent as reports of being mixed decrease, but this effect attenuates, and even begins to reverse, at higher degrees of being mixed. That is, greater certainty is associated with a reduced likelihood of response instability at relatively low ambivalence (1 *SD* below the mean), $B = -.37, Z = -2.29, p = .02, 95\% \text{ CI } [-.68, -.05]$. At relatively high degrees of ambivalence (1 *SD* above the mean), however, there is a non-significant trend of a reversal in which certainty is positively related to instability, $B = .12, Z = 0.98, p = .33, 95\% \text{ CI } [-.11, .35]$.

Table 3

Logistic Regression Models Predicting Attitude Change

Regression term	Ambivalence = “Mixed”	Ambivalence = “Torn”
Age	.01	.01
Gender	.28	.25
Education	-.10	-.13*
Political Ideology	.01	.07
Ambivalence	.26**	.24**
Certainty	-.13	-.06
Ambivalence \times Certainty	.15*	.02
Sample Size	368	360

Note. Values are unstandardized regression coefficients. Ambivalence and certainty are mean-centered.

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

From a different perspective, the traditional attitude strength effect of ambivalence on stability is observed more strongly as certainty increases. That is, at relatively high degrees of attitude certainty (i.e., at the maximum certainty value because 1 *SD* above the mean for certainty falls outside the range of possible response options), increasing reports of being mixed on the issue is associated with increased probability of attitude change, $B = .43, Z = 3.98, p < .001, 95\% \text{ CI } [.22, .64]$. The effect of being mixed is not significant, however, at a relatively low degree of certainty (1 *SD* below the mean), $B = .07, Z = .57, p = 0.57, 95\% \text{ CI } [-.16, .30]$.

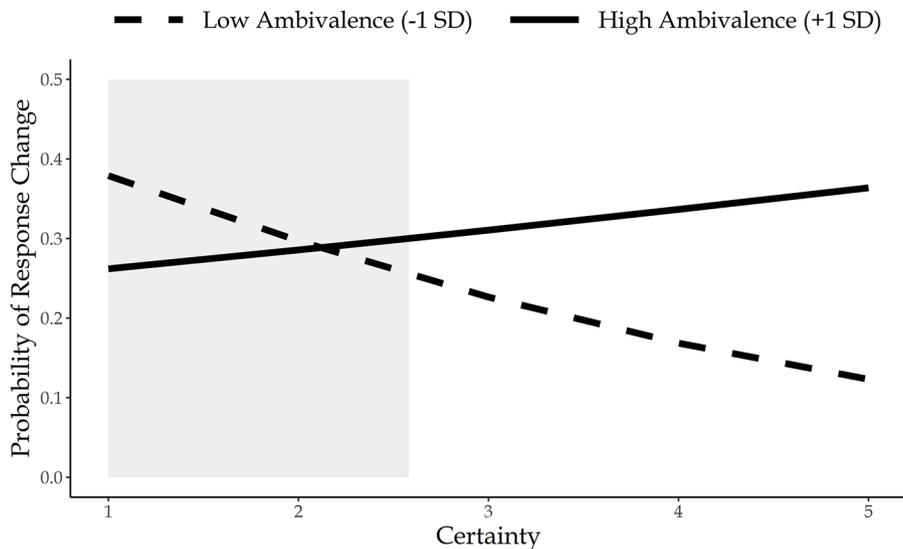


Figure 1. Attitude certainty and ambivalence interact to predict the stability of attitudes toward abortion among Florida voters with approximately four months between measurements. Shaded area represents values of certainty more than 1 standard deviation below the mean.

The Role of Feeling Conflicted

The data were also submitted to another set of models like those reported in the previous section, replacing the “mixed” predictor with feeling torn (i.e., conflict). Demographic covariates, certainty, feeling torn, and the certainty \times torn interaction term were entered as simultaneous predictors of attitude change (Table 3). Unlike with being “mixed,” there was no interaction between feeling torn and certainty, $B = .02$, $Z = 0.46$, $p = .64$, 95% CI $[-.06, .09]$.

As another approach to testing whether felt conflict accounts for the certainty \times mixed interaction, the logistic regression model reported in the previous section was run again while entering felt conflict as a covariate. Results reveal that the certainty \times mixed interaction remains significant, $B = .15$, $Z = 2.45$, $p = .01$, 95% CI $[.03, .27]$.

Discussion

Data from a random sample of registered voters replicated the interaction between ambivalence and certainty on the temporal stability of attitudes found in previous research on college students. As ambivalence decreased, there was a stronger positive relationship between certainty and attitude stability—the traditional attitude strength effect of certainty. Similarly, as certainty increased, there was a stronger positive relationship between ambivalence and attitude instability—the traditional attitude strength effect of ambivalence.

