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Vote choice under certainty, risk, and uncertainty

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ABSTRACT

Voters are thought to be repelled by unclear party communication or all-out uncertainty about their ideological or programmatic positions. Our contribution builds on a series of survey experiments in the alternative states of certainty, risk, and uncertainty. Choice under risk occurs, for instance, when electoral platforms transmit blurred or unclear signals. However, the range of potential positions and their respective probabilities is considered common, exogenous knowledge: we find that these scenarios neither attract nor repel voters. In contrast, choice under uncertainty is given when potential outcomes or their respective probabilities are unknown to the voters and require endogenous cognitive abilities and endogenous signal processing: we demonstrate that choice under uncertainty tends to drive away voters. The experimental setup considers both spatial and non-spatial components of voter utility and their contextual conditions to bolster external validity and arrive at more internally and externally valid assessments of vote choice under various "states of nature".

1. Introduction

In politics, parties and voters are said to value *clarity* and *certainty*. Precise policy positions and clear party signals are fundamental prerequisites for substantive programmatic competition, for the provision of discernible electoral alternatives, and for the creation of meaningful political choice. Likewise, a competent, interested, and well-informed electorate should be able and willing to evaluate alternative political platforms in order to facilitate legitimate and transparent chains of political delegation and representation (Berelson, 1952; Schattschneider, 1960).

In political science, theoretical and empirical contributions to the spatial modeling tradition usually assume full and common information: parties are supposed to adopt and lay out clear and consistent standings. In turn, voters are considered fully informed about spatial positions, to compare choice alternatives with their personal ideal points, and expected to evaluate the utility of competing platforms accordingly. But what happens when these idealized conditions no longer hold, when parties cannot assume or do not lay out precise positions? What happens when political communication gets noisy, when voters are unable or even unwilling to receive and process political information?

This study suggests and evaluates a series of survey experiments that explore how voters react to violations of the idealized state of full information and choice under certainty. The basic idea draws upon Frank H. Knight's (1921) essential distinction between three "states of nature": *certainty*, *risk*, and *uncertainty*. This extension to conventional choice theory explores how rational actors deal with limited information and how they consider risk or uncertainty when they select a specific action, i.e. when they cast their vote for one party or the other. This crucial distinction features prominently in behavioral economics, microeconomics, decision theory, and psychology (cf., among many others, Just, 2014; Varian and Melitz, 2023; Wakker, 2010). However, it has not been widely applied in political science, especially not in the field of spatial voting research (but cf. Alvarez, 1998, esp. 25–51 and McCarty and Meirowitz, 2007, 51-53 as notable exceptions).

Because the differentiation of choice under *certainty*, *risk*, and *uncertainty* is that central to the argument, it is useful to briefly define these states of nature in the introduction: choice under *risk* implies that a voter does not precisely know the party placements in some competitive dimension. However, the voter does know the set of potential positions taken by each party and their respective probabilities. Both in real-world settings and their experimental representations, risk thus comes with at least some structure. For example, candidates or parties may choose to blur their ideological or policy positions and strategically transmit vague, unclear signals. Party elites may hope to broaden their appeal and attract less informed, generally optimistic, or risk-acceptant voters. These motives are well established since Downs (1957, 136) laid out the foundations of the spatial model; "parties are trying to be as ambiguous as possible" to "increase[s] the number of voters to whom a party may appeal." In previous decades, centrist catch-all parties have benefited from these strategies and have often been praised for organizing political integration and moderation (cf. Somer-Topcu,

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2015; Lehrer and Lin, 2020; Lefevere, 2024; Lin and Lehrer, 2021; Tomz and Van Houweling, 2009).

Choice under risk, with common probabilities attached to all elements in the choice set, may be considered a special case of the far more complex and unstructured choice under *uncertainty* (cf. Wakker, 2010, 48-51). In this state, the voter does not know the elements of the choice set for sure (here: the range of potential party positions), and/or she is unable to attach meaningful probabilities to these elements or positions. This more contingent setting also involves subjective signal processing. Uncertainty is amplified when voters lack the resources or even the motivation to acquire or process political information. For example, party unclarity may be much more consequential when political opponents or the media frame or misrepresent party communication, when voters fail to attend to basic media contents, or when (at least) parts of the electorate lack the cognitive capacities to extract meaningful information from campaign signals or media content (Achen and Bartels, 2016; Converse, 1964; Lupia, 2016).

In line with Alvarez (1998, 27-30), Bräuninger and Giger (2018, 3-4), and Lefevere (2024, 335, 339), we argue that the differentiation of party unclarity and voter uncertainty is crucial for the study of electoral choice. These different states of nature are not only theoretically relevant. They also require different translations to formal and statistical models, different representations in experimental settings, and they are hypothesized to come with different implications for empirical electoral behavior. But to date the spatial voting literature has almost exclusively assumed full information and choice under certainty. Following the seminal contribution by Shepsle (1972), extensions to these idealized assumptions have, if at all, been evaluated and formalized as choice under risk. However, we do not believe that this representation is sufficient to evaluate empirical, real-world settings of vote choice and party competition. We build upon the key experimental study by Tomz and Van Houweling (2009) to replicate and extend their findings concerning voter indifference towards risk. The core contribution of this study is to move beyond choice under risk and to reintroduce the notion of choice under uncertainty into the spatial model of electoral competition and vote choice.

The empirical results highlight the significance of discerning party unclarity and voter uncertainty or, respectively, choice under risk and choice under uncertainty. We demonstrate that voters are indifferent towards choice under risk, that is, they do not systematically prefer precise over unclear party positions. This finding is in line with the results by Tomz and Van Houweling (2009) and suggests that voters are generally risk-neutral. The experimental design also shows that the provision of choice under risk does not impair electoral performance. In contrast, we find that choice under uncertainty systematically depresses voter utility and drives away sizeable parts of the electorate. These findings suggest that the distinction between risk and uncertainty is not only conceptually and theoretically relevant but also consequential for vote choice.

2. Three states of nature: Certainty, risk, and uncertainty

This research compares vote choice under three "states of nature" defined by three different informational environments: *certainty*, *risk*, and *uncertainty*. While this three-fold distinction is well-established in microeconomics and psychology (Just, 2014; Varian and Melitz, 2023; Wakker, 2010), there is no universal consensus on its benefit in electoral studies (but cf. Alvarez, 1998, esp. 25–51 and McCarty and Meirowitz, 2007, 51-53). In spatial voting research, Shepsle (1972, 559; emphasis in original) has suggested dismissing this differentiation and instead folding all of the above dimensions into one standard model of choice under risk:

> We have argued that the three-part distinction [..] is, for our purposes, somewhat artificial and [..] we may conceive of all contingencies as falling under the rubric of risk – a known probability distribution over outcomes. [..] *Let us reiterate that we always mean risk*.

Nonetheless, in realistic settings and models, party elites cannot simply *set* commonly known probability distributions over their ideological or policy positions. They may attempt to do so, but they must also navigate complex and volatile electoral environments. They must respond to framing and other strategic moves by their competitors, factor in non-policy issues such as candidate quality or internal party divisions, and they must successfully predict voter behavior. In turn, voters do not and cannot *see* or *know* common distributions over likely spatial positions. Each voter is instead required to subjectively process political communication and extract (ideally) unbiased party signals. To some extent, voter perceptions of party strategy will necessarily be error-prone, heterogeneous, idiosyncratic, and subjective.

