What Drives Legislators' Information Behavior?[1]

An Eye-Tracking Experiment with Legislators

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Existing theoretical accounts on legislators' information behavior are eclectic. In one way or another, these accounts suggest that legislators use or ignore information based on its potential to solve a policy problem or enhance career prospects. We argue that these reasons do not represent triggers strong enough for an individual legislator to engage herself in the cognitive work necessary. Instead, we suggest that legislators have no substantial interest in policy-relevant information until their political intuitions are in conflict and fail to provide orientation. Only then does information search and use behavior precede judgments. If political intuitions are in line, information search and use are employed post hoc and provide arguments for the position that has been reached intuitively. To test the hypotheses that follow from this model on legislators' information interest, search, and use, we conduct an eye-tracking experiment with 56 legislators. Eye-tracking metrics highlight that if political intuitions are contradicted, legislators' interest in available information is more intense, their search behavior is less distorted, and available information is used differently during the deliberation process. We conclude that an intuitionist model of information behavior provides more plausible explanations for legislators' observed information behavior in the political arena.

Keywords: Legislators, Policy Information, Decision-making, Budgeting, Experiment, Eye-Tracking

INTRODUCTION

Legislators are exposed to an increasing magnitude of policy information. This has been ascribed primarily to a deeply rooted societal belief that "many of our most bitter political battles are mere misunderstandings. The cause of these misunderstandings? Too little information […]" (Klein, 2014). Based on this belief, we have continuously raised our expectations for policymakers to ground their judgments on factual evidence (Feldman & March, 1981; Weiss, 1983; March & Olsen, 1984; Shulock, 1999). The rapid growth of policy jobs inside and outside the government, the establishment of policy-related professional and academic journals, and the expansions of graduate education in this field provide some indication of the strong normative commitment to the notion of "intelligent choice." The so-called 'More Information Hypothesis' suggests that if policymakers and citizens were better informed about policy-relevant facts there would be less controversy and more consensus irre-

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spective of the topic subject – whether climate change, taxation, the allocation of public monies, or any other policy field.

As far as public budgeting is concerned, large parts of reforms have been devoted to the design and implementation of systems that link resources to public activities and their performance. The purpose of such systems is not only to compensate elected officials for the delegation of decision-making authority up to the street-level bureaucrat (Lipsky, 2010); the goal is also to influence the allocation of public monies (Pollitt, 2004, 2006a; Pollitt, Talbot, & Caulfield, 2004; Joyce & Tompkins, 2002; Curristine, 2005; Moynihan, 2006a). Scholars and practitioners alike agree that there is no simple model that can provide straightforward 'if-then-else' rules for budgeting. Yet, there is a more or less implicit consensus that "information should be on the table and easily accessible to all stakeholders when political decisions are made" (Hilton & Joyce, 2012, p. 482). Some authors observed, however, that most of the information provided to politicians is not used at all (Julnes & Holzer, 2001; Matheson & Kwon, 2003; Pollitt, 2008; Raudla, 2012; Ho & Coates, 2004). Only rarely does information of any kind serve as a substantial decision-making aid (Askim, 2007; ter Bogt, 2004; Askim & Hanssen, 2008). In the political arena, a selective consideration of evidence is more common that is often employed strategically to support partisan positions or to undermine those of political opponents (Weiss, 1983, 1989; Whiteman, 1985).

This paper is concerned with the reasons that motivate legislators to use or ignore policy information.[2] We present an alternative to current *rationalist models of legislators' information behavior*. It is based on the notion of cognitive work that must be employed by individuals when considering evidence. For various reasons, we conclude that the motives put forward by incrementalists, rational choice advocates, and institutionalists are unlikely to provide triggers strong enough for legislators to perform this work. To identify potent triggers, we suggest to consider policy issues as moral problems (Baron, 2003) that require moral judgments about which available options are good or bad with respect to the core beliefs shared by a particular political camp. A rich research tradition on moral decision-making suggests that such evaluations are preordained by intuitions (Haidt, 2001). We extend these findings and propose an *intuitionist model of legislators' information behavior*. It suggests that for most policy questions, legislators have no need for deliberation or new information to reach a conclusion. If required, reasoning and information gathering are post hoc and provide arguments for the position that has been reached intuitively. Given a policy issue, available evidence is used based on whether it makes sense according to what a legislator already knows. Substantial interest in policy information does not emerge unless political intuitions fail to provide a clear orientation due to contradictions. We suggest that these are the circumstances under which reasoning and information gathering precede individual judgment. They are employed by legislators in order to build a supporting case for each side of the contested issue until one conclusion begins to feel right.

To test the behavioral predictions of this model, we designed a randomized controlled experiment (Campbell & Stanley, 1963; Roth, 1995). Our two conditions confronted subjects with an allocation issue. We varied the specific value tradeoffs that subjects had to make and thereby manipulated the degree to which political intuitions conflict toward the given problem. In each condition, we monitored subjects' interaction with given information by using

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[2] Our analysis is primarily based on allocation decisions and therefore refers often to performance information. But the discussion applies to policy questions and policy information in general. We will therefore use these terms interchangeably.

an eye-tracking device. An eye tracker measures subjects' eye movements on a screen by recording fixations and movements from one fixation to another, so-called saccades. These metrics allow us to observe subjects' attention to what we provided and to test the influence of political intuitions on information behavior (Duchowski, 2007). Eye tracking is advantageous to approaches that rely on self-reported information use because it documents behavior while it happens. This is especially relevant given that subjects are not able to access the intuitive process of decision-making and to report how available evidence was considered (Nisbett & Wilson, 1977). The validity of the experiment was further increased by involving real state legislators from Switzerland. These subjects do not need special framing to produce political intuitions when facing our experimental allocation tradeoffs.

The results of this experiment provide supporting evidence for the implications of the intuitionist model of legislators' information behavior. Firstly, legislators' fixations indicate that *interest* in information is stronger and more enduring if political intuitions are in conflict. Secondly, information *search* is less limited if intuitions contradict; legislators scan more intensively for what is available, they are more willing to "travel" in order to find helpful evidence, and they put more effort in integrating the different pieces of information. Lastly, since we assume that individual information *use* at the time t affects information search in $t + 1$, the observed pattern of how information search evolves over time indicates two different types of information use by legislators depending on the agreement of political intuitions.

The remainder of this paper begins with a categorization of the theoretical knowledge available on legislators' information behavior. It provides an overview of the empirical material and evaluates the plausibility of existing explanations on why and how information is used by legislators. Next, we present the intuitionist model of legislators' information behavior and derive three hypotheses for the emergence of legislators' information need, search, and use behavior. Thereafter we report on the experimental design and the eye-tracking procedure before we present the study's results. We conclude by providing an interpretation of legislators' information behavior that differs from existing theoretical perspectives and highlight what this means for the design of future reforms that aim to foster more informed decision-making in legislatures.

THEORY AND RESEARCH ON LEGISLATORS' INFORMATION BEHAVIOR

Theoretical Accounts of Legislators' Information Behavior for Budgeting

In the field of public administration, theoretical understanding of what drives legislators' information behavior is eclectic. Current research draws propositions from principal-agent considerations, theories of organizational learning, political behavior, communication, and from institutional characteristics and individual factors (Askim, 2008; Demaj & Summermatter, 2012; Raudla, 2012). For example, legislators are presumed to use performance information as a means to alleviate asymmetries vis-à-vis the expert executive and to assess whether the benefits produced by administration services achieve the political goals and justify the costs (e.g., Banks, 1989; Askim, 2008). At other times, however, principal-agent considerations serve to portray performance information as a biased and untrustworthy decision-making aid (e.g., Calvert, 1985; Bourdeaux, 2008; Wang, 2008). There are optimistic views that suggest that legislators make use of such evidence as a kind of feedback mechanism for learning. Information is used to make more reasoned judgments about how well or poorly managers, departments, or programs perform in turning inputs into outputs and to generate possible action for improvement (e.g., Willoughby & Melkers, 2001; Melkers & Willoughby, 2005; Askim, 2007; Moynihan, 2005; Behn, 2003). More pessimistic accounts

suggest that legislators use any kind of information selectively, driven by opportunistic and strategic considerations of how to best highlight the success or failure produced by allied or opponent political actors (Julnes & Holzer, 2001; Pollitt, 2006a, 2006b; Johnson & Talbot, 2007; Hood, 2006). Yet others focus on the circumstances that would alter the mere probability for legislators to use information for budgeting such as the following: constitutional powers and the role of the parliament in the budget process (Cunningham & Harris, 2005; Bourdeaux, 2006); the fragmentation of the party system (Buylen & Christiaens, 2013); performance budgeting laws (Lu, Willoughby, & Arnett, 2009, 2011); the format of the budget document and whether it is input-, output- or outcome-oriented (Grizzle, 1986); the way in which the information is communicated to legislators (Weiss, 1989; ter Bogt, 2003, 2004; Curristine, 2005); the political salience of budget issues (Whiteman, 1985; Askim, 2007); and personal characteristics such as the educational background, party rank, political experience, familiarity with performance management systems, or the availability of personal resources such as time (Askim, 2009; Yamamoto, 2008).

Most of these approaches, however, are not theories of human information behavior *sui generis*. Instead, they owe their intellectual origins to one of three distinct perspectives on how change in public budgets occurs and deduce implications for how legislators deal with available evidence. Incrementalists, for example, view the budgeting process as a highly complex decision environment.[3] Out of necessity decision-makers therefore act "based on considerations of limited rationality" (Davis, Dempster, & Wildavsky, 1974, p. 421). They apply simplified decision rules that have been described as aids to calculation (Wildavsky, 1984), standard operating procedures (Kiewiet & McCubbins, 1985), rules of thumb (Cyert & March, 1992), or heuristics (Newell & Simon, 1972). Several characteristics of the budgeting process are held responsible for causing this behavior. Most importantly, the components of an overall budget are considered to be sufficiently independent from each other so that any direct competition among fiscal choices and budgetary priorities is blurred. As tradeoffs are implicit, this notion suggests that the legislators' need for information that compares actual or potential performance is limited (Gist, 1982). Moreover, agreements reached in previous budgeting processes cause decision-makers to accept a certain budgetary base for entities or programs. Changes in appropriations therefore occur only at the margins and are the result of negotiations among actors with narrow institutional role definitions[4] and interests to increase, decrease, or to maintain the current level of funding (Davis, Dempster, & Wildavsky, 1966; Wanat, 1974; Wildavsky, 1984). In an incrementalist world, the relationship between current and previous expenditures is claimed to be so intimate that the appropriations process is almost independent of external variables and is sometimes even described as nonpartisan and non-ideological (Fenno, 1966; Lowery, Bookheimer, & Malachowski, 1985).