Also consistent with prior findings, this interaction only emerged when considering respondents’ reports of how “mixed” they were on the issue of abortion (reflecting reports of holding evaluatively inconsistent reactions to the issue; structural ambivalence) and not when considering their reports of how much they felt “torn” between two sides of the issue (reflecting reports of their subjective reaction to holding mixed evaluations as well as potentially other sources of conflict). This further supports the notion that the ambivalence \times certainty interaction is not nec-

essarily reliant on the unpleasant affective experience of holding conflicting evaluations; rather, it relies on the mere co-existence of positive and negative reactions to the topic under consideration. As such, these results support the theoretical account advanced by Luttrell et al. (2016), reviewed earlier.

These results have intriguing implications for the measurement of ambivalence in that two introspective self-report questions had distinct and theoretically meaningful effects, one of which captured the mere degree to which people have mixed reactions (structural ambivalence) and the other capturing the unpleasant affective state of conflict (felt ambivalence). These distinctions emerged both in the present report and in re-analyses of previous studies. Prior researchers have acknowledged that subjective measures of ambivalence tap into multifaceted aspects of ambivalence (i.e., cognitive, affective, and behavioral; see Priester & Petty, 1996), and the current research suggests that these different facets can differentially predict certain outcomes. Although the subjective acknowledgement of one's mixed reactions moderated certainty's relationship with attitude stability, feelings of conflict may be more relevant for other outcomes (e.g., time to make a decision; Durso et al., 2016).

Finally, these findings may speak to other variables in political psychology, including dogmatism and polarization. In particular, it may be fruitful to consider these variables as the combined force of certainty and unambivalence. Therefore, not only are confidently held one-sided attitudes especially stable over time, but they may also evince qualities like intolerance (van Prooijen & Krouwel, 2017) or out-party animosity (Iyengar, Lelkes, Levendusky, Malhotra, & Westwood, 2019), which have been traditionally considered in the frameworks of dogmatism and affective polarization.

Limitations

Notably, these data did not support the significant *reversed* effect of ambivalence at relatively high certainty that Luttrell et al. (2016) found. Although the results of the present analysis show that same trend, the simple effect was not significant. There are several potential reasons for this. First, abortion is a topic for which most people are likely to report consistent attitudes over time, making the task of documenting a case of *greater* change more difficult. Second, although prior research used continuous measures that were more sensitive to subtle changes, the present analysis assessed abortion attitudes using categorical measures (i.e., "pro-choice" vs. "pro-life"), making it more difficult to detect higher degrees of change between measurements. Finally, the effect of certainty at high degrees of ambivalence may be a smaller effect that requires larger sample sizes to detect. Thus, this null effect in the present study may indicate the absence of a reliable certainty-stability effect at high degrees of ambivalence, but the previous considerations suggest that other features of this panel study could have obscured an otherwise reliable effect.

The present analysis also limits us from making strong claims about whether ambivalence \times certainty interactions predict true attitude change over time or whether they instead predict a phenomenon reducible to measurement error. This has been a recurring question in the literature on changes in political opinion over time (e.g., Achen 1975; van der Veld & Saris, 2004). Although other public opinion scholars are intent to document cases of *actual* opinion change rather than mere measurement error, we propose that a measurement phenomenon is interesting in and of itself. First, consider a case of true "attitude change." In the case of ambivalent attitudes, when evaluative responses change from one measurement to the next, it may signal that people have resolved their evaluative conflict and have adopted a new, unambivalent attitude. However, the same degree of change in evaluative responses could also signify fluctuations in present-moment evaluations even though the underlying attitude and its stored set of mixed valenced associations remains unchanged. In some sense, this possibility indicates mea-

surement error in that responses are inconsistent despite little change in the underlying attitude; however, each evaluation may still be psychologically meaningful and reflective of an honest evaluation at a particular moment in time. Nevertheless, the current data do not allow us to tease apart the extent to which ambivalence \times certainty predicts “true” attitude stability vs. survey response stability. [Luttrell et al. \(2016\)](#), however, found that the ambivalence \times certainty effect held even after controlling for indices of measurement error computed from variance in individual attitude items. Because the present survey assessed attitudes with a single categorical response item, we could not conduct the same analysis here, but the results from prior research offer at least suggestive evidence that the current effects are not purely driven by measurement error.