Choice under risk emerges at the party level

Further complicating an already complex terminology, the deployment of key terms in the spatial voting literature differs from the vocabulary used by neighboring disciplines. Downs (1957, 136) originally discusses potential winning strategies by "ambiguous" candidates. The formalization of these ideas by Shepsle (1972, 559) applies the label "strategy of ambiguity" when candidates or parties present blurred, contradictory, fuzzy, or vague positions to attract risk-acceptant voters. A series of subsequent publications stick with the label "ambiguity" but almost exclusively specify models of vote choice under risk (cf. the conceptual and theoretical work by Alesina and Cukierman, 1990; Aragones and Neeman, 2000; Asako, 2019; Callander and Wilson, 2008; Jensen, 2009; Meirowitz, 2005; Kernell, 2016; Page, 1976 and the empirical studies by Bräuninger and Giger, 2018; Cahill and Stone, 2018; Nasr, 2023; Nyhuis and Stoetzer, 2021; Tomz and Van Houweling, 2009).

Instead, in cognitive psychology and behavioral economics, choice under "uncertainty" and choice under "ambiguity" actually mean the very same thing and are used interchangeably. So as to address these inconsistencies and to avoid unclear and contradictory terminology, we eschew writing about "party ambiguity" and instead use the label party "unclarity" whenever candidates or parties fail to or prefer not to develop or communicate precise and transparent ideological or policy positions.

The existing literature has often described candidates or parties as strategic actors that deliberately blur positions to increase their electoral appeal. Parties may therefore transmit broad, unclear messages to make potential supporters underestimate the ideological or policy distances towards their respective positions. Some simple spatial calculus illustrates that political elites effectively face incentives to field unclear platforms whenever at least parts of the electorate are risk-acceptant. These voters are inclined to reject a crisp party position p instead of a fair lottery over a range of potential party positions that, on average, yield the same utility. (The theorems in the online appendix are also developed or reported by Shepsle, 1972 and the subsequent contributions by Alvarez, 1998, 30-41; Bartels, 1986, 712; Callander and Wilson, 2008; Enelow and Hinich, 1984, 115-129.)

The "Neo-Downsian" modeling tradition has consistently considered voters risk averse. This decision is also reflected in formal models of electoral competition (cf., instead of many others, Davis et al., 1970; Enelow and Hinich, 1984; Ordeshook, 1986). However, we believe that voter attitudes towards risk should not be taken for granted or decided by considerations of mathematical convenience. Instead, we argue that the assumption of risk aversion is a theoretical and empirical question that needs to be addressed in empirical research. The spatial voting literature has often assumed that voters are risk-averse, but this assumption is not universally valid. Voters may be indifferent towards choice under risk, or they may even prefer the provision of choice under risk over crisp party positions. From this perspective, recent empirical work has convincingly refuted the assumption of consistent, general risk aversion. Voters, on average, appear to be indifferent rather than

averse to risk (Degan and Merlo, 2009; Eguia, 2012; Grynaviski and Corrigan, 2006; Tiemann, 2019).

Based on these theoretical insights and robust empirical evidence, we expect that voters are commonly risk-neutral and not repelled by the provision of choice under risk:

Hypothesis 1 (*Indifference to Risk*)**.** Voters do not systematically prefer precise over unclear party positions.

Choice under uncertainty emerges at the voter level

If, when, and how party unclarity carries over to voter uncertainty depends on the cognitive resources held by each individual, their informational environment, and the provision of alternative heuristics or cognitive shortcuts. Even with fully transparent party communication, some voters lack the interest and/or the resources to receive and process campaign messages or media content. The electoral studies literature has lamented that many citizens, survey respondents, or experimental subjects cannot identify the salient dimensions of political competition, do not know their personal ideal points, and are not aware of the positions laid out by candidates or political parties. A sizable segment of the potential electorate appears not to care about electoral politics at all (cf. the evidence presented by Achen and Bartels, 2016; Campbell et al., 1954, 1960; Kinder and Kalmoe, 2017; Lau and Redlawsk, 2006).

Therefore, voter uncertainty is affected by the clarity of party signals presented to them, by individual exposure to party messages, by cognitive capacities to process these messages, and by a whole range of other, idiosyncratic features. For example, the clarity of party positions is not only a function of the party's communication strategy but also of the informational environment in which parties operate. The media may misrepresent or misinterpret party communication. Especially in the contexts of election campaigns and heated electoral contestation, political communication resembles a complex and noisy process. Information is never common, complete, or consensual. Instead, voters are often exposed to conflicting information by deeply polarized media outlets, framing and misrepresentation by their political competitors or opponents.

Generally, parties have only limited means to directly communicate with the electorate and persuade potential voters. The share of voters that attend rallies in a campaign or directly engage with party manifestos or other campaign material is rather small. Instead, most voters are exposed to party communication through the media. The media comment on party positions, their clarity, and their consistency. Therefore, one of the key challenges in the design of the survey experiments is to develop vignette treatments that resemble real-world, media-driven communication processes.

In decision theory, aversion to uncertainty means that actors prefer known risk to unknown risk. In political science, recent applications to spatial calculus have shown that voters are systematically repelled by party-level unclarity (cf., among many others, Shepsle, 1972; Tomz and Van Houweling, 2009; Somer-Topcu, 2015) but are driven away by individual-level voter uncertainty (cf. Alvarez, 1998). Moreover, the representation of uncertainty by experimental treatments requires the consideration of its causes which may affect the non-spatial part of voter utility:

Hypothesis 2 (*Aversion to Uncertainty*)**.** Voters are repelled by uncertainty about ideological or policy positions. Voter uncertainty tends to depress both the spatial and the non-spatial components of the voter's utility function.

2.1. Towards a conceptual framework

Table 1 wraps up key features that characterize choice under certainty, risk, and uncertainty. Note that throughout the text, p labels a precise party position, p' an unclear party position, and p'' a party that is observed with individual-level uncertainty. These different states of nature that define the informational contexts of electoral choice also require different conceptual representations within the applied research design(s). Electoral studies within the spatial voting tradition have predominantly focused on party-level unclarity (mostly labeled "ambiguity") and choice under risk (summarized the review article by Lefevere, 2024). Far fewer studies have explicitly addressed vote choice under individual-level uncertainty (cf. the comprehensive discussion by Alvarez, 1998).

Empirical studies have most frequently concentrated on formal theory or utilized observational data from standard election surveys. In contrast, experimental designs, which facilitate a more direct and unbiased isolation of causal effects, are surprisingly rare. Notably, the key study by Tomz and Van Houweling (2009, 87) uses a survey experiment to explore whether voters are attracted or repelled by the provision of unclear policy positions. The authors present their subjects with graphical representations of unidimensional policy spaces. They frame spatial candidate positions by evaluations from the outside and inform their subjects that the placements of two unbranded choice alternatives (labeled A and B) were taken from a survey by a "non-partisan" group. Focusing on examples from health and education policy, Tomz and Van Houweling (2009, 87) require their subjects to choose between a precise candidate with a crisp location and an unclear alternative that is characterized by a range of (three) interconnected scale points or a symmetric distribution over its mean positions or "certainty equivalent" (Wakker, 2010, 15).

Moreover, Tomz and Van Houweling (2009, 90) primarily discuss (strategic) candidate or party unclarity and apply a framework of vote choice under risk. Therefore, the authors exclusively examine the impact of party unclarity on spatial calculus, i.e. the spatial component of the voter's utility function. They take great care to avoid any pejorative framing and to mask any reference to the (potential) causes that create unclarity. Their empirical findings indicate that voters are not generally risk-averse, do not tend to be driven away, and may even be attracted by candidate unclarity.