Proponents of a rational choice conception of public budgeting refute two characteristics of the budgeting process as portrayed by incrementalists (Kamlet & Mowery, 1980, 1983, 1987; Auten, Bozeman, & Cline, 1984; LeLoup, 1978, 1988; Straussman, 1988). According to proponents of a rational choice perspective, first there is a close interdependence among the various components of an overall budget. This, in turn, creates competition and opportu-

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[3] There is no single concept of incrementalism, but various definitions based on the works of Charles Lindblom and colleagues exist for applications to the political decision-making process in general and of Aaron Wildavsky and colleagues for budgeting-specific choices. For an overview of the many meanings of incrementalism, see Berry (1990).

[4] Incrementalists define roles as "the expectations of behaviour attached to institutional positions" (Davis, Dempster, & Wildavsky, 1974, p. 419).

nities for choices – both in the beginning of the process between fiscal and budgetary priorities and later among various agencies and programs. Therefore, decision-makers pay attention to budgetary bases. Because choices exist, rational choice advocates are in favor of budgeting reforms that aim to create a strong link between government performance and budgeting decisions. The goal of performance budgeting reforms is to move the allocation of public monies "to a point where politicians fund more effective programs and reduce or reorganize less effective programs" (Moynihan, 2006b, p. 152).

Finally, for institutionalists the outcome of the appropriations process is neither fully a consequence of the interlocking of standard operating procedures nor of individual choices. From an institutionalist perspective budgetary changes are rather described as a martingale process (March & Olsen, 1984; Padgett, 1981; B. D. Jones et al., 2009). This notion accepts the incrementalist assumption that political behavior is deeply embedded in a structure of rules, norms, traditions, and expectations that radically limit the free play of individual preferences. But choices do occur, and although they are limited they play a pivotal role in directing the path ahead. Incremental decisions set the baselines for future choices and make the adoption of some options more likely than others. Over time, minor deviations accumulate, lead to large divergences among different paths, and create fundamentally different outcomes. In an institutionalist conception of the appropriations process, information does play a role for budgetary actors. Institutionalist views begin with the claim that the institutional character of legislatures precludes politicians from seeking information in any objective, goal-free sense (Schneier, 1970; Schick, 1976; C. O. Jones, 1977; Kingdon, 1989). This notion recalls that legislatures are not institutions of policy analysis but of policy making. Dispute therefore occurs over whose interests are to be benefitted and not over the maximization of aggregate national welfare; this makes information ultimately hostage to actors' ideological and interest-based beliefs. The purpose of performance information is, hence, to provide evidence that supports existing allocation judgments, to serve as ammunition in challenging the positions of opponents, to claim public credit for good performance, or to avoid political blame for poor activities (Gilmour & Lewis, 2006; Joyce, 2011; Nielsen & Baekgaard, 2013). Uncongenial information is claimed to be denied or disputed. A redirection of salient or latent funding attitudes through performance information is considered as highly improbable.

Empirical Studies of Legislators' Information Use for Budgeting

For several reasons, current research on legislators' performance information use for budgeting is considered as unsatisfying (Nielsen & Baekgaard, 2013; Moynihan, 2013; Buylen & Christiaens, 2013; Raudla, 2012). There is still a general lack of research that provide data on actual information behavior. More problematic is the "self-report approach" that is employed in surveys or interviews with politicians. Due to the normative privilege of the intelligent choice credo within our societies, this approach is more likely to reveal lawmakers' view about the basis of competent and legitimate positions than the information's factual influence on decision outcomes. More ambitious econometric methods that overcome this weakness focus on broad correlations between aggregates. In these studies the extent, the quality, or the content-related variation of performance information is compared with either indicators of usage or some measures of budget change (Gilmour & Lewis, 2006; Ho, 2011; Heinrich, 2012). The results thus obtained are mixed, but they cast doubt on the accuracy of the incrementalist conception on legislators' information behavior and on the claim that information does not matter.

Only recently, students of this field have argued that it is not enough to examine the extent of performance information use (Nielsen & Baekgaard, 2013; Moynihan, 2013). The

behavioral question at the heart of the debate is how performance information directs individual allocation decisions in those cases where it is used. Researchers have begun to employ experiments as a viable method to control for the highly complex decision environment in public budgeting and to test how one or few factors of interest influence subjects' judgments. Nielsen and Baekgaard (2013), for example, test in a survey experiment with Danish city councilors the hypotheses of political credit-claiming and blame-avoidance as guiding rationalities for politicians' information behavior. The authors find that funding is not only increased in response to high performing schools as a rational choice perspective would suggest, but that resource allocation also increases as performance within a highly salient policy area decreases, which fits a more institutionalist perspective on information behavior.

Another experiment conducted by Moynihan (2013) analyzes how subjects' decisions vary in the light of identical information considered under different circumstances. Moynihan (2013) tests how advocacy, goal ambiguity, and expectancy influence allocation decisions. The experimental results provide supporting evidence for an institutionalist as well as a rational choice-based explanation of information behavior. His analysis shows that subjects provide significantly higher funds for a program if they receive positive comments by advocates. Negative comments appear to have no negative impact. Also, subjects provide more resources the better they can assess whether organizational goals have been achieved. This is less likely, for example, if subjects are provided with output instead of outcome information. Funding is also more likely to decrease if subjects are provided with additional information on other, conflicting organizational outcome goals. Finally, Moynihan (2013) shows that if information on performance targets are included and anchored expectations are missed, subjects tend to provide lower allocations.

Evaluation

Overall, the research debate has progressed from a dispute over the extent of legislators' information use toward discussions about the way in which available evidence directs allocation decisions and about the contextual variables involved in framing this relationship. The inclusion of regression analysis produces more reliable estimates about the relationship between potential factors of influence and patterns of budget change. The application of experiments has helped to overcome weaknesses related to observational studies. In particular, randomized control designs have increased the confidence that, for example, performance information as such does have an effect on individuals' decisions; that changes in allocations can be caused by changes in the content of performance information; and that the very same information leads to different budgetary conclusions depending on how contextual factors come into play.

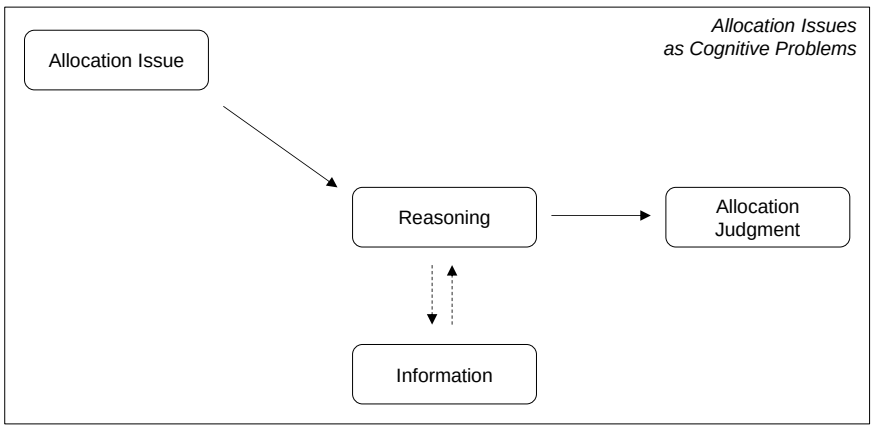
With respect to theory and to why legislators engage in information behavior for budgeting at all, current research is still dominated by traditional perspectives. Incrementalists, for example, fail to account for any substantial use of information by legislators. The rational choice perspective fails to acknowledge the omnipresence of ideology and interest in legislators' information behavior. Also, institutionalists provide no understanding for why information is not used, although it would knowingly foster the promotion of particularistic interests and ideological beliefs (Bartels, 2005). To date there has been no discussion about the plausibility of these competing accounts. Instead, current research is caught up in a mode where the quantity and the methodological reliability of evidence speaking in favor of a perspective determine its accuracy.

In our view, it is one thing to demonstrate that information helps or fails to help legislators do something, and it is another thing to draw the conclusion that these functions also

explain why legislators choose to engage or ignore information in the first place. In other words, legislators may be claimed in retrospect to have used information to evaluate policies, to reward or punish government activities, to claim credit or to avoid political blame for program results, and to build an argument that supports existing judgments or challenges those of opponents. Given a particular policy decision, however, such accounts hardly provide plausible explanations for why an individual decision-maker concludes on the spot to employ or ignore information. Our doubts have been raised by the untenable nature of the basic premise shared by current theoretical perspectives on legislators' information behavior. Incrementalists, rational choice proponents, and institutionalists alike assume that for legislators, policy issues in general and allocation issues in particular represent cognitive problems, and that the mere existence of these problems triggers individual information behavior. By cognitive problems, as opposed to physiological or affective problems, we understand challenges creating intellectual uncertainty about how best to exploit an opportunity or avoid some threat (Wilson, 2006).

Such a conception of policy issues as cognitive problems assumes (or advises) purposive and therefore rational actions from the decision-maker (Bargh, 1994; Nisbett & Ross, 1980; Kuhn, 1989). Whatever the underlying goal, such a view presumes an intentional, effortful, and conscious process of reasoning and evidence gathering aimed at identifying alternatives, deducing consequences, ranking their importance, and assigning individual probabilities of occurrence so that a best, satisfying, or appropriate judgment can be made. This process is most likely biased and erroneous since people are known to apply heuristics in order to make complex situations manageable and to overcome limited attention, working memory, and computational capacities (Simon, 1956; Conlisk, 1996). The main point, however, is that existing theoretical perspectives emphasize optimizing behavior as their "preferred engine of explanation" (Simon, 1978, p. 6) for why legislators deliberately decide to engage with policy information. Deliberation, irrespective of how biased, precedes judgment (see Figure 1). We therefore refer to these notions of legislators' information behavior as rationalist models.

Figure 1: Rationalist Model of Legislators' Information Behavior



For policy issues to represent cognitive problems for an individual legislator and to trigger optimizing behavior, two mechanisms must operate effectively in the political world. First, we need to be able attribute consequences that result from political decisions to individual legislators. Second, individual political reward and punishment must be based on achieved results. We do not think that either one is the case outside of textbook examples. First, linking positive or negative outcomes to a particular lawmaker is difficult at best and is

most likely impossible (Olson, 1971; Pierson, 2004). Legislators are shielded from assuming individual responsibility for their decisions thanks to the collective choice nature of legislative decision-making and the non-executive character of this government body. In addition, individual accountability is blurred because causes as well as outcomes of social phenomena are usually slow-moving. Decisions must often accumulate—to pass a certain threshold or to be part of a more general causal chain of actions and events—before a particular outcome manifests itself. Significant stretches of time disentangle individual decisions from their ultimate result and make links between them loose and diffuse. Also, even if particular outcomes could be traced back to individuals, we know that "legislators are rewarded for their positions, not for the policy outcomes that result from their positions" (Shulock, 1999, p. 227). Given the imperfection of both mechanisms, the motives put forward by incrementalists, rational choice proponents, or institutionalists are unlikely to provide reasons and triggers strong enough for an individual legislator to engage in an intentional, effortful, and conscious process of reasoning and evidence-gathering for making a budgeting decision.[5] We therefore do not think that for legislators policy issues and allocation issues represent cognitive problems.