Finally, we note that the data included in our analyses are from 1999 and many scholars have noted changes in the American political climate over time, such as increased partisan polarization (e.g., [Lelkes, 2016](#)). Perhaps greater polarization might correspond with reduced ambivalence across a range of political opinions and thus, mean levels of these variables may be somewhat different today. However, we do not see this as a clear challenge to the reliability of our findings because the psychological consequences of ambivalence and certainty are likely to have persisted despite hypothetical historical changes in average levels of those variables in the public. Indeed, our results replicate those of [Luttrell et al. \(2016\)](#), which analyzed data collected more recently.

Conclusion

These results further support the fruitfulness of considering interactions between strength-related attitude attributes. That is, historically researchers have tended to focus on overall effects of individual attitude attributes such as ambivalence, certainty, importance, and knowledge, but some emerging research has begun to examine interactions between these attributes (see [Luttrell & Sawicki, 2020](#); [Wallace et al., 2020](#)). Indeed, as we demonstrated, cases of mixed support for these attitude strength variables’ effects might be meaningfully resolved by considering interactions between them.

Future research in this area may also begin to examine the stability of attitude attributes such as ambivalence and certainty themselves (cf. [Krishnan & Smith, 1998](#)). Although in general, we suspect that these characteristics are relatively stable over time, it is also reasonable to propose that they can fluctuate as well. For example, changes in confidently held ambivalent attitudes may be driven by a desire to resolve cognitive inconsistency (e.g., [DeMarree et al., 2015](#)). Thus, changes in one’s evaluation would be naturally accompanied by reductions in ambivalence. Alternatively, the stability of relatively confident, unambivalent attitudes may be accompanied by increases in certainty over time ([Petrocelli, Clarkson, Tormala, & Hendrix, 2010](#)). By looking at the longitudinal dynamics underlying various attitude strength indicators, scholars can achieve a more complete understanding of attitude stability.

Overall, the present work conceptually replicated the structural ambivalence \times certainty interaction on longitudinal opinion response stability, extending previous findings to a non-student sample and an additional, controversial issue relevant to contemporary political discussion. Future research should test the key psychological mechanisms underlying these effects as well as consider other cases of interactions between attitude strength predictors.

Notes

- i) In the attitude certainty literature, “certainty” and “confidence” are often used interchangeably to refer to the same construct (see [Tormala & Rucker, 2018](#)).
- ii) The dataset also includes other measures relevant to ambivalence, but they pertain specifically to people’s openness to abortion under particular circumstances (e.g., when the pregnancy was the result of rape) rather than their overall position on the issue. There are no corresponding measures of certainty, however, for each of the specific considerations. Because our interest is in the interaction between ambivalence and certainty for the stability of general attitudes, we focus on the measures related to respondents’ overall position on abortion.
- iii) This scoring method considers any change as unstable. Thus, shifting from “neither” to “don’t know” is counted the same as shifting from “pro-life” to “pro-choice.” See the [Supplementary Materials](#) for analyses focused on shifts between “pro-life” and “pro-choice.” These results similarly support the expected ambivalence × certainty interaction.
- iv) Note that this item references both “feelings” and “beliefs.” Indeed, a person’s degree of attitudinal ambivalence can be built on mixed affective reactions, mixed cognitive reactions, or both ([Itkes, Eviatar, & Kron, 2019](#); [Rocklage & Fazio, 2016](#)). We thus use this self-report item to index how much a person seems to have varied versus uniform evaluative associations with abortion, regardless of the affective versus cognitive nature of those associations and independent of how they feel about that degree of ambivalence.
- v) We also ran additional models without including any interaction terms to test overall effects of our predictors. Results of those models can be found in Table S2 (see [Supplementary Materials](#)). Like the models reported in [Table 3](#), these supplemental models also support overall effects of ambivalence measures (but not certainty) on attitude stability.

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Competing Interests

The authors have declared that no competing interests exist.

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Supplementary Materials

The Supplementary Materials include re-analyses of [Luttrell, Petty, and Briñol \(2016\)](#), analyses omitting interaction terms to highlight main effects on opinion stability, analyses omitting demographic covariates, and additional analyses addressing the relative infrequency of opinion change in the dataset (for access, see [Index of Supplementary Materials](#) below).

Index of Supplementary Materials

Luttrell, A., Petty, R. E., & Briñol, P. (2020a). *Supplementary materials to "The interactive effects of ambivalence and certainty on political opinion stability"* [Additional analyses]. PsychOpen. <https://doi.org/10.23668/psycharchives.3157>

Luttrell, A., Petty, R. E., & Briñol, P. (2020b). *Supplementary materials to "The interactive effects of ambivalence and certainty on political opinion stability"* [Complete scripts for all analyses]. OSF. <https://osf.io/e7zb2/>

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