There are only few adjacent studies that explicitly focus on the effects of party unclarity and build upon, extend, modify, or probe the robustness of the experimental design by Tomz and Van Houweling (2009). More recent work by Nasr (2023) seeks to distinguish between four different kinds of party unclarity: vagueness, ambivalence, flip-flopping, and negative messaging. Crucially, this study differs in the mode of the experimental presentation of precise and unclear party standings: instead of assuming an observer's perspective and examining communication *about* parties, Nasr (2023) focuses on direct communication *by* parties and exposes his subjects to programmatic party statements on European integration that differ in their clarity along the four dimensions. His study is able to utilize representative samples that comprise $N = 22{,}000$ subjects from fourteen European countries. Nasr (2023) finds that the effect of party unclarity on vote choice depends on the type of unclarity and the context of electoral competition. His empirical results highlight that unclear party rhetorics may be a winning strategy across numerous contexts.

In the subsequent section, we propose a research design that addresses these imminent gaps in the literature. We construct a series of survey experiments that build upon the experimental design by Tomz and Van Houweling (2009). First, the intention is to replicate their key results concerning vote choice under risk with a different sample from a different country, and with a different representation of the political space. Secondly, we intend to compare these findings with the more unstructured and volatile state of choice under uncertainty. These two states of nature are also linked to two alternative, different

Table 1
Determinants of the three states: Certainty, Risk, Uncertainty.

	Certainty	Risk	Uncertainty
knowledge	full information: crisp positions p	party unclarity; common probabilities p'	voter uncertainty; unknown probabilities p''
information context	no unclarity; no uncertainty	assigned unclarity (e.g., p'); "objective"	inferred uncertainty (e.g., p''); subjective
level	none	party level	party and voter levels
experimental representation	**visual:** single point e.g., $p = 2$	**visual:** point range p' $\in \{p_{-1}, p, p_1\}$	**textual:** vignette
theoretical implications	proximity voting	proximity voting; no aversion to risk	proximity voting; aversion to uncertainty
expected utility comparisons	$E\,[u(v, p)]$	$E\,[u(v, p')]$ $= E\,[u(v, p)]$	$E\,[u(v, p'')]$ $< E\,[u(v, p)]$

representations in our choice experiments: choice under risk emerges at the party level when candidates or parties blur their policy positions to (strategically) transmit vague or unclear signals. We translate this setting into the experimental design through visual displays of choice alternatives on a single dimension of political contestation. While precise parties are characterized by crisp scale points, unclear alternatives are represented by a range of three interconnected scale points.

In contrast, choice under uncertainty emerges at the voter level. This more complex state may also be inflated by party unclarity, but it is also driven by complex idiosyncratic factors such as exposure to campaign messages, informational and cognitive resources, framing and misrepresentation by political opponents or the media. Note that in this complex state, voters are not able to attach (objective) probabilities to some range of potential party positions. This additional complexity also comes with consequences for the conceptual representation of choice under uncertainty in the series of experiments. We translate this setting into the experimental design through textual vignettes that describe the uncertainty of party positions and, in addition, also indicate specific causes that contribute to and create voter uncertainty.

3. A strategy for studying certainty, risk, and uncertainty

The deployment of a survey experiment is an appropriate conceptual choice because the study of vote choice under risk or uncertainty has frequently been hindered by conceptual and methodological concerns. Observational studies based on standard survey material have frequently been burdened by measurement problems and hampered by endogeneity concerns. These studies often arrive at widely contradictory empirical assessments.

We have designed an online questionnaire with a series of embedded survey experiments that was administered by the German polling organization "Respondi" (https://www.respondi.com). Before fieldwork, the questionnaire, hypotheses, and research design were preregistered with the "Open Science Foundation" (https://osf.io/). The data collection was conducted in early February 2021. We obtained a representative sample of $N = 1,593$ eligible German voters. (Additional details on the fieldwork, the sample, and the preregistration are given in the online appendix.)

Constructing the issue space and party alternatives

The representation of choice under risk borrows from and replicates the seminal study by Tomz and Van Houweling (2009). The authors focus on salient policy issues and present voters with two alternative platforms that to different degrees suggest limiting or expanding government services in health or education. Half of the subjects are presented with unbranded candidates A and B. The other half encounters identical platforms that are labeled "Democrat" and "Republican". Precise candidates are assigned a point estimate, unclear candidates are assigned a range of three interconnected scale points.

But the present study also departs from the design by Tomz and Van Houweling (2009) in two important ways: first, we do not focus on a single substantive policy scale but instead explore the effects of vote choice on the abstract left–right dimension. This decision is motivated by the fact that the more encompassing ideological dimension is the most widely used and most salient domain of political competition in Germany and many other democracies. Voters apply party and media communication concerning the labels "left" and "right" to navigate complex informational environments created by a battery of single issue positions. Voters may be more inclined to cope with party unclarity on an encompassing, abstract left–right dimension than on a specific issue scale. However, many voters will not be able to identify the precise positions of parties on many individual policy scales. The focus on left–right ideology also allows us to circumvent the problem of diverging issue salience across (groups of) voters. It also enables us to test whether the hypotheses of risk neutrality and uncertainty aversion extend to both policy scales and ideological dimensions.

Secondly, to guard against the inflation of potential scenarios, we limit the number of electoral competitors to two although we rely on German subjects, that is, on voters who are used to multiparty electoral competition. With these conceptual decisions and backgrounds, we do not and cannot rely on branded candidates or parties but instead apply unbranded labels A and B to the electoral competitors. This decision enables us to focus on binary party choice and to remove potential confounding effects of party brands or party names.

Throughout the sequence of experiments, voter ideal points are given by self-placements on an ideological dimension ranging from left (1) to right (11). In all subsequent analysis and experimental scenarios, we maintain this scale to represent the self-placements of individual voters and the positions assigned to precise (v_i), unclear (p'), or uncertain parties (p''). For the empirical sample at hand, the ideological self-placements yield a unimodal and only slightly left-skewed distribution (with median $\tilde{v}_i = 6$ and mean $\bar{v}_i = 5.59$).

Five consecutive choice experiments

The experimental section presents each of the 1593 respondents with a series of five consecutive, stylized scenarios that facilitate both within and between-voter comparisons. Each experiment is implemented in a forced-choice format: every subject needs to select one option to proceed with the questionnaire. Throughout this series of experiments, two unbranded alternatives A and B stand for election. In all but the baseline scenario of choice under certainty, only one party (p) assumes a precise position. The other is assigned an unclear position by a range of three scale points (and labeled p') or is rendered uncertain by applying a textual vignette (labeled p'').

For the subjects, reviewing and responding to five experimental settings in a row is a demanding task. To ensure the full attention of the subjects to the more complex scenarios established by the textual