ALLOCATION ISSUES AS MORAL PROBLEMS

To budget means to define how government functioning is financed and how expenditures are distributed among various programs and activities. Among other things, government budgets determine the following: how a society satisfies its needs; where it has to dispense with something; what sacrifices are to be made from individuals and enterprises; how incomes are redistributed; and how economic activity in general is affected (Pfäffli, 2011; Tobin, 1972). Because decisions on these dimensions affect the interests of individuals and the welfare of the society as a whole, allocation issues are formidable examples of moral problems (Gewirth, 1984). When passing a government budget, legislators therefore make a moral judgment—an evaluation of whether available options are good or bad with respect to some goods considered as obligatory within the community they represent, such as fairness or civil rights and liberties.

As representatives of societal groups with shared ideologies about how the world works, legislators have tightly constrained, strong, and differing beliefs about what constitutes good allocation decisions (Converse, 1964; Kingdon, 1989; Jackson & Kingdon, 1992). This, and the insensitivity of individual political behavior to its consequences discussed before, brings about a situation where optimizing behavior can be claimed to be the exception in budget decision-making. Rather, current research supports the notion that legislators' policy deliberations in general are motivated by moral principles (Baron, 2003). We therefore suggest considering allocation issues as representing moral problems to legislators that require moral judgments. The 2013 U.S. budget impasse over President Obama's health care law and the subsequent shutdown of the federal government starkly illustrate the moral dimension of allocation issues. That is, its potential to inexpiably divide different ideological camps (Haidt & Hersh, 2001; Robinson, Keltner, Ward, & Ross, 1995) and, if necessary, to motivate individuals to endorse the group's values even at the expense of their own self-interest (Schwartz-Shea & Simmons, 1991; Baron, 1997; Kaplow & Shavell, 2002).

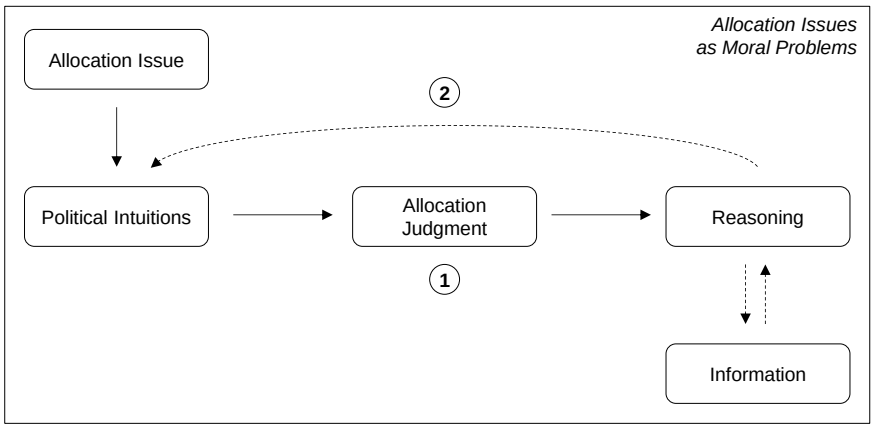
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[5] It is important to note that we are not blaming the complexity of the task structure or human cognitive constraints for failing to produce the presumed behavioral consequences as, for example, proponents of the bounded rationality research tradition would do (e.g., Simon, 1985).

There is a rich research tradition on how people make moral judgments and what consequences it has for individual information behavior. In a seminal article, Jonathan Haidt (2001) reviews neurological, behavioral, developmental, and evolutionary evidence from more than five decades and suggests an intuitionist model of moral decision-making. According to this notion the way people make moral judgments begins not with a process of deliberate reasoning and systematic evidence gathering, as rationalist models claim; rather, an eliciting situation triggers deeply ingrained intuitions of approval or disapproval. This view does not dismiss reasoning and the consideration of evidence, but they typically consist of "one-sided efforts in support of preordained conclusions" (Greene & Haidt, 2002, p. 517). Systematic reasoning and information behavior precede judgments and can be assumed to be less biased only when initial intuitions conflict and fail to provide orientation.

Based on these insights, and by extension, a conception of allocation issues as moral problems suggests that political intuitions will do the job most of the time; that is, they will intuitively predispose a lawmaker's allocation judgments. If necessary, reasoning and evidence gathering will follow. But they are not more than post hoc rationalizations and justifications of existing positions. Legislators should not be expected to engage in systematic and effortful deliberation unless a given allocation issue causes a conflict of political predispositions. When these contradict, substantial interest in policy information is triggered in order to construct a judgment that helps breaking the deadlock. Figure 2 illustrates this notion and helps to organize the specific implications on legislators' information need, search, and use behavior. The hypotheses drawn from this *intuitionist model of legislators' information behavior* are based on established research from social and cognitive psychology and represent extensions to the issues of interest. In the following paragraphs, we therefore summarize what research from these fields holds for the aspect of interest and suggest subsequently what it implies for a particular facet of legislators' information behavior, that is, her information need, search, or use, respectively.

Figure 2: Intuitionist Model of Legislators Information Behavior



Note: Adapted from Haidt (2001).

The need for information: There are two systems at work when people make judgments (Sloman, 1996; Chaiken & Trope, 1999; Stanovich & West, 2000; Kahneman, 2011). System 1, or the emotional 'hot system' as it is usually referred to, is fast and effortless. It is unintentional and runs automatically. The decision-maker can only recall the conclusions that System 1 has produced; the actual process is not accessible to the individual consciousness.

System 1 does not demand attentional resources, and thought in this mode is based on associations and similarities. Over time, people built a large knowledge repertoire on how they used to react in certain situations. Whenever familiar patterns are encountered people select the relevant script, adjust, and execute that script. The conclusions produced by System 1 are called *intuitions*. They have been formed based on evolutionary requirements, a particular cultural context, and the beliefs and practices of the individual's community. System 2 by contrast is slow and effortful; it is intentional, controllable, and systematic. The cognitive steps engaged by System 2 such as searching for relevant information and weighing and coordinating it with existing knowledge are consciously accessible by the decision-maker. To run System 2, people must devote attentional resources. Thought under System 2 aims for accuracy. It is therefore truth preserving, analytic, and rule-based. Research on moral decision-making suggests that the division of labor between both systems is conclusively regulated. System 1 is claimed to be the default mode of human decision-making. Scarce cognitive resources and a confined sensory apparatus restrict people from paying attention to all relevant aspects. It is simply not possible to consider everything that is going on around us. This prevents System 2 from dominating human judgment. Systematic processing becomes necessary when the intuitive judgment system is blocked. This happens if intuitions fail to predispose conclusions because they contradict. Only then does it become necessary to devote attentional resources to the performance of systematic reasoning and information gathering.

As Herbert Simon (1978, p. 13) noted, information is only a positive good for decision-makers if the problems are few and simple and evidence is relatively scarce. If attention is the scarce resource, information becomes an expensive luxury because it may distract people from important aspects toward irrelevant aspects of an issue. We see no reason to assume that legislators' need for information is governed by different principles than those shaping general human decision-making. We can extend the insights on human attention management and suggest that when legislators face an allocation issue they follow by default their political intuitions. In line with corresponding research, we understand political intuitions or predispositions as a result of peer group socialization (Ajzen, 2001). Political intuitions are primarily shaped by ideology and interests (Weiss, 1983), and they have been observed to provide a fairly accurate framework for legislators to describe, evaluate, and prescribe what is or ought to be in the social world (Lane, 1962, p. 15). From the point of view of a legislator and for most of the policy issues, consulting information implies unnecessary effort. What we want to introduce to the study of legislators' information behavior is the idea of cognitive work that must be done by systematic attention to available evidence (Fiske & Taylor, 1991; Chaiken, Giner-Sorolla, & Chen, 1996). Thinking about information in legislatures as a problem of cognitive economy implies that individuals supposedly can solve hard policy problems by using available evidence. But it costs them something to do that. It is easier for legislators not to use information and to go on the basis of what family, friends, or colleagues say and to follow the orientations that political intuitions provide: "Good liberals do this. Good conservatives do that." Of major interest, therefore, is the trigger that "forces" legislators to pay attention to available evidence. We argue in this paper that it is conflicting political intuitions that create a substantial need for information. Different than rationalist models of information behavior, we do not expect legislators to perform cognitive work unless their political intuitions fail to provide orientation.

H1: Legislators' interest for information is triggered by conflicting political intuitions.

The search for information: When moral intuitions are in line and the intuitive judgment system works properly, people's information search is biased (cf. Haidt, 2001, pp. 820-822). Under such conditions, the main function of System 2 is to provide arguments for the conclusion that has been reached intuitively. Research has found two different motives that bias reasoning and the search for evidence under this condition. 'Defense Motives' describe the human trait to avoid cognitive dissonance by holding coherent values, commitments, and views about the world (Festinger, 1957). To maintain internal consistency, people therefore hold beliefs and attitudes that are congruent with prior commitments (Chaiken, Giner-Sorolla, & Chen, 1996). If consistency is threatened, people react by either changing beliefs by adding new ones or manipulating the importance of current commitments (Wicklund & Brehm, 1976). Reasoning and information behavior is also biased by 'Relatedness Motives' — the human concern for agreement and smooth interaction with members of their community and other allies. This evolutionary-shaped desire overrides concerns for accuracy in order to prevent potential siding with enemies. People therefore skew their attitudes and beliefs in order to satisfy the goals of their community (Chen & Chaiken, 1999) and shift opinions toward those of anticipated partners (Chen, Shechter, & Chaiken, 1996). If defense and relatedness motives are immanent, every step of the reasoning and evidence gathering process is subconsciously distorted toward the initial view (Pyszczynski & Greenberg, 1987): people select the hypotheses that are likely to confirm their a priori theory about how the world works; they apply favorable inference rules for testing these hypotheses; and they consider only congenial information. This so-called "myside bias" (Perkins, 1989) occurs not because System 2 is not able to find arguments and evidence on the other side of the controversial issue but because people's commitment to a particular group and its view nourish "the *belief* that one-sided thinking is good" (Baron, 1995, p. 4, emphasis in original).

We argue that both defense motives to protect adhered worldviews and relatedness motives to coalise with members of one's community are particularly present within legislatures. Political ideologies are epitomized worldviews (Gerring, 1997, p. 969), and they are implicated in virtually any issue that lawmakers must consider (Kau & Rubin, 1979; Kalt & Zupan, 1984; Jackson & Kingdon, 1992; Jenkins, 2006). When political ideologies are at stake, research has found individuals' cognitive defense motives to be particularly strong. Findings demonstrate how people abstain from subjecting policy evidence to critical scrutiny when it conforms to their view and do so when information is challenging to one's beliefs (Lord, Ross, & Lepper, 1979; Weiss, 1979). Party affiliations provide the other source for the "myside bias" in politics. Legislatures excel at fierce group competition since their very purpose is to organize disputes among contending societal fractions. Some legislatures have even additional mechanisms to foster group or party coherence, respectively. 'Whips' in the UK parliament, for example, can expel legislators from their fraction if they deviate from the party line. The same applies for the informal 'Fraktionszwang' within the German Bundestag. In the U.S. legislative system, party membership also affects legislators' behavior. For example, the influence of party affiliations has been documented by objective measures of voting history and by subjective impressions of U.S. Congressmen (Kingdon, 1989). In sum, and for all these reasons, legislatures by their natural virtue propel defense and relatedness motives in lawmakers' political behavior. We should not expect legislators to consider available evidence in any systematic, useful, or interesting way unless conflicting political intuitions shield information search from the omnipresence of defense and relatedness motives and put legislators in a state of "active open-mindedness," as Baron (2000, p. 199) has mentioned.