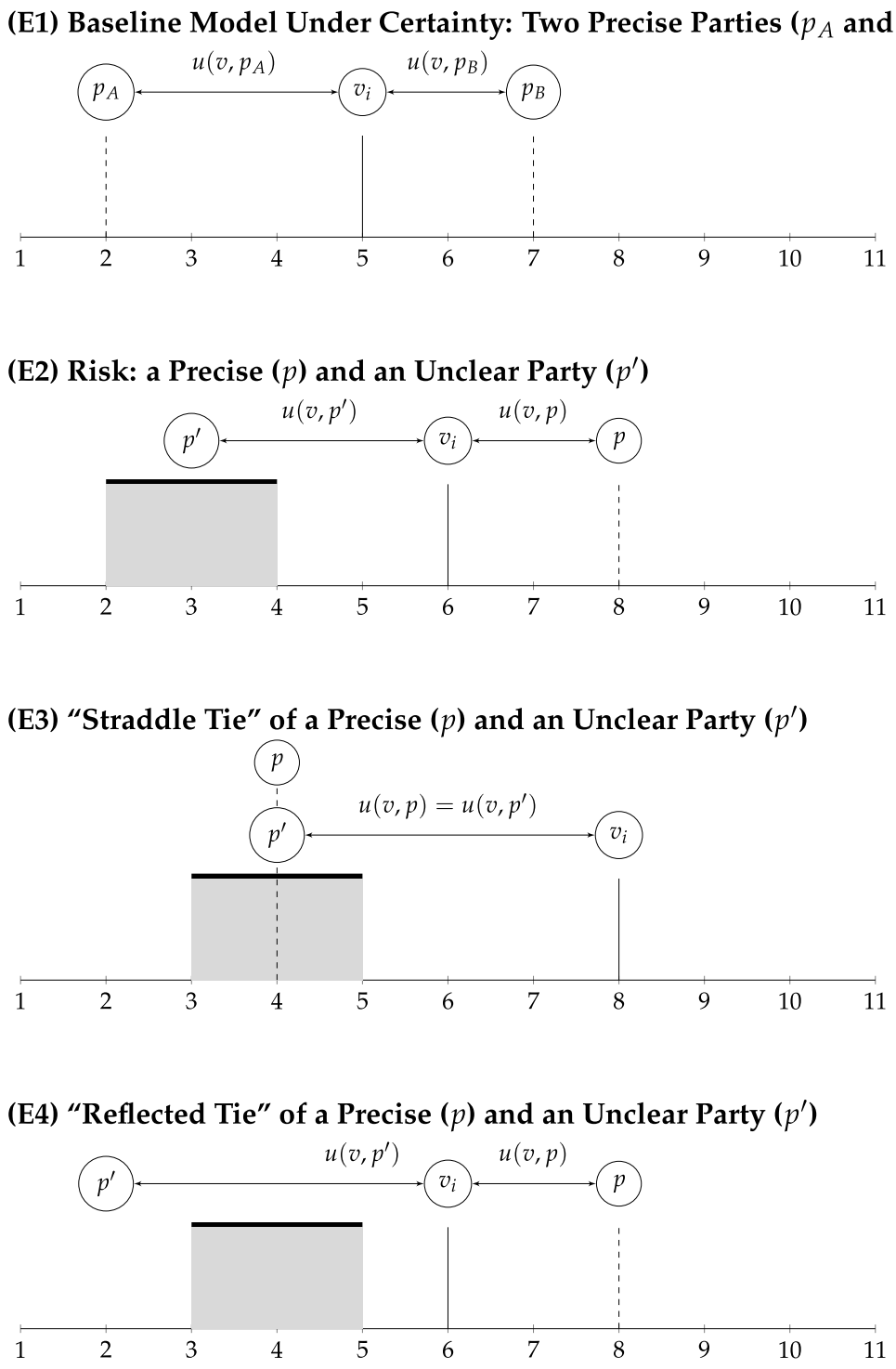

Fig. 1. Four scenarios of choice under certainty and risk.
Notes: v_i is the self-reported voter ideal point on the ideological scale from "left" (1) to "right" (11), p_A and p_B (or p and p', respectively) are randomly assigned party positions. The values in this Figure are selected for illustration only and do not come with any conceptual or theoretical implication. Experiment one (E1) characterizes spatial competition of two precise parties A and B; in experiments two to four (E2-E4), a precise party p and an unclear party p' compete. The thick horizontal bar and the gray-shaded area indicate that the representation of party unclarity ranges over three interconnected scale points.

vignettes in experiment five, we presented these settings first. We only then moved on to the more accessible visual representations of experiments one through four. For the presentation of the key findings, we have changed that order. We begin with the simplest, most idealized settings of choice under certainty (E1), advance towards choice under risk (E2 to E4), and conclude with the more complex settings that also address choice under uncertainty (E5).

Next, we present the experimental design and the rationale behind each of the five experiments. The first four experiments are also visualized in Fig. 1:

E1: The initial experiment one is designed to validate the spatial framework and assess vote choice under certainty. Throughout, voter ideal points v are identified by self-placements on the

eleven-point left–right scale. Two precise alternatives A and B are each represented by a dot on the centered left–right scale, and potential locations are drawn from a uniform distribution ranging from 2 (left) to 10 (right).

E2: Experiment two introduces party unclarity and choice under risk. Here, one of the options, either A or B, is rendered unclear and, instead of a crisp scale point, is represented by a line that stretches over three scale points. The center of the three-point range indicates the certainty equivalent of p': $C[p'] = \overline{p'}_{i,j}$.

E3: The third experiment offers another, even more straightforward perspective on choice under risk. Again following Tomz and Van Houweling (2009), I eliminate spatial utility differences by constructing a "straddle tie" and locating A and B (or p and p', respectively) at identical positions.

E4: Experiment four continues with choice under risk and the construction of spatially tied scenarios. In a reflected tie, the voter is positioned exactly between the precise and the unclear choice alternative. In this scenario, the positions of A and B cannot be randomly drawn, but need to be calculated based on the voter ideal points: one party is moved two units to the left, the other is located two scale points to the right of the voter v. The elimination of utility differences among the choice alternatives comes with a cost and forces us to focus on centrist voters. To facilitate the potential construction of three-point ranges for unclear parties with positions or certainty equivalents $C[p']$ that are located two points to the left or right of the voter ideal points v_i, we can only continue with a subset of centrist voters ($v_i \in [4, 8]$).

E5: In the fifth experiment, we randomly split the sample into four different groups. In contrast to the previous experiments, the precise, unclear, and uncertain options are all introduced by textual vignettes.

E5,1: The first subgroup ($N = 395$) considers choice under certainty. Here, we do not show any visualization but characterize two precise parties A and B by textual vignettes that verbally characterize their position on the left–right scale.

E5,2: For the second subgroup ($N = 396$), we introduce choice under risk. This group is presented with two vignettes, but one of them is rendered unclear by mentioning that its left–right position stretches across three scale points.

E5,3: In the next subgroup ($N = 395$), we advance from choice under risk to choice under uncertainty. Party p is characterized by a textual vignette that indicates a crisp position on the left–right scale. The second party p'' is perceived with uncertainty: the vignette describes a party that has been either "left-liberal" or "center-right" but has avoided taking any clear issue positions.

E5,4: The final subgroup ($N = 407$) is constructed similarly to the previous one. The experimental treatments differ only by the reason for the uncertainty of party p'': in this case, the vignette describes a party that is internally divided and affected by conflict between different camps.

4. The spatial model and indifference towards risk

We now discuss empirical evidence from the series of five consecutive experiments that are presented to the subjects. To probe the significance of the hypotheses on group differences, we apply a conventional frequentist framework. We utilize standard $|t|$-tests for the comparison and inferential evaluation of binary group differences. For each comparison, we indicate both the value of two-sided $|t|$-tests and the 95% confidence intervals (CI_{95}) for the respective proportions.

Establishing the spatial model: Choice under certainty (E1)

The first experiment establishes the baseline of choice under certainty (cf. the illustration in Fig. 1, E1). The placements of the two precise parties A and B are randomly drawn from a uniform distribution ranging from 2 to 10 on the centered left–right scale. Note that throughout the series of experiments, we prevent parties from being placed at the very margins of the ideological dimension to, if required, facilitate the construction of three-point ranges. Including ties with one of the two parties, the voter is positioned between A and B in about 50.3 percent of the cases. In 18.5 percent, both parties are located to the left, and in 29.7 percent, A and B are both to the right of the voter. Ultimately, in only 1.5 percent of all cases, the voter and both parties take an identical position.

The spatial model posits that intra-voter utility comparisons determine vote choice. The probability that an individual voter selects party B is given by the expected utility differences $E[u(v, p_B)] - E[u(v, p_A)]$. The results underscore the significant role of spatial calculus: with randomized, precise party placements and choice under certainty, 1345 of 1593, about 84.4 percent of the respondents, select the more proximate option on the left–right scale ($|t| = 37.89$; $CI_{95} \sim [83; 86]$). As expected, the probability of electoral choice is clearly and significantly linked with differences in expected utility.