H2: Legislators' information search is biased when political intuitions align and less so when they conflict.

The use of information: Whether attention and information search behavior are systematic or biased, they follow a certain logic that advises the decision-maker about what information is relevant, how to integrate it with prior knowledge, and when to stop looking for additional evidence. In cases where moral intuitions are in line and individuals assume to know how the world works, this process has been claimed to follow a "makes sense epistemology" (Perkins, Allen, & James, 1983, pp. 185-187). A makes-sense epistemologist has a fixed idea about which side of an issue is to be supported but only a more or less detailed understanding about how things exactly fit together. To be considered, information then must make intuitive sense with what one already knows about a given issue; otherwise it is ignored or disputed. Information is used in order to "fill in the gaps" so that a consistent and supporting case can be built. Bilalic, McLeod, & Gobet (2010) have demonstrated this information use behavior by observing the eye movements of expert chess players. Their experiment shows that as soon as an expert recognized a situation as familiar, the corresponding solution script that is immediately activated directs attention toward squares consistent with the predisposed conclusion and away from less or unknown solutions to checkmate. By contrast, if the intuitive judgment system delivers conflicting conclusions, System 1 fails to produce an unambiguous judgment. It is assumed, but not yet demonstrated, that this condition triggers people's systematic reflection capacity to clarify which of the contradicting intuitions is more important. Available evidence is therefore supposed to be used by individuals in order to solve the conflict by building a persuasive case for each side of the issue. The goal is to restore consistency. This information use process has been claimed to follow a "feels right ethic" where people devote more systematic attention to information until one "judgment will begin to feel right and there will be less temptation (and ability) to consider additional points of view" (Haidt, 2001, p. 829).

Whiteman (1985) has studied the ways in which U.S. Congressmen use policy information within committees. He identified substantive, elaborative, and strategic uses of evidence and noted that they correlate with the degree of partisan conflict that was associated with a particular policy issue. Others have used terms such as instrumental, conceptual, persuasive, or symbolic to describe similar observations. Based on current research, however, we argue that this terminology might be accurate to describe what one sees as an observer of the political process but is misleading for what legislators actually do by using policy information. For example, an issue that is contested among political fractions implies that parties have contradictory positions toward it. What might look from the outside as the strategic, persuasive, or symbolic use of policy information by lawmakers is in fact the consequence of harmonious political intuitions that subconsciously distort individuals' attention, their information search, and consequently their use of evidence. Bilalic, McLeod, & Gobet's (2010) experiment indicates that as soon as a particular conclusion has been reached, people do literally not see alternatives or contradictory evidence. They believe that the problem-solving or reasoning process is performed in an open-minded way and that the chosen solution is the best to deal with the given situation (Bilalic, McLeod, & Gobet, 2010, pp. 113-114). From a legislator's perspective, there is nothing strategic, persuasive, or symbolic about the way she uses "available" policy evidence. Information use is not an attempt to wile somebody to one's side or to mislead the citizens. It is just the way it makes sense to use what is there.

By contrast, substantive and elaborative uses of policy analysis are not automatic consequences of low conflict environments. Low conflict might be due to either low political interest for a particular policy issue or ambiguous orientations within existing ideological camps. We argue that it is the latter case and thus conflicting political intuitions that create a window of opportunity for more attention to policy information and a less biased search. But in this state, too, it is unlikely that legislators' goal consists in finding the analytically best

answer to the given policy problem, if there is one in the first place. After all, why should legislators suddenly turn into welfare maximizing policy analysts interested in the best policy option? Rather, it is likely that information is used by legislators to reach a conclusion that feels right and is consistent with one's ideology and party. It is for these reasons that we think the notions of 'makes sense' and 'feels right' provide better accounts for what legislators actually do by using information for individual deliberation.

H3: Legislators' information use is based on a makes-sense strategy when political intuitions agree and follows a feels-right approach when they conflict.

METHODOLOGY

This model of legislators' information behavior is grounded in the intuitionist conception of moral decision-making. Its extension to our phenomenon of interest is based on established research within corresponding fields. The intuitionist model's usefulness for understanding legislators' information behavior can be tested in many ways. We modelled a decision experiment to evaluate the potential of harmonious and conflicting political intuitions for explaining legislators' information need, search, and use. With an experiment, researchers are able to create the conditions most favorable to nullify the predictions of a given model and to test the generalizability of a theoretical idea on human behavior (Webster & Sell, 2007). Experiments excel for this research venture because they reduce the complexity we would otherwise face in natural scenarios. Experiments allow to focus only on those factors that an underlying theory suggests might have an effect on the phenomenon of interest (Campbell & Stanley, 1963). Since treatments are manipulated deliberately and their effects on the dependent variables are measured subsequently, causation can be inferred with high confidence from the results obtained (Druckman, Green, Kuklinski, & Lupia, 2006). The researchers' full control over the experimental environment, however, is also a threat to the external validity of insights thus generated (Lucas, 2003). Because of this, the design of an experiment must consider the critical features of the natural scenario to which it aims to be relevant (Drabek & Haas, 1967). Therefore, this experiment's subject are real Swiss state legislators who deliberate about an actual allocation issue in Switzerland, consider realistic tradeoffs, and face current policy information.

57 legislators participated voluntarily in this study. The 21 female *Kantonsrätinnen* and 36 male *Kantonsräte* were on average 50 years old; the youngest was 25 and the oldest was 68. All nine parties of the Swiss political left-right spectrum were represented. Lawmakers' experience in state parliament ranged from 1 to 21 consecutive years with 6.3 years as an average period of representation. All existing standing committees were represented by at least one of their members. The decision experiment was conducted individually. We booked a meeting room in the parliament's building in order to provide a familiar environment for subjects. Legislators were informed that the experiment was part of a university research project initiated to improve our understanding about decision-making within legislatures. To this end, subjects were told that they would be confronted with an allocation problem that required their political judgment. We stressed the fact that there was no correct solution to the task but that it was all a matter of political perspective. That being said, a legislator was seated in front of the computer monitor where she could go through the experimental procedure by using only the computer mouse we provided. All experimental materials were written in German.

Experimental allocation issue: Subjects were required to make a decision about the funding of a local road network. They had to decide whether they would like to increase or reduce its overall capacity. Road network maintenance was not affected by this decision. For the Swiss context, allocation decision on this policy matter are uncontroversial within political fractions but highly conflictual among them (Frey, 1992). Right-wing politicians tend to support attempts to increase road network capacity by highlighting its importance for the local economy and for the individual welfare. Left-wing politicians refer to the environmental burdens to justify opposition to enlargement and to support propositions to reduce existing capacities. What we tried to do in the experiment was the following: first, to vary the degree to which subjects' political intuitions conflict when they deliberate about this allocation issue; and second, to observe the consequences on subjects' information need, search, and use behavior.

Decision scenario 'harmonious intuitions': To cement traditional positions and to align individual political intuitions, one experimental group was told that any investment budget change for the road infrastructure would have direct and adverse effects on public spending for environmental protection. The value tradeoff in this decision scenario is unproblematic for any Swiss legislator of the traditional left-right spectrum and should represent an easy problem for the intuitive judgment system to solve. From a left-wing ideological perspective, investment cutbacks in road infrastructure capacity can be claimed to prevent the well-balanced natural organism from human irritations through road network constructions. And if freed money is used to fund environmental protection policies, as this tradeoff suggests, the moral compass should consistently and strongly suggest opposing investments for the enlargement of the road network. From a right-wing ideological perspective, political intuitions overlap too, but they suggest the opposite conclusion. Based on mutual advantage considerations, increases in infrastructure capacity ought to be endorsed, and even more so if this additional money comes from reducing spending on questionable environmental protection measures, as this tradeoff implies.

Decision scenario 'conflicting intuitions': Again, the experimental task is a decision on the future capacity of the road network. For this decision scenario, however, we wanted political intuitions of Swiss state legislators to conflict. We therefore told subjects of this experimental group that additional investments for enlarging the domestic road network would be financed through an increase in business taxation. Investment cutbacks and a reduction in road network capacity, on the other hand, would allow reducing the tax burden for businesses. This value tradeoff cuts across ideological inclinations of Swiss state legislators and can therefore be expected to be a difficult case for the intuitive judgment system to solve. Left-wing legislators' intuition to protect nature from devastating human constructions is contradicted by the intuition to support the taxation of businesses. According to the left-wing notion, lower tax levels will constrain the government's ability to correct for disparate market outcomes and to compensate for negative effects that result from unequally distributed capital. For right-wing legislators increases in road network capacity are generally supported, but the fact that increases would be accompanied by higher business taxation, as this tradeoff suggests, makes issue positioning ambiguous too.

Providing policy information: After introducing one of these two tradeoffs, all subjects were presented with the corresponding budget document for the policy area of road infrastructure. This document represents the official decision-making aid for state legislators' budgeting deliberations. As in reality, the experimental budget document provides only information about the policy issue at hand. There are no explications of the concrete effects specific allocation decisions would have on related policy matters, such as environmental protection or business taxation. In particular, the experimental budget document highlights

changes within the relevant *policy environment*, the legally defined *goals and activities* of the agency responsible for the policy execution, the politically agreed *outcomes and indicators* that inform about success, the specific government *outputs and its indicators*, the agency's *future priorities* with respect to these outputs, and the overall *financial statistics* (see Appendix A of this paper for the experimental budget document).

In a first-best world, information on these aspects builds a model that causally links intended results with government activities and public spending. The budget document shows these relationships for the past, the current, and the next budget year and makes projections for the subsequent three planning years. The experimental budget document described the following situation: Due to increases in population and in needs for mobility, the state's road infrastructure is under serious pressure from traffic volume. As the outcome indicators report, the target value on acceptable hours of traffic congestion set by the state legislature has been continuously exceeded. It is projected to be three times higher by next year. The overall policy outcome goal of a fast and continuous transportation infrastructure is therefore at risk. In order to meet the target value for traffic congestion and to ensure outcome attainment, the state road network capacity would have to be extended over the next four years. However, the current investment budget to execute this development plan is not sufficient.