Indifference towards risk (E2)

In the next step, we relax the assumption of full and complete information and explore whether spatial theory still applies when one of the parties adopts an unclear position and thus creates a state of vote choice under risk. In experiment two, we also randomly draw the left–right positions of party A and B from a uniform distribution ranging from 1 to 11. In contrast to E1, one of the parties is assigned a precise placement, and the other is rendered unclear. Instead of a fixed point, the unclear party is represented by a range of three scale points (cf. the graphical representation in Fig. 1, E2).

The empirical results strongly suggest that the subjects tend to be indifferent towards (the presentation of) risk: some 50.5 percent of the $N = 1,593$ survey respondents select the precise party p, and the remaining 49.5 percent favor the unclear option p' ($|t| = 0.42$; $CI_{95} \sim [0.47; 0.52]$). Compared to E1, the share of voters who select the most proximate option remains effectively constant at 83.9 percent ($|t| = 36.74$; $CI_{95} \sim [82; 86]$). Substantively, it does not matter whether a party takes a precise stand or whether its position is stretched out over three scale points and thus over more than a quarter of the left–right dimension. With unbranded choice alternatives and no further information beyond spatial party positions, the experimental setting suggests that unclear platforms are neither more nor less attractive to voters than clear, precise alternatives. Voters appear to be indifferent to risk (at least as framed in this visual representation).

Fig. 2 shows the impact of party unclarity and spatial proximity on vote choice. The x-axis shows the difference in expected utility $E[u(v, p')] - E[u(v, p)]$ between an unclear p' and the clear alternative p. The y-axis shows the probability of selecting the unclear over the clear party ($\Pr[v_i = p']$). We specify a standard logit model that relates the choice of the unclear party to intra-voter utility difference. The magnitude of the logistic regression coefficient on expected utility difference represents the utility a voter receives from selecting a party and the precision of spatial calculus. The predicted probabilities reveal that both variables are strongly related. Voters tend to select the precise party when $E[u(v, p)] > E[u(v, p')]$, but they go with the unclear alternative when $E[u(v, p)] < E[u(v, p')]$. With unbranded party alternatives and no additional information on A and B, the logistic regression intercept is about zero ($\beta_0 \approx 0$): with the limited information provided to them the subjects do not have any option to form valence judgments. Predicted probabilities of vote choice are equal for both the precise and the risky alternative when the utility difference is zero. (A standard tabular representation of the logistic regression results has been moved to the online appendix.)

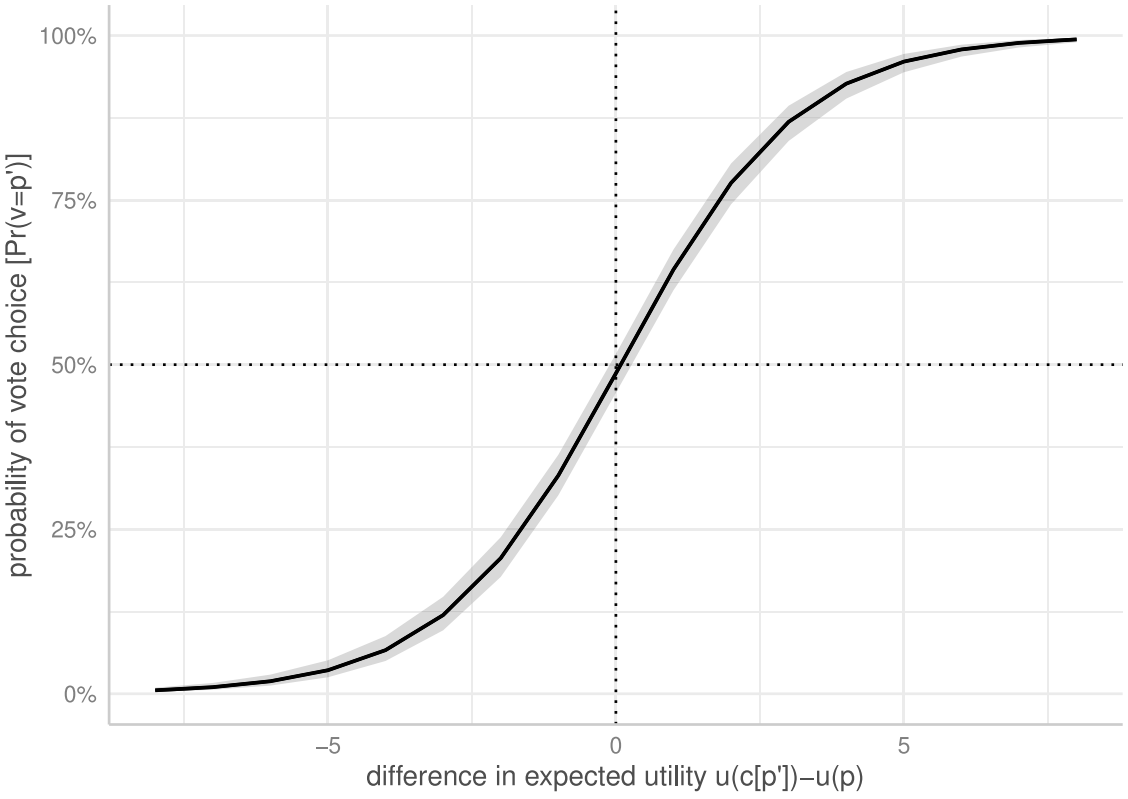

Fig. 2. Choice under risk (E2).
Notes: The horizontal axis shows utility differences $E[u(v,p')] - E[u(v,p)]$; the vertical axis displays the expected probability of selecting the unclear option p'; the solid line shows predictions from a binary logit model.

Intra-voter comparisons of certainty and risk (E1 and E2)

Concluding the discussion of experiments one (with a choice between two precise parties) and two (with the choice between a precise and an unclear option), we briefly evaluate the intra-voter perspective across the states of certainty and risk. For about half of the respondents, the party placements from E1 were maintained. For the other half, new random configurations of p_A and p_B were drawn. In either segment of the split sample, the subjects adopted a risk-neutral view, and the vote broke down evenly between the precise and the unclear platforms.

In sum, 793 voters were provided with identical spatial configurations of parties A and B in experiments one and two. This perspective enables us to control for all voter-specific features and for the effect of spatial proximity. The only difference is that one of the options, either A or B, is rendered unclear in experiment two. More than 84 percent ($|t| = 27.0$; $CI_{95} \sim [82; 87]$) of the voters in E2 did not respond to this treatment and adhered to their previous party choice. These voters appear to be primarily driven by spatial proximity but did not react to the states of certainty or risk. The vote switchers broke down almost equally: some seven percent were repelled by unclarity and switched to the secure option. About eight percent were attracted by unclarity and embraced the unclear alternative.

Spatial ties and the elimination of utility differences (E3 and E4)

Both straddle ties and reflected ties are designed to take spatial utility differences out of the equation. Therefore, the respective assignment of precise or unclear positions is the sole experimental stimulus in experiments three and four. Straddle ties, as displayed in Fig. 1, E3, assign identical positions to parties A and B. As before, the joint position of A and B is drawn from a uniform distribution. One option is presented as a precise and the other as an unclear platform. The empirical results reinforce the previous findings and reveal that the clarity or unclarity of any party platform is effectively inconsequential. Everything else being equal, 48.6 percent select the clear, and 51.4 percent vote for the unclear platform.