Measuring treatment effects: Subjects' interaction with the experimental budget document was observed by using an eye-tracking device.[6] An eye tracker records two types of eye movements: fixations and saccades. Fixations correspond to the desire to maintain one's gaze on an object of interest, and saccades are manifestations of the desire to voluntarily change the focus of attention from one fixation to another (Duchowski, 2007). Eye-tracking methodology is based on the so-called 'eye-mind-hypothesis', which holds that where people look indicates where their attention lies (Goldberg & Wichansky, 2003). The eye-tracking approach has a long tradition in neuroscience, psychology, industrial engineering and human factors, marketing, and computer science (Rayner, 1998). This research suggests that by tracking someone's eye movements and path of attention we can learn about the interest an individual has in given information and about her cognitive load involved in studying it (see Appendix B of this paper for the experimental setup).

Since we are finite beings – we are not able to attend to all things at once, we are selective in what we perceive, serial in what we process, reconstructive and not photographic when we remember (Hogarth, 1987; Simon, 1990) – eye-tracking is a promising opportunity for testing the intuitionist model of legislators' information behavior. The amount of fixations indicates if interest in available information is higher when political intuitions conflict, saccades show whether harmonious intuitions limit and therefore bias information search, and the way of how attention patterns unfold over time might point to different information processing logics. Compared to research approaches that rely solely on the legislators' self-reported information use, eye tracking is advantageous because it documents individual information behavior while it actually happens. Embedded in an experimental design, eye tracking allows to draw more reliable insights about the behavioral mechanisms that are claimed to hold across allocation tradeoffs that differ with respect to how clearly political intuitions provide orientation. In sum, if our model has nothing to contribute to the under-

[6] Eye tracker T60XL from Tobii Technologies with a 24-inch color monitor (aspect ratio 16:10), a native resolution of 1920x1200 pixels, and embedded eye-tracking equipment below the monitor with a binocular sampling rate of 60 Hz was used.

standing of legislators' information behavior, experimentation and eye tracking are effective ways to nullify the intuitionist model's predictions.

RESULTS

Descriptive Statistics on Eye-Tracking Metrics from 56 Swiss State Legislators

Table 1 provides descriptive statistics for the overall distribution of the variables of interest. It summarizes data on eye tracking metrics from 56 lawmakers—one subject was excluded from the sample due to calibration problems. From the remaining subjects we draw A sample of 408,087 observations on the *Time Spent* on consulting the budget document (in milliseconds), a subject's *Fixation Index*, and her *Saccade Index*. The indices represent the order in which a gaze event was acquired by the eye-tracking device, starting with 1 as the first fixation or saccade sample, respectively. As Table 1 shows, there are also *Unclassified* gaze events. This is because an algorithm, a so-called fixation filter, has to be applied to the raw eye-tracking data in order to classify eye movements as either fixations or saccades or to discard eye movements as noise.[7] Other variables of interest to this study concern the *Fixation Duration* and the *Saccade Duration* as well as the specific *Area of Interest* on which fixations were located. The pattern of each distribution can be discerned from the specific density curve provided in Appendix C of this paper.

Table 1: Descriptive Statistics on Eye-Tracking Metrics from 56 Swiss State Legislators

	N	Minimum	Maximum	Median	Mean	Std. Deviation
Absolute Time Spent (ms)	408087	0	253064	62421	69762.91	48721.239
Gaze Point Index	408087	1	15196	3749	4189.72	2925.443
Fixation Index	258001	1	856	209	238.01	166.912
Saccade Index	74890	1	1081	289	331.31	239.805
Unclassified	75196					
Gaze Event Duration (ms)	408087	16	56193	200	1589.15	6707.248
Fixation Duration	258001	66	1632	233	256.34	141.793
Saccade Duration	74890	16	633	50	71.40	61.744
Areas of Interest (count)	252895					
Outcomes and Indicators	45431					
Financial Statistics	19810					
Goals and Activities	51761					
Policy Environment	74659					
Outputs and Indicators	30782					
Future Priorities	30452					

To check whether our decision scenarios propelled political intuitions to either align or conflict, we used an established item battery designed by Hanselmann & Tanner (2008) to measure perceived difficulty for evaluating moral dilemmas. An independent sample t-test (Heeren & D'Agostino, 1987) confirms our expectations that, overall, legislators facing the

[7] For this experiment, we applied the Tobii I-VT Fixation filter (Olsen, 2012). Based on the velocity of the directional shifts of the eye, the filter distinguishes between fixations and saccades; it also merges adjacent fixations and discards short fixations (i.e., fixations below 40 milliseconds) from which most probably no information has been discerned.

'conflicting intuitions' decision scenario perceived the given allocation problem as significantly more difficult ($M = 3.32, SD = 1.47$) than their counterparts dealing with the 'harmonious intuitions' decision scenario ($M = 1.96, SD = 1.32$), $t(54) = -3.65, p = .001, d = -0.97$ (see Appendix D of this paper).

Is Interest in Policy Information a Matter of Conflicting Political Intuitions?

Our model suggests that it is a matter of minimizing cognitive work that causes legislators to rely more on what political intuitions suggest rather than to invest effort in consulting policy information. Hypothesis 1 therefore claimed that when political intuitions align, from a legislator's perspective, there is no need to devote attentional resources to evidence. The need to engage in cognitive work, and hence to show interest in policy information, increases the more the intuitive judgment system fails to provide clear orientation. In eye tracking studies, the amount of fixations is a basic indicator for individuals' attempts to absorb available information and thus represents a reliable proxy for subjects' interest in what they see (Horstmann, Ahlgrimm, & Glöckner, 2009). In our analysis, we used the *Fixation Index* that informs not only about the total amount of fixations but – since it provides the beginning and the specific end of any fixation order – indicates also how enduring this interest is.

Table 2 provides the results of a univariate ANOVA – a special case of a general linear model (Wonnacott & Wonnacott, 1990). It shows a significantly higher *Fixation Index* mean for legislators that face conflicting political intuitions: $F(2, 257999) = 277264, p < .001$. The test provides strong support for Hypothesis 1 and shows that the information we provided attracted less interest from legislators if the allocation tradeoff prompted harmonious political intuitions. Approximately one third more fixations are registered, and hence increased cognitive work is employed as soon as political intuitions fail to provide a clear conclusion for the allocation issue. As the partial eta-squared value shows ($\eta_p^2 = .682$), this association is exceptionally strong.

Table 2: Univariate ANOVA on the Fixation Index

Decision Scenario

Decision Scenario	N	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
harmonious intuitions	116874	202.817	.479	201.878	203.757
conflicting intuitions	141127	267.156	.436	266.301	268.010

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Model	14880128582.811[a]	2	7440064291.406	277264.121	0.000	.682
DecisionScenario	14880128582.812	2	7440064291.406	277264.121	0.000	.682
Error	6923106882.188	257999	26833.852			
Total	21803235465.000	258001				

Note: The ntercept was ignored, since it tests whether the mean of the scores is zero.

Do Harmonious Political Intuitions Bias Search Behavior?

When moral issues are at stake and corresponding intuitions are in line, research suggests that people's attention is skewed by evolutionary-shaped defense and relatedness motives. Their goal is to ensure coherence within one's worldview and to avoid the emergence of positions that are in contradiction with what shared beliefs of one's group suggest. Given the nature of legislatures and the competition mechanisms that prevail therein, our model supposes that legislators' information behavior is particularly prone to defense and relatedness motives if intuitions align. Hypothesis 2 therefore claimed that we should not expect legislators to consider policy evidence systematically until a conflict in political intuitions shield information search from bias.

For this study, we operationalize biased information search as a limited effort by legislators to consider the information we provided. To compare whether this effort differs under harmonious and conflicting political intuitions, we consult three eye-tracking metrics. First, we focus on single *Fixation Durations*. If they are short, single *Fixation Durations* indicate that people are scanning for what is available. Longer single *Fixation Durations* suggest that subjects have reached or are close to reaching a conclusion and are therefore less interested in having an idea of what information is there. Second, we consider single *Saccade Durations*. We interpret the time legislators spent for moving from one fixation to another as the search radius subjects are willing to "travel" in order to find something helpful. Lastly, we suggest that information search is biased the more people fail to integrate available information. Simply put, each piece of information tells its part of the story, that is, the more people integrate these different parts the more complete that story is. We therefore focus on legislators' *Adjacent Fixations* and compare whether the amount of those that were performed to move from one area of interest to another varied significantly between our two experimental conditions.

Table 3: Univariate ANOVA on Single Fixation Duration

Decision Scenario

Decision Scenario	N	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
harmonious intuitions	116874	261.382	.415	260.569	262.194
conflicting intuitions	141127	252.173	.377	251.433	252.912

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Model	16959291218.773[a]	2	8479645609.386	422200.226	0.000	.766
DecisionScenario	16959291218.776	2	8479645609.388	422200.226	0.000	.766
Error	5181759632.227	257999	20084.418			
Total	22141050851.000	258001				

Note: The ntercept was ignored, since it tests whether the mean of the scores is zero.

Table 4: Univariate ANOVA on Single Saccade Duration

Decision Scenario

Decision Scenario	N	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
harmonious intuitions	32121	68.924	.344	68.249	69.599
conflicting intuitions	42769	73.266	.298	72.682	73.851

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Model	382174942.575[a]	2	191087471.287	50184.326	0.000	.573
DecisionScenario	382174942.575	2	191087471.287	50184.326	0.000	.573
Error	285151951.425	74888	3807.712			
Total	667326894.000	74890				

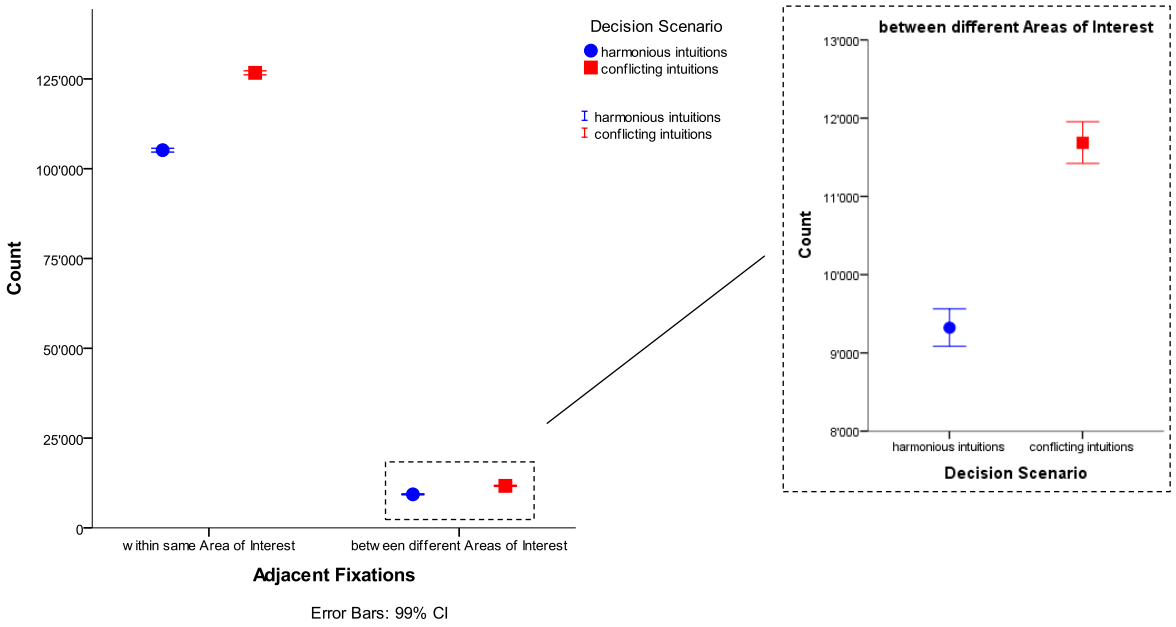
Note: The ntercept was ignored, since it tests whether the mean of the scores is zero.