The careful analysis of experiment three also confirms a paradox advertised by Tomz and Van Houweling (2008, 90). Among the 1593 voters in the dataset, 148 were confronted with a scenario when their own ideal point coincided with the placement assigned to alternatives A and B so that $v_i = p = p'$. Still, only 51.5 percent ($|t| = 1.12$; $CI_{95} \sim [49; 54]$) of these voters select the precise option, and 48.6 percent chose the unclear party. However, when the ideal point of the voter and the position of a precise platform are identical, neither risk acceptance nor general optimism can theoretically explain the choice of a lottery over certainty. These subjects either applied some non-spatial decision rule, or they made an error. Substantively, these robust findings require me to look beyond conventional expected utility theory.

Reflected ties are a far more common scenario in electoral competition. This configuration emerges when the voter is equidistant from both party alternatives and located precisely between A and B. In experiment four, party positions are thus no longer randomly assigned but calculated from each respondent's ideological self-placement. I move A and B by two scale points to the left and, respectively, by two scale points to the right of the subject's ideological self-placement.

The straightforward construction of reflected ties comes with a price: given that we need to reserve a three-point range for the imprecise party and that the alternatives A and B are to be located two scale points from the voter ideal points, we can only continue with a smaller subset of centrist voters $v_i \in [4, 8]$. With a reduced number of 1248 subjects, the respondents continued to be indifferent to the provision of precise or unclear ideological platforms. Some 49.9 percent ($|t| = 0.06$; $CI_{95} \sim [0.47; 0.53]$) select the precise party, and 50.1 percent ($|t| = 0.06$; $CI_{95} \sim [0.47; 0.53]$) prefer the unclear alternative so that there is, with differences in spatial distance out of the equation, no

statistically significant difference in the choice of crisp parties p and unclear parties p'.

The results presented so far replicate key results presented by Tomz and Van Houweling (2008) and generalize their results from a policy space towards ideological competition. While we used a common ideological dimension instead of a (health) policy scale and applied different concepts to place the unbranded party alternatives A and B, voters are generally indifferent to party unclarity and unaffected by choice under risk. In other words, in the survey experiments, voters evaluate parties by spatial utility (differences). They do not react and do not modify their choice when one party is rendered unclear by assigning a visual treatment, by representing it by a three-point range instead of a crisp scale point.

Contrasting risk-neutrality and uncertainty-aversion (E5,1-E5,4)

Experiment five offers a more direct comparison of vote choice under the states of certainty, risk, and uncertainty. This extension requires us to rethink the construction of the choice experiments and to replace the visual representation of party unclarity by textual vignettes. First, we split the sample into four equal-sized, randomly selected subgroups (each roughly $N \approx 400$) that were confronted with alternative scenarios of choice under certainty, risk, and uncertainty (labeled E5,1 to E5,4). We demonstrate successful randomization by statistical tests for intergroup differences. We also show comparisons of the distributions of self-reported voter ideal points and key demographic features across the four subgroups. (Further details, distribution plots, and statistical tests are available in the online appendix.)

Second, the extension of the experiments towards the more common and realistic choice-under-uncertainty scenarios also requires the concomitant consideration of spatial and non-spatial components of voter utility. We argue that the assignment of unclear party positions without any reference to the underlying causes is neither a realistic scenario nor an acceptable modeling strategy. Vignettes are textual descriptions of voter uncertainty, and thus always include its causes. In this study, vignettes are designed to evoke specific sentiments and emotions that are likely to affect the non-spatial part of the utility function. When, for example, political parties are characterized as avoiding any clear policy statements or when they are portrayed as internally divided, this information may impact spatial calculus. However, this will also evoke positive or negative sentiment that enters non-spatial utility or valence.

Third, in experiment five, we do not draw party positions from a uniform distribution but instead contrast the parties A and B as "left-liberal" or "center-right" platforms. In all four subgroups, the vignettes verbally introduce a baseline, precise choice option that is assigned a left–right position by a textual vignette. We randomly assign the precise party to either a "left-liberal" or a "center-right" position:

> Party A [**alt.:** B] is known to be a moderate, left-liberal [**alt.:** center-right] actor. Its ideological placement is clearly and credibly located at 4 [**alt.:** 8] on the common scale ranging from "left" (1) to "right" (11). (Translated from the German questionnaire; cf. the online appendix for the original wording.)

The four vignettes differ only in the characterization of the party that competes against this baseline. These precise (E5,1), unclear (E5,2), or uncertain alternatives (E5,3 and E5,4) are designed as ideological mirror images. In each subsample, we pit a center-right against a left-liberal party and vice versa. Put differently, precise and unclear parties are both equidistant from the center of the left–right dimension (6). One alternative is assigned a moderate left position ($p = 4$), the other a moderate right position ($p = 8$). When one of the choice alternatives is rendered unclear (E5,2) or uncertain (E5,3 and E5,4), we ensure that the certainty equivalent is centered over the respective position as well ($C[p'^{(\prime)}] = 4$, $C[p'^{(\prime)}] = 8$).

Choice under certainty or risk (E5,1 and E5,2)

For the first subgroup, we construct a scenario of choice under certainty. We put a precise party against the baseline party. When the reference party is located at a left-liberal position (at 4 on the original left–right dimension), we ask the subjects to compare and contrast it with a center-right competitor (located at 8) and vice versa. In the experiment, among the 393 voters who have been randomly assigned to the first vignette, some 60.5 percent ($|t| = 4.27$; $\mathrm{CI}_{95} \sim [56; 65]$) indicate a preference for the left-liberal party at $p = 4$, and the remaining 39.5 percent ($|t| = 4.27$; $\mathrm{CI}_{95} \sim [35; 44]$) support the alternative center-right party at $p = 8$. Note that the sizeable, statistically significant difference between the precise options A and B is accounted for by spatial calculus. Ideological placements in the sample of likely German voters are visibly skewed to the left.

The second vignette replicates a scenario of choice under risk. We put an unclear party against the precise baseline option. The only difference to the previous vignette is that, instead of assuming a precise position, one of the parties is now rendered unclear by a textual vignette.

> Party A [**alt.:** B] is known to be a left-liberal [**alt.:** center-right] actor. However, there is some amount of unclarity concerning its current orientation. Campaign messages and policy proposals presented by the long-standing leadership indicate that it advocates policies somewhere at 3, 4, or 5 [**alt.:** 7, 8, or 9] on the left–right scale. (Translated from the German questionnaire; cf. the online appendix for the original wording.)

Notwithstanding this crucial modification of the choice experiment for the 396 subjects in this subgroup, the vote almost breaks down as before. Some 59.8 percent ($|t| = 3.99$; $\mathrm{CI}_{95} \sim [55; 65]$) would support the precise party p, and 40.2 percent ($|t| = 3.99$; $\mathrm{CI}_{95} \sim [35; 45]$) the unclear alternative at p'. Once again, the comparison of two randomly assigned treatment groups, which differ only by rendering one of the options unclear, does not produce any meaningful difference in average vote choice.

Choice under uncertainty (E5,3 and E5,4)

Subgroups three and four of experiment five advance from choice under risk towards the more encompassing choice under uncertainty. They also consider the non-spatial consequences of voter uncertainty. The construction of the survey experiments implies that the subjects are not just provided with ranges of potential party positions. Instead, the respondents are shown vignettes that require textual interpretation to figure out ideological party placements and their potential unclarity. Each vignette focuses on a stylized, potential source of voter uncertainty. While the left-liberal, secure party A continues to be located precisely at $p_A = 4$, the third vignette of the survey experiment modifies information available for party B:

> Party B [**alt.:** A] is known to be a center-right [**alt.:** left-liberal] actor. However, there is some uncertainty concerning its substantive position. During the campaign, the party leadership avoided taking positions on the salient dimensions of the campaign and did not comment on specific political intentions if voted into office. (Translated from the German questionnaire; cf. the online appendix for the original wording.)

This set of vignettes has been shown to 395 voters. 74.9 percent ($|t| = 11.42$; $\mathrm{CI}_{95} \sim [71; 79]$) now select the precise party, and the uncertain alternative is only chosen by 25.1 percent ($|t| = 11.42$; $\mathrm{CI}_{95} \sim [21; 29]$). This marks a considerable shift from the previous findings. Voters are not repelled by choice under risk but are systematically driven away by choice under uncertainty. Potential explanations may be derived from an analysis of non-spatial utilities.

When the set of potential party positions is no longer confined to a range of specific scale points, the uncertain platforms can be located anywhere on the right-hand side. Because we use unbranded party labels such as A and B, the voter lacks sufficient heuristics to narrow down potential party placements. In addition, silence about essential ideological or programmatic standings also comes with non-spatial consequences. Some voters may consider it evidence for flexibility or tactical finesse. Others evaluate this as a lack of principles, an excess of tactical strategizing, or the general failure to suggest meaningful solutions to defining issues of daily politics.

Everything else being equal, the fourth vignette explores another source of voter uncertainty, which is induced by a narrative of internal party division:

> Party B [**alt.:** A] is known to be a center-right [**alt.:** left-liberal] actor. However, there is some uncertainty concerning its substantive position. After internal struggles, a truce between different ideological camps has been brokered. However, it is still not clear whether the right-liberal or the conservative [**alt.:** left-liberal or the socialist] camp will prevail after the elections. (Translated from the German questionnaire; cf. the online appendix for the original wording.)

Among the 407 subjects shown this vignette, as many as 70.8 percent ($|t| = 9.20$; $CI_{95} \sim [66; 75]$) opted for the precise, and only 28.2 percent ($|t| = 9.20$; $CI_{95} \sim [25; 34]$) accepted the uncertain party. These experimental results align with previous evidence, which often found that internal disunity is a key factor that may hurt parties significantly (Lehrer and Lin, 2020; Lin and Lehrer, 2021). While internal infighting somewhat clouds the spatial positions that are ultimately adopted in the aftermath of an election, these problems also affect non-spatial utility and valence. Internal division and infighting are often considered evidence of a lack of principles and organization.

5. Wrapping up: Risk, uncertainty, non-spatial utility

So far, I have analyzed each of the five sequential experiments in isolation. This section addresses the wider contexts and the non-spatial determinants of choice under risk or uncertainty. Conceptually, I focus on the empirical distinctions of vote choice under risk (E2-E4 and E5,2) and under uncertainty (E5,3 and E5,4). Concerning both unclear party platforms and uncertain voter perceptions, I utilize the respective certainty equivalents $C[p']$. For choice under risk, the certainty equivalent of an unclear party p' is assessed by the mean of a (symmetric) distribution that captures uncertainty: $C[p'] = \overline{p'}_{i,j}$. It is much more cumbersome to identify a certainty equivalent for parties that are perceived with uncertainty. The vignettes 3 and 4 in E5, which specify scenarios of choice under uncertainty, define party p'' either as a left-liberal or a center-right actor on the original scale from left (1) to right (11). I represent the certainty equivalent of these options with the average position in the center-right policy space so that, respectively, $C[p''] = 3$ or $C[p''] = 8$.

I apply multilevel logistic regression models to analyze the impact of spatial utility differences and the unclarity/uncertainty of party platforms on vote choice. The dependent variable is a binary choice variable that takes the value of one if the unclear (p') or uncertain party (p'') is selected and zero if the voter prefers the precise reference party p. The independent variables include the spatial utility difference between the unclear or uncertain party and the precise option ($E[u(v, C[p'])] - E[u(v, p)]$). They also include a binary indicator that separates choice under risk ($T = 0$) and choice under uncertainty ($T = 1$), and an interaction of both predictors.

The logistic regression coefficients $\boldsymbol{\beta}$ and the individual-specific constants μ are estimated from the data. I expect the probability of voting for the unclear or uncertain party to be a function of the spatial utility difference between the two options so that β_1 should be strictly positive. Secondly, I posit that, due to non-spatial and valence effects, parties that are presented as risky choice options do considerably better than parties that are perceived with uncertainty. Therefore, the binary treatment indicator is hypothesized to be large and negative ($\beta_2 \ll 0$). Thirdly, I posit that the alternative states of choice under risk ($T = 0$) and uncertainty ($T = 1$) affect the spatial part of voter utility. Voter uncertainty reduces the weight of spatial calculus so that the coefficient on the interaction term should be negative ($\beta_3 \ll 0$) (see Table 2). Ultimately, I expect the logistic regression intercept to be close to zero and statistically insignificant ($\beta_0 \approx 0$). In observational studies β_0 would often be interpreted as a valence differential between the two real-world options. However, in the controlled experimental study, the intercept is not meaningful because I only provide spatial placements of the two options. The different states of risk and uncertainty do affect valence but are captured by the treatment indicator T. Beyond these conditions, the subjects are not provided with any further information about the two parties that could be expected to drive a valence differential and thus affect the intercept. Finally, I also include a random intercept μ for each individual voter i to account for the fact that the same subjects are repeatedly observed in different choice situations. The multilevel logistic model can be summarized as follows:

$$\begin{aligned}\Pr[v_i = p'^{(\prime)}] = \text{logit}^{-1} \{ & \beta_1 \left[u(C[p']) - u(v, p)\right] \\ & + \beta_2 T + \beta_3 \left[u(C[p']) - u(v, p)\right] T + \beta_0 + \boldsymbol{\mu}\}\end{aligned}$$

For the empirical model estimation, I can only consider E2-E4 and E5,2-4, which include either an unclear or an uncertain party alternative. I thus focus on a subset of $N = 5,632$ choice situations nested in $N = 1,593$ subjects/voters. The reported coefficients convincingly confirm the significant effect of spatial utility differences. The larger the utility difference between unclear or uncertain parties and the precise alternatives, the higher the likelihood of selecting the unclear or uncertain option ($\beta_1 > 0$).

Secondly, the logistic regression coefficients for unclear and uncertain party alternatives differ considerably. The intercepts for choice under uncertainty $\beta_2 \approx -1.3$ (in models 1 and 2) entail that, in comparison to choice under risk, voter uncertainty and the provision of its causes reduce the electoral chances of a party significantly. Note that this difference directly captures the valence differential between choice under uncertainty and choice under risk. Thirdly, in model 2 the interaction term of spatial utility differences and the uncertainty binary is neither statistically nor substantively meaningful ($\beta_3 \approx 0$). Statistically, the AIC estimates and a likelihood ratio test convincingly demonstrate that the additive model 1 is to be preferred to the interactive specification in model 2. Conversely, the alternative provision of unclear or uncertain party alternatives does not affect the shape of the utility curves and spatial calculus in general.

Fig. 3 illustrates these findings and displays the choice probabilities that are associated with the previous models. With overlapping expected utility ($E[u(v, C[p'])] = E[u(v, p)]$), an unclear party is, everything else being equal, supposed to yield about 50 percent of the vote. In comparison with choice under certainty and risk, voter uncertainty

Table 2
Discriminating Risk and Uncertainty.

	Model 1 (additive)	Model 2 (interactive)
β_0: Intercept	−0.032 (0.031)	−0.032 (0.031)
β_1: $u(p') - u(p)$	0.652 (0.028)***	0.645 (0.032)***
β_2: Treatment (T)	−1.319 (0.102)***	−1.345 (0.116)***
β_3: $[u(p') - u(p)] * T$		0.031 (0.064)
AIC	6731.419	6733.181
Log Likelihood	−3361.710	−3361.590
Num. obs.	5632	5632
Num. individuals	1593	1593
Var. (random intercept; i)	0.040	0.040

Notes: The binary dependent variable indicates whether a subject selects the unclear or uncertain party alternative ($v_i = p'$). Coefficients are obtained from multilevel logit models based on E2-5.