Table 3 and Table 4 provide the results of a univariate ANOVA for single *Fixation Duration* and single *Saccade Duration*, respectively. Table 3 shows that legislators' single *Fixation Duration* was on average shorter if the tradeoff they were facing triggered conflicting political intuitions: $F(2, 257999) = 422200, p < .001, \eta_p^2 = .766$. Under this condition, individual information search is dominated by scanning behavior. Because legislators are farther away from a final decision they appear to be more engaged in examining what else is available than their counterparts dealing with harmonious intuitions. These legislators, on the other hand, appear to be fundamentally more constrained in their scanning ability and – because they already know how to position – show less interest in having a general overview about the information we provided. This finding is supported, secondly, by results on subjects' single *Saccade Duration*. Table 4 shows that legislators' information search radius is significantly shorter if political intuitions harmoniously suggest a conclusion: $F(2, 74888) = 50184, p < .001, \eta_p^2 = .573$. There is less willingness to "travel" in order to find helpful

evidence if there is no need for help in the first place. In sum, as the partial eta-squared values show, the association between political intuitions on the one hand and scanning behavior and search radius on the other hand is exceptionally strong.

Finally, Figure 3 provides findings with respect to the third indicator of biased information search: *Adjacent Fixation*s that were performed to move from one area of interest to another. To test the relationship, a χ^2-test of independence between *Decision Scenario* and *Adjacent Fixations* was performed. As expected, results show that when intuitions conflict, there are not only more adjacent fixations within the same area of interest but also more fixations between them: $\chi^2(1, N = 252'895) = 7.432, p \leq .05$. The right-hand side of Figure 3 magnifies the relationship between *Decision Scenario* and *Adjacent Fixations* that attempt to integrate the different kinds of information. As the error bars (i.e., 99% confidence intervals) for each mean show, legislators performed significantly more fixations to move from one piece of information to another if political intuitions were in contradiction. This last effect, however, is rather weak compared to those observed for single *Fixation Duration* and single *Saccade Duration* ($\varphi = .005$).

Figure 3: Legislators' Adjacent Fixations



Note: Graphical summary of χ^2-test of independence between *Decision Scenario* (*harmonious intuitions* represented by circles vs. *conflicting intuitions* represented by squares) and *Adjacent Fixations*. The left-hand side of the figure represents mean counts for adjacent fixations that follow within the same area of interest and between different areas of interest for both experimental groups. The right-hand side of the figure magnifies the relationship between the "harmonious intuitions" and "conflicting intuitions" condition for adjacent fixations among different areas of interest. Confidence intervals reflect 99% level of confidence.

Does Information Use Differ by Intuition Agreement?

Our model does not entail a social interaction component that would allow us to hypothesize about how policy information is used in political discourse. What we consider by information use in this analysis is therefore limited to the individual decision-making process. Hypothesis 3 suggested that from a legislator's perspective information use is based on a different logic depending on how agreeing political intuitions are. When intuitions provide clear

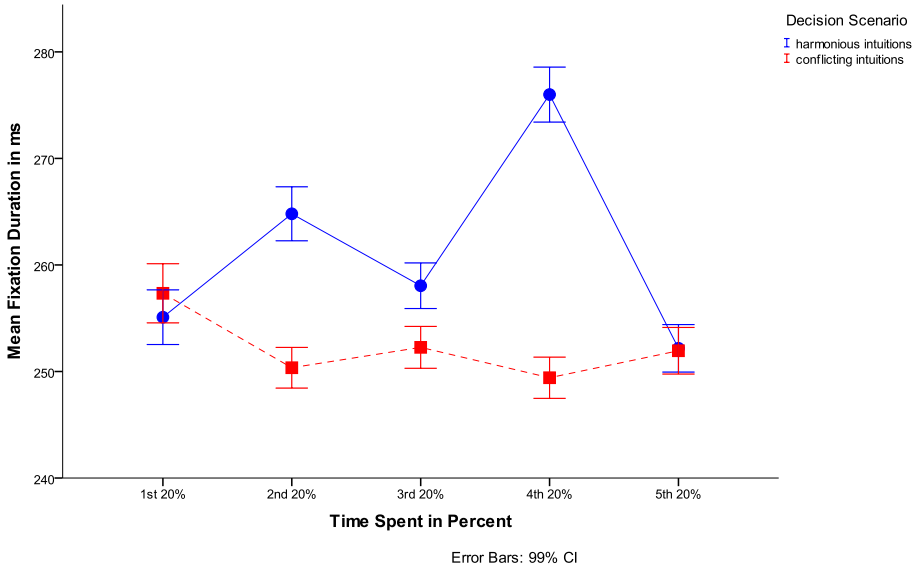
advice on how to position, Hypothesis 3 claimed that legislators process information according to whether it makes sense to what they already know about the given problem. If intuitions conflict and positioning becomes ambiguous, information is used in order to find out which side of the issue feels more right.

To compare whether information use differs according to Hypothesis 3, we again focus on the information search indicators. This time, however, we consider how the patterns of *Fixation Duration*, *Saccade Duration*, and *Adjacent Fixations* evolve over time. The effect of time on these search indicators offers the opportunity to explore whether different information use logics are at work. This is because we assume that any information *use* at the time t will affect information *search* in $t + 1$. If Hypothesis 3 is valid, then as soon as the initial conflict in political intuitions begins to dissolve we expect legislators to be less able to prolong an intense scanning behavior (*Fixation Duration*), to maintain an extended search radius (*Saccade Duration*), and to continue the integration effort of various pieces of information (*Adjacent Fixations*). Since any feels-right logic will eventually return to a makes-sense attitude, we expect the means of these indicators to be similar in the beginning of the experiment, to differ from each other according to Hypothesis 3 shortly after, and to conform again toward the end of the experiment.

Figure 4, Figure 5, and Figure 6 provide graphic illustrations of the results of this analysis. In each case, they plot on the x-axis the time legislators' spent on considering the information in consecutive blocks of twenty percent. On the y-axis, the graphs depict the indicator of interest. Overall, the analysis provides support for Hypothesis 3. First, Figure 4 shows that legislators' single *Fixation Duration* in both experimental conditions is on average not significantly different during the first 20% of the evaluation time. This changes during the next three time blocks. Legislators facing harmonious intuitions show less interest in scanning available evidence. The pattern of means highlighted in blue illustrates the tendency of legislators with preordained positions "to knuckle down" on the given information and, presumably, to contrast it with their initial conclusion. This is the case for the second and especially the fourth time block. In time block three, however, scanning behavior increases but still conforms to the logic of making sense since it probably illustrates legislators' relocation between the first and the second extended resting spot. Legislators facing conflicting intuitions, on the other hand, significantly lower their mean single *Fixation Duration* during the second time block and fortify their information scanning behavior compared to the beginning of the experiment. For the next two time blocks this downward movement levels off. At the end of the experiment, legislators' average single *Fixation Duration* again approach each other, are almost identical for both experimental conditions, and stop at about the same level as they were at the beginning.

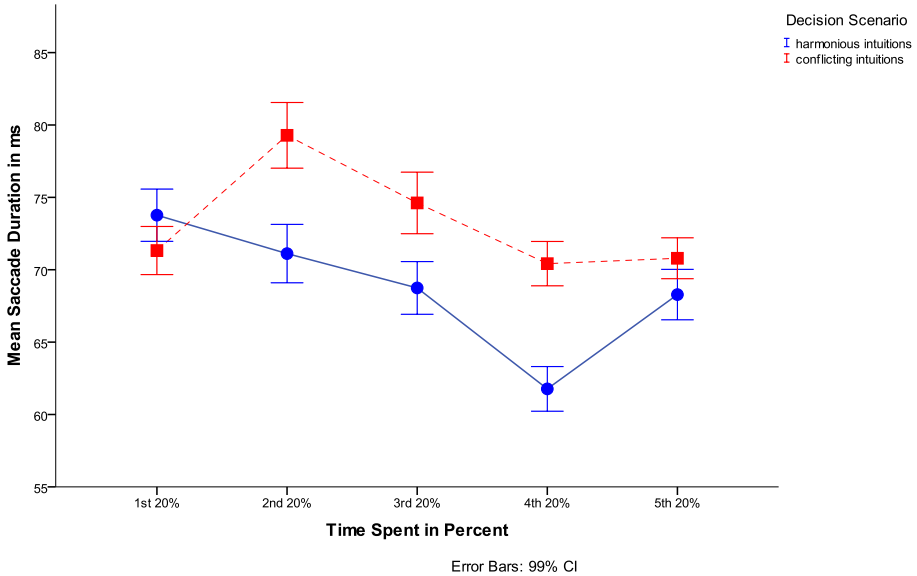
Next, Figure 5 compares the evolution of legislators' single *Saccade Duration*. As expected, for the first twenty percent of the evaluation time average *Saccade Duration* is similar. For the consecutive three time blocks this is different. Legislators facing agreeing intuitions show steadily dropping means of single *Saccade Duration* and by implication, a shrinking willingness to "hit the road" for potentially helpful information, which conforms to the make-sense logic. At the end of the experiment, there is again an increase in search radius and probably pre-indicates subjects' completion of the experiment. Legislators dealing with conflicting political intuitions, on the other hand, increase their search radius significantly during the second time block. From there, we can observe a constant drop and a leveling off toward the end of the experiment. This pattern might indicate the emergence of a conclusion that begins to feel right and starts limiting legislators' ability to consider more distant spots of potential interest, as we would expect based on a feels-right approach.

Figure 4: Evolution of Single Fixation Duration



Note: Graphical summary of the interaction between the time spent in percent and the experimental treatment (*harmonious intuitions* represented by circles vs. *conflicting intuitions* represented by squares) on legislators' mean *single fixation duration* in milliseconds. Confidence intervals reflect 99% level of confidence.