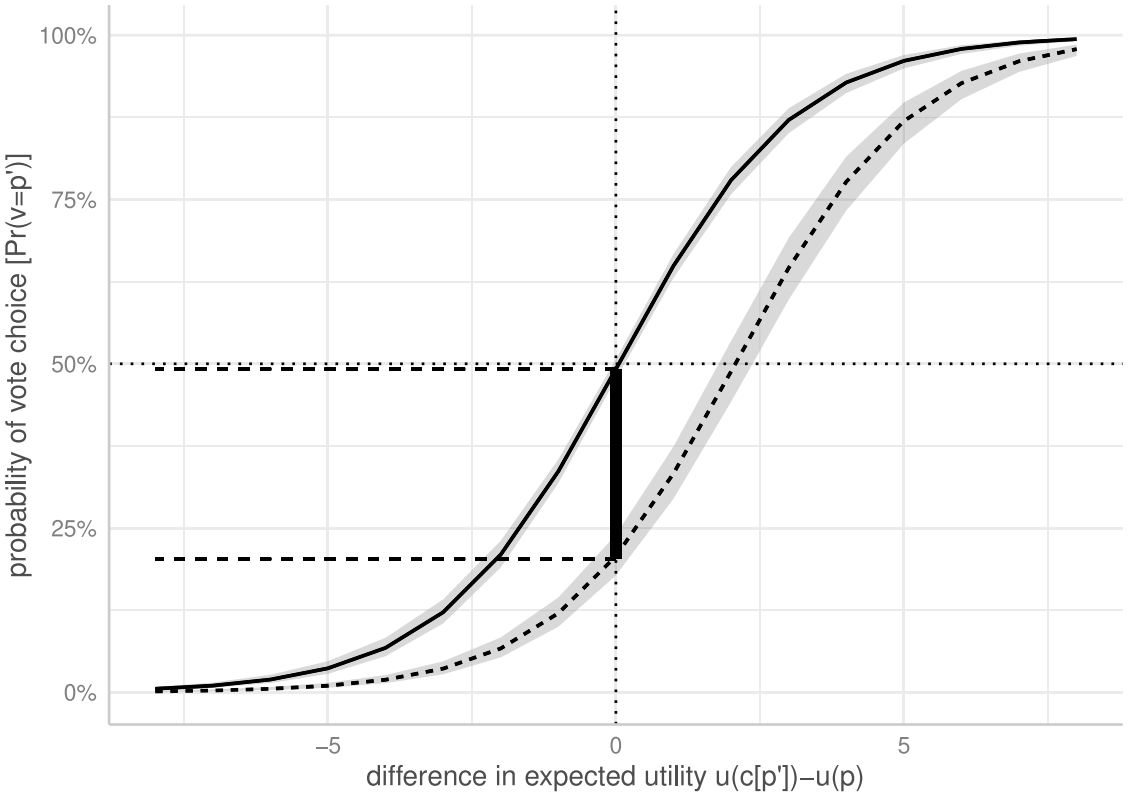

Fig. 3. Choice under risk vs. choice under uncertainty (E2-E5).
Notes: The horizontal axis shows expected utility differences $E[u(v, C[p'])] - E[u(v, p)]$; the vertical axis displays the expected probability of selecting the unclear p' or the uncertain option p''; the lines show predicted probabilities for choice under risk (the solid line) and uncertainty (the dashed line) and the respective confidence bands.

reduces this expectation to less than 25 percent. Conversely, only if the expected utility derived from the ambiguous alternative is two scale points larger, the vote is expected to break down about evenly.

Concerning comparisons of spatial calculus, the interaction of spatial utility differences with the binary variable that distinguishes choice under risk ($T = 0$) from choice under uncertainty ($T = 1$) are statistically insignificant and substantively meaningless. This also implies that the shape and steepness of the predicted probability curves, as drawn in Fig. 3, are almost identical, and the weight of the spatial utility component is not systematically affected by states of risk vis-à-vis uncertainty. These findings come with substantial consequences. Voters appear to worry much less about the spatial policy consequences that may come with unclear party signals or uncertainty in voter perceptions. Rather, voters appear to dislike the causes contributing to voter uncertainty *per se*. Voters do not desert uncertain options due to spatial calculus but due to judgments about party quality, integrity, or competence. In the series of experiments at hand, they are repelled when they are given information about the (strategic) silence of party elites or the unpredictable behavior of party factions. However, I hasten to add that the experimental design does not allow me to disentangle the spatial and non-spatial components of voter utility, and further systematic research is needed to clarify the effect of specific states of risk or uncertainty on the balancing of spatial and non-spatial utility.

6. Conclusion

In sum, the provision of unclear candidate or party standings does not appear to be a winning strategy per se. In the resultant settings of choice under risk, voters are neither attracted nor repelled by the assignment of unclear spatial positions. The more realistic scenarios of choice under uncertainty demonstrate that voter uncertainty, in conjunction with subjective signal processing and the evaluation of the parties' non-spatial utility components, tends to systematically discourage voters from supporting the (more) uncertain party alternative. The results also account for some opposing empirical findings in the literature: voters tend to be indifferent towards risk, but they tend to be repelled by uncertainty.

Voters are thus not repelled by risk when parties assume a well-defined range of scale points on an ideological or policy dimension. However, the experimental subjects do desert platforms whose positions they can only perceive with uncertainty. Choice options that were rendered uncertain by a set of randomly assigned survey vignettes dropped significantly in electoral support. Voters are repelled by uncertainty when they do not know the range of potential outcomes, lack any information on the likelihood of specific results, and need to infer the utility of alternative platforms subjectively. Because voters may rarely decide without some effort in information processing, I believe that further studies should concentrate on these more realistic scenarios of choice under uncertainty.

In addition to the specific considerations of risk or uncertainty, another crucial distinction pits spatial and non-spatial utility components. The simple ascription of risk to some stylized, unbranded party labels results in a sterile environment that lacks external validity. Naturally, more meaningful characterizations of risk or uncertainty simultaneously affect spatial, non-spatial and valence components of voter utility. For example, the failure to adopt specific policy positions does not only becloud ideological standings and policy positions, but it also enters non-policy utility in either a favorable or a negative way. Future research, both with experimental and observational data, should more systematically discriminate among the electoral effects of various non-policy variables.

I think these findings advance and extend experimental research on spatial voting theory. While the primary interest of this contribution was to connect with the established record and to propose the above

extensions, several additional questions could be and should be addressed by future research: For example, the spatial model needs to be extended to explicitly cover more than two candidates or parties and more than one dimension. Second, the series of experiments could also be extended to address additional permutations of choice under risk and uncertainty and to more systematically cover additional factors that create scenarios of choice under uncertainty. Third, the applied treatment effects cannot and should not be evaluated in isolation. Instead, conjoint experiments provide a promising tool to evaluate the impact and the interaction of party unclarity and voter uncertainty with each other and the conditionality of these interactions.

I also think that party unclarity and voter uncertainty are relevant to studying the emergence of populist and radical right parties. These actors often take and/or are identified with extreme and precise positions on ideological scales such as left–right. In addition, they also advertise and communicate concise standings on a few policy dimensions that are central to their party messaging and electoral success. In contrast, the radical right often remains vague or silent on other issues that should be, have been, or still are salient.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Guido Tiemann reports financial support was provided by Fritz Thyssen Foundation. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.electstud.2025.102972.

Data availability

Data will be made available on request.

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