Figure 5: Evolution of Single Saccade Duration

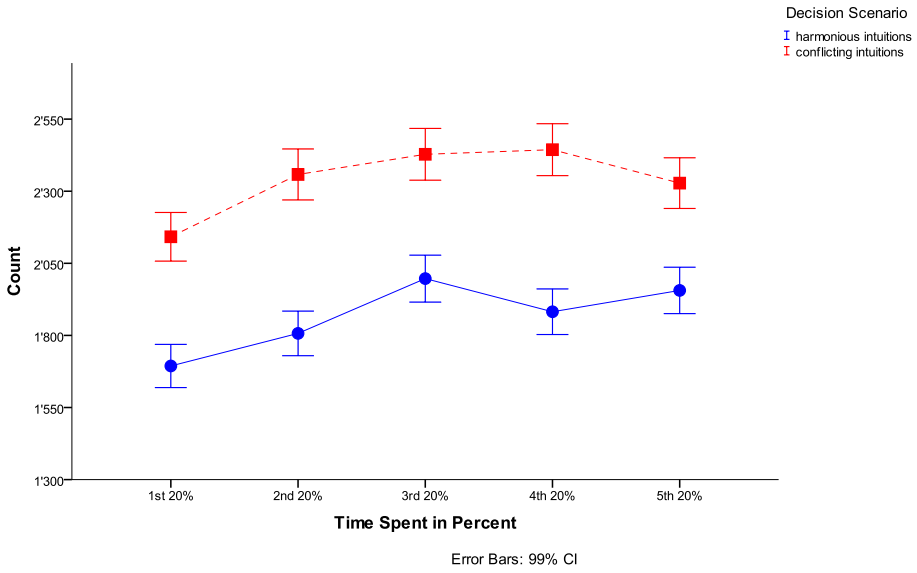


Note: Graphical summary of the interaction between the time spent in percent and the experimental treatment (*harmonious intuitions* represented by circles vs. *conflicting intuitions* represented by squares) on legislators' mean *single saccade duration* in milliseconds. Confidence intervals reflect 99% level of confidence.

Figure 6 shows the evolution of legislators' *Adjacent Fixations* that aim to integrate different pieces of information. Overall mean counts are expectedly higher for legislators

dealing with conflicting intuitions. In addition, information integration for the conflicting intuitions condition loses intensity as final conclusions begin to emerge and as information use in t starts to bias information search in $t + 1$. The overall pattern suggests that legislators grasp the story given that the information was telling at approximately 60% of the evaluation time and therefore formed a position. From there, we assume that there was nothing more to gain from an increase in integration efforts. For the easy tradeoff, however, the information integration pattern is at odds with what a makes-sense logic would suggest. It is difficult to explain why legislators that have agreeing intuitions and know how to position keep increasing their integration efforts until the third time block. We might assume that politicians are collecting arguments for their intuitive position in this phase and are preparing for upcoming debates. Yet, this is an issue that eye-tracking data cannot illuminate and for which interview data would be better suited to explore the reasoning behind the integration process.

Figure 6: Evolution of Adjacent Fixations between Areas of Interest



Note: Graphical summary of the interaction between the time spent in percent and the experimental treatment (*harmonious intuitions* represented by circles vs. *conflicting intuitions* represented by squares) on legislators' mean count of *adjacent fixation between different areas of interest*. Confidence intervals reflect 99% level of confidence.

CONCLUSIONS AND IMPLICATIONS

The intuitionist model of legislators' information behavior is based on insights from decision-making research and in particular on research on how people deal with questions where moral evaluation is involved. In contrast to rationalist explanations, the intuitionist model does not assume that legislators' information behavior follows conscious purposes. Neither does the model conclude that behavior that runs contrary to presumed objectives is the result of human bounded rationality or structural insufficiencies in the provision of policy information. Instead, the intuitionist model makes three suggestions and thereby offers a different interpretation of the empirical facts documented by incrementalist, rational choice, and institutionalist accounts of legislators' information behavior.

First, the intuitionist model of legislators' information behavior suggests the hard standing of information in the political arena is not just because people are ideological. It claims that this is not only because people are driven by interests. The model suggests that it is also the case that following interest and ideology is *easy* compared to thinking. Eye-tracking data showed that as soon as political intuitions conflict and fail to provide clear orientation, legislators' cognitive workload is increased and interest in information increases. Second, according to the intuitionist model, selective information search is not consciously applied by legislators to improve reelection prospects, to better achieve particular policy objectives, or to reach any other goal more efficiently, as rationalist models suggest. Neither is biased information search a result of limited human capacity to perform proper analysis. Rather, lawmakers' information search is restricted by particularly strong worldviews and group structures that prevail within legislatures and that prioritize consistency with ideology and party at the expense of accuracy.

Second, the intuitionist model does not equate legislators' information use in political dispute with information use for decision-making. Rather, it starts with what information contributes to individual's deliberations and provides on this basis suggestions on how information use in political debate could be understood. The intuitionist model suggests that if a policy issue triggers agreeing intuitions, available evidence is used by legislators according to whether it fits with the unquestioned a priori theory about this issue. To external observers information use in policy debates where positions among political camps are strong and different might indeed resemble misuse or even abuse of policy evidence. The truth is, however, that information cannot speak for itself (Bardach, 1984; Majone, 1992), and when political predispositions are in line the intuitionist model suggests that legislators believe that they are using available information the only way it makes sense to use it. By contrast, if policy questions trigger contradictory political intuitions and positioning within political camps becomes ambiguous, legislators' information use might look substantive to external observers. The intuitionist model, however, suggests that it is more likely to assume that legislators use policy evidence to restore consistency among political points of reference and not to reach accuracy. Although the evolution of legislators' information search provides partial support for this last hypothesis, eye-tracking data is not able to provide conclusive evidence on this matter. Data with qualitative content is needed to understand legislators' information use in problematic and unproblematic decision scenarios.

Finally, our data suggest that perhaps we should reconsider the aspirations that public managers and scholars seem to have concerning politicians reading performance information. In practice, performance budgets, performance reports, evaluation results, and strategic plans could be looked upon as a work of reference – a provision of information in case of need. As far as political intuitions suffice to make sense in a decision situation, performance information may serve as an argumentative amplifier. In a situation of ideological ambiguity, however, balanced information is still needed to find one's way back to the straight and narrow that allows for a situation that feels right.

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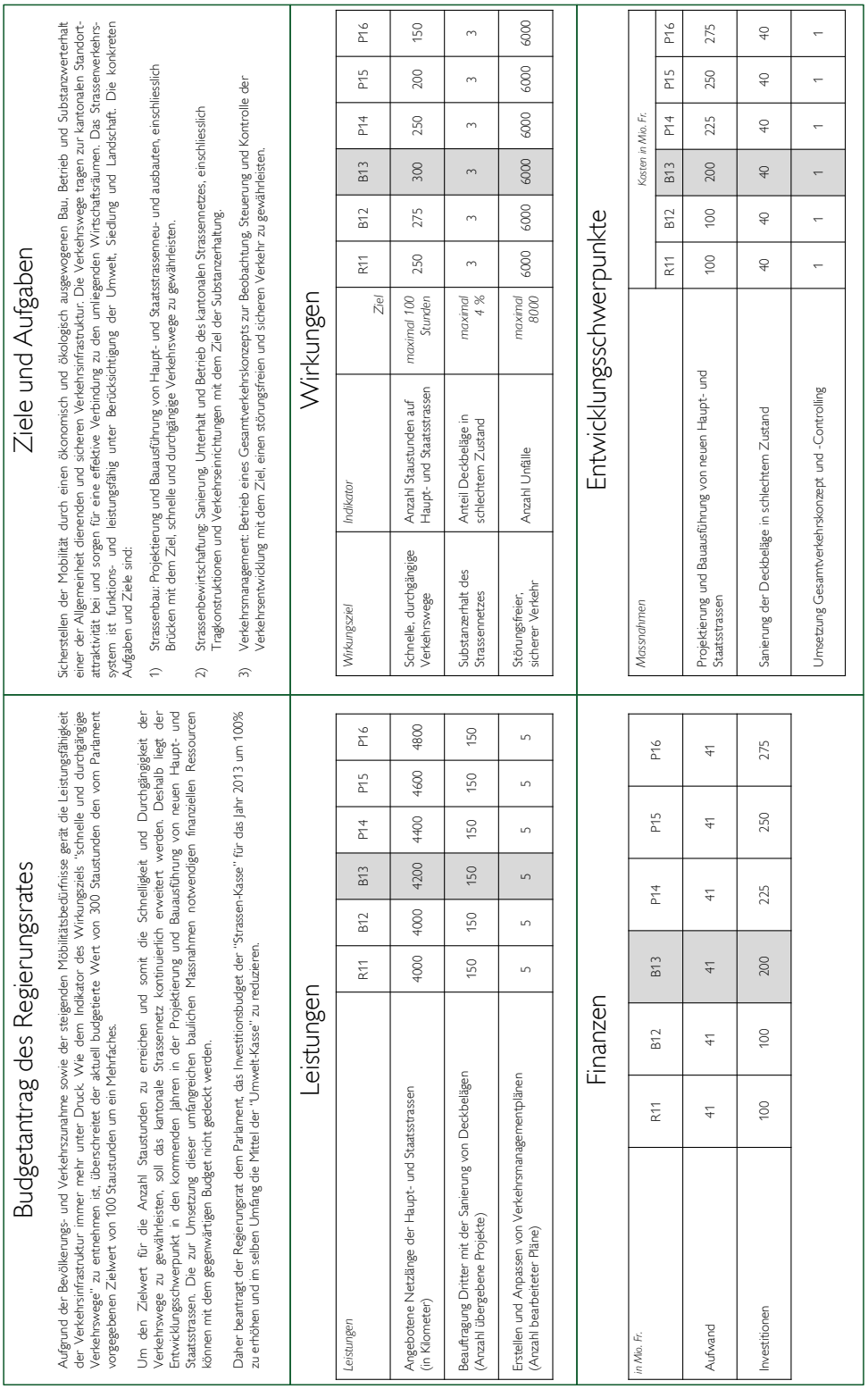
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APPENDIX A: EXPERIMENTAL BUDGET DOCUMENT



Budgetantrag des Regierungsrates

Aufgrund der Bevölkerungs- und Verkehrszunahme sowie der steigenden Mobilitätsbedürfnisse gerät die Leistungsfähigkeit der Verkehrsinfrastruktur immer mehr unter Druck. Wie dem Indikator des Wirkungsziels "schnelle und durchgängige Verkehrswege" zu entnehmen ist, überschreitet der aktuell budgetierte Wert von 300 Staustunden den vom Parlament vorgegebenen Zielwert von 100 Staustunden um ein Mehrfaches.

Um den Zielwert für die Anzahl Staustunden zu erreichen und somit die Schnelligkeit und Durchgängigkeit der Verkehrswege zu gewährleisten, soll das kantonale Strassennetz kontinuierlich erweitert werden. Deshalb liegt der Entwicklungsschwerpunkt in den kommenden Jahren in der Projektierung und Bauausführung von neuen Haupt- und Staatstrassen. Die zur Umsetzung dieser umfangreichen baulichen Massnahmen notwendigen finanziellen Ressourcen können mit dem gegenwärtigen Budget nicht gedeckt werden.

Daher beantragt der Regierungsrat dem Parlament, das Investitionsbudget der "Strassen-Kasse" für das Jahr 2013 um 100% zu erhöhen und im selben Umfang die Mittel der "Umwelt-Kasse" zu reduzieren.

Ziele und Aufgaben

Sicherstellen der Mobilität durch einen ökonomisch und ökologisch ausgewogenen Bau, Betrieb und Substanzwerterhalt einer der Allgemeinheit dienenden und sicheren Verkehrsinfrastruktur. Die Verkehrswege tragen zur kantonalen Standortattraktivität bei und sorgen für eine effektive Verbindung zu den umliegenden Wirtschaftsräumen. Das Strassenverkehrssystem ist funktions- und leistungsfähig unter Berücksichtigung der Umwelt, Siedlung und Landschaft. Die konkreten Aufgaben und Ziele sind:

1) Strassenbau: Projektierung und Bauausführung von Haupt- und Staatsstrassenneu- und ausbauten, einschliesslich Brücken mit dem Ziel, schnelle und durchgängige Verkehrswege zu gewährleisten.
2) Strassenbewirtschaftung: Sanierung, Unterhalt und Betrieb des kantonalen Strassennetzes, einschliesslich Tragkonstruktionen und Verkehrseinrichtungen mit dem Ziel der Substanzerhaltung.
3) Verkehrsmanagement: Betrieb eines Gesamtverkehrskonzepts zur Beobachtung, Steuerung und Kontrolle der Verkehrsentwicklung mit dem Ziel, einen störungsfreien und sicheren Verkehr zu gewährleisten.

Leistungen

Leistungen	R11	B12	B13	P14	P15	P16
Angebotene Netzlänge der Haupt- und Staatsstrassen (in Kilometer)	4000	4000	4200	4400	4600	4800
Beauftragung Dritter mit der Sanierung von Deckbelägen (Anzahl übergebene Projekte)	150	150	150	150	150	150
Erstellen und Anpassen von Verkehrsmanagementplänen (Anzahl bearbeiteter Pläne)	5	5	5	5	5	5

Wirkungen

Wirkungsziel	*Indikator*	*Ziel*	R11	B12	B13	P14	P15	P16
Schnelle, durchgängige Verkehrswege	Anzahl Staustunden auf Haupt- und Staatsstrassen	*maximal 100 Stunden*	250	275	300	250	200	150
Substanzerhalt des Strassennetzes	Anteil Deckbeläge in schlechtem Zustand	*maximal 4 %*	3	3	3	3	3	3
Störungsfreier, sicherer Verkehr	Anzahl Unfälle	*maximal 8000*	6000	6000	6000	6000	6000	6000

Finanzen

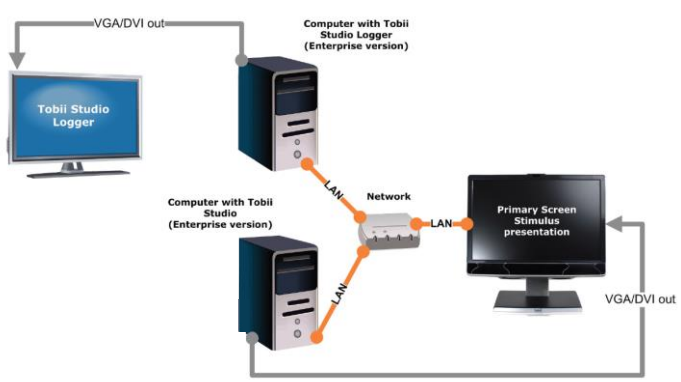
in Mio. Fr.	R11	B12	B13	P14	P15	P16
Aufwand	41	41	41	41	41	41
Investitionen	100	100	200	225	250	275

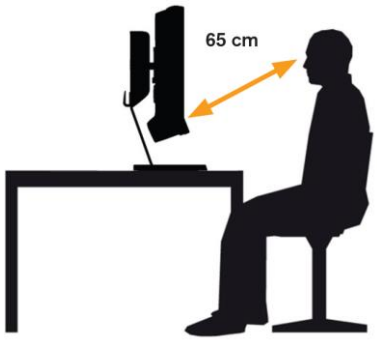
Entwicklungsschwerpunkte

Massnahmen	*Kosten in Mio. Fr.*					
	R11	B12	B13	P14	P15	P16
Projektierung und Bauausführung von neuen Haupt- und Staatsstrassen	100	100	200	225	250	275
Sanierung der Deckbeläge in schlechtem Zustand	40	40	40	40	40	40
Umsetzung Gesamtverkehrskonzept und -Controlling	1	1	1	1	1	1

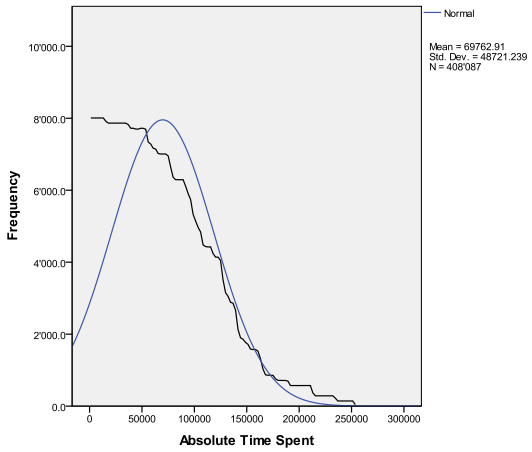
Note: The configuration of information tiles was randomized for each subject.

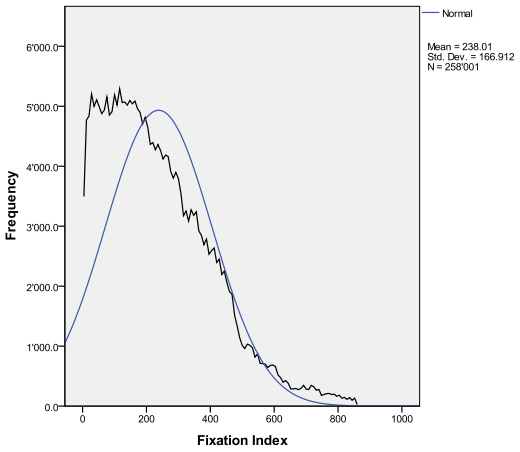
APPENDIX B: EXPERIMENTAL SETTUP

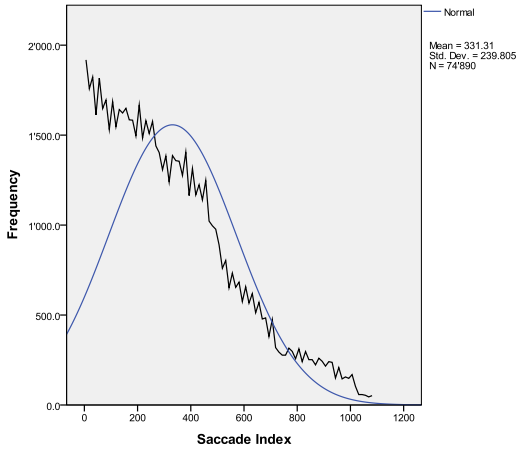


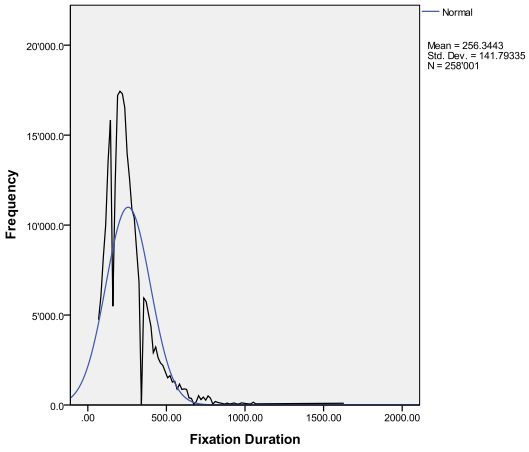


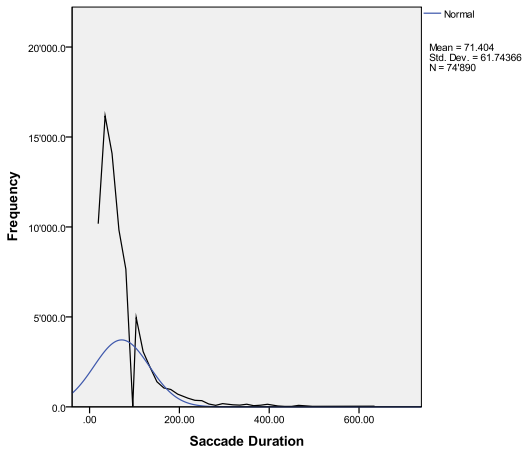
APPENDIX C: DENSITY CURVES FOR INTERVAL EYE TRACKING VARIABLES











APPENDIX D: DECISION DIFFICULTY MEASURES

Scale of 5 items.[8] Note. Each item is followed by a 7-point scale ranging from 1 [*strongly disagree*] to 7 [*strongly agree*].

Please rate your level of agreement with the following statements, with respect to the current decision situation, except for item 1.

1. For me, this decision is... (7-point scale ranging from 1 [*very easy*] to 7 [*very difficult*])
2. I would need more time to decide.
3. I would not ponder for a long time on this decision.
4. I feel very ambivalent about this decision.
5. For this decision, I feel certain which option to choose.

Table 5: Two Independent-Samples T Test on Perceived Decision Difficulty

Scale means (std. deviation) for perceived Decision Difficulty (n = 56).

			Scale Means	
	t-Statistic	*p* – value	Harmonious Intuitions	Conflicting Intuitions
Overall Decision Difficulty[a, b]	-3.65	.001	1.96 (1.32)	3.32 (1.47)
Easiness[a]	*-3.04*	*.004*	*2.00 (1.23)*	*3.11 (1.50)*
Need for Additional Time[a]	*-2.34*	*.023*	*1.97 (1.57)*	*3.04 (1.85)*
Readiness to Decide[a]	*-1.86*	*.068*	*1.86 (1.55)*	*2.67 (1.69)*
Ambivalence[c, d]	*3.90*	*.000*	*6.28 (1.28)*	*4.48 (2.05)*
Certainty of Decision[c]	*3.96*	*.000*	*5.76 (1.75)*	*3.74 (2.07)*

Note. Ratings for all items on decision difficulty were made on 7-point scales.
[a] The higher the score, the higher the level of perceived decision difficulty.
[b] To compute the mean of the overall decision difficulty, scale means of *Ambivalence* and *Certainty of Decision* are converted as follows: 8 – x, where x is the scale mean of each variable.
[c] The higher the score, the lower the level of perceived decision difficulty.
[d] Levene's test indicated unequal variances ($F = 12.60, p = .001$). We therefore adjusted the degrees of freedom from 54 to 43.

[8] With respect to internal consistency this decision difficulty measures yielded an α of .89 in the study of (Hanselmann & Tanner, 2008).