# Information for Politics: The Polarizing Effect of Performance Budgets on Legislators' Allocation Judgments

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The President:

Prof. Dr. Thomas Bieger

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# ABSTRACT

The purpose of this dissertation is to provide insights on the information behavior of legislators in general and on the role of performance information for lawmakers' budgeting decisions in particular. The thesis consists of an introductory part, three articles, and a conclusion. The introduction illuminates public administration reformers' tendency to produce more information for political deliberations. It discusses the origin of this tendency and identifies the hope associated with evidence-based debates. The introductory part suggests that the presumed effect of more information is the facilitation of consensus. Article 1 begins with the examination of this hypothesis by drawing an outline of existing scholarly work on this issue. Article 2 is concerned with the impact of performance information on legislators' budgeting decisions. It provides an operationalization of the legislative context that shapes the way available evidence is considered by lawmakers. Based on insights from a decision-making experiment, it concludes that the provision of performance information to the budgeting process is likely to increase polarization among legislators. Article 3 asks about the drivers of legislators' information behavior and claims that existing rationalist accounts fall short in explaining why legislators decide to use, ignore, or misuse policy information. Article 3 provides an alternative perspective on legislators' information behavior. This notion is based on the assumption that policy issues represent moral problems for legislators that require moral judgments about which available options are good or bad with respect to the core beliefs shared by a particular ideological camp. Moral judgments are claimed to be preordained by political intuitions. Reasoning and information gathering follow post hoc. Only if political intuitions contradict, this notion suggests, deliberation precedes judgment and is less biased toward a legislator's preferred side. Results from an eye-tracking experiment with actual legislators provide support for this model's hypotheses and offer an alternative understanding for information's use, nonuse, or misuse by elected representatives. Finally, the conclusion of this dissertation highlights the thesis' contributions, implications, and limitations with respect to research, theory, and practice of performance budgeting for legislatures.

# ZUSAMMENFASSUNG

Diese Dissertation setzt sich mit dem Informationsverhalten von Parlamentarierinnen und Parlamentariern auseinander. Sie untersucht im Besonderen die Rolle von Performance Informationen für Budgetentscheidungen. Die Dissertation besteht aus einer Einleitung, drei Artikeln und einem Schlussteil. Die Einleitung widmet sich der allgemeinen Tendenz, politischen Debatten immer mehr Information zuzuführen. Die Einleitung kommt zum Schluss, dass mit dieser Tendenz die Annahme einhergeht, Konsens in der politischen Auseinandersetzung voranzutreiben. Artikel 1 beginnt mit der Untersuchung dieser Hypothese, indem es relevante Publikationen über das Informationsverhalten von Politikerinnen und Politikern mit dem Ziel analysiert, Implikationen für künftige Forschung auf diesem Gebiet abzuleiten. Artikel 2 befasst sich mit dem Einfluss von Performance Informationen auf die Budgetentscheidungen von Parlamentarierinnen und Parlamentariern. Es identifiziert diejenigen Variablen des parlamentarischen Kontexts, welche die Beziehung zwischen Information und individueller Entscheidungsfindung prägen und den Einfluss von Daten auf den Entscheidungsausgang mitbestimmen. Basierend auf einem Entscheidungsexperiment mit Kantonsparlamentarierinnen und -parlamentariern wird gezeigt, dass Information die Polarisierung unter den Volksvertreterinnen und -vertretern vorantreibt. Artikel 3 entwickelt einen alternativen Erklärungsansatz für das Informationsverhalten von Politikerinnen und Politikern. Ausgangspunkt ist die Annahme, dass es sich bei politischen Fragen um moralische Auseinandersetzungen handelt, aus der Sicht der Volksvertreterinnen und -vertreter. Artikel 3 behauptet, dass diese Art von Fragen von Parlamentarierinnen und Parlamentariern basierend auf politischer Intuition beantwortet wird. Begründungen und Fakten werden post hoc geliefert bzw. konsultiert. Nur wenn die politische Intuition keine Orientierung bietet, weil eine Frage die Politikerin oder den Politiker in einen Wertekonflikt gebracht hat, gehen Einschätzung und Information dem Urteil voran und sind daher weniger verzerrt. Die Verhaltenshypothesen dieses neuen Ansatzes werden mithilfe eines sog. Eye-Trackers experimentell getestet und können nicht verworfen werden. Schliesslich werden in der Konklusion dieser Dissertation der Beitrag der vorliegenden Arbeit an Forschung und Praxis festgehalten sowie methodische, empirische und theoretische Einschränkungen diskutiert.

# INTRODUCTION

## 1 Why Do We Produce More Policy Information?

In the past few decades, the political arena and its actors have experienced a tremendous increase in the availability of policy information. By information, I mean any combination of data that informs about a *difference* in the pattern of reality (Case, 2007, p. 5). By policy information, I mean information that is purposefully embedded in an explanatory framework that shows how changes in some activity X will lead to changes in a particular outcome Y – where X stands for a program, budget, law, or any other public activity, and Y represents a purpose such as crime prevention, public health, defense, economic growth, or environmental protection (Weiss, 1983, p. 225). There are no exact numbers highlighting the precise increase in the availability of policy information, but Shulock (1999) suggests some indicators that illustrate the trend within the context of the U.S. Since the end of the 1970s, for example, policy jobs inside the government have grown rapidly. Every branch of government has recruited its staff of analysts, created its departments, and installed its databases that proliferate information to elected principals about the actual or potential consequences of political decisions, public programs, and activities, either for society as a whole or for particular fractions. The production of policy information has increased outside of government, as well. Scientific disciplines such as economics, political science, law, social psychology, engineering, and many other fields have at least one journal that aims to disseminate specific knowledge to public policy decision-makers. Universities have also expanded their curricula and have established graduate programs that "emphasize the applied and quantitative dimensions of policy making" (About GSPP, 2014). Their aim is to prepare students to make an impact on public policy decisions by providing evidence-based policy recommendations (Ellwood, 2008). Finally, organizations such as the RAND Corporation, Heritage Foundation, Hoover Institution, Urban Institute, and many others have made public policy "one of the established knowledge industries in late twentieth century America" (Dunn, 2012, p. 50).

I understand the increased exposure of politicians to policy information to be a consequence of attempts by political governance systems to cope with two major challenges. First, the differentiation of society progresses as technological development and professionalization evolve. To maintain political steering capacity,

executive branches of government – and public administrations in particular – try to mirror this development (Luhmann, 1964, 1966, 1968). Agencies are established and staff are hired to acquire the expertise necessary to answer ever more heterogeneous societal demands with effective political provisions (Mayntz, 1983; Benz, 1994). Within the executive branch, itself, this development brings about a situation where "[t]he 'political master' finds himself in the position of the 'dilettante' who stands opposite the 'expert', facing the trained official who stands within the management of administration" (Weber, 1958, emphasis in original). This Weberian asymmetry of information and expertise expands from the executive to the legislature more intensively, the stronger the separation of powers between the two branches governments is. As a result, and to regain policy expertise and decision-making capacity vis-à-vis the executive, legislatures have established their own institutions of information provision and have themselves specialized through committee structures (Baron, 2000; Bimber, 1991; Cohen, 1973; Gilligan & Krehbiel, 1989; Jones, 1977). The goal is to prevent a situation where legislatures become ratifying executive bodies of policy choices made by the executive (Engi, 2007).

Second, information provision to politicians has also increased as two sets of ideas on how organizations should best be designed and controlled gained practical momentum: the decentralization of authority and structures (Niskanen, 1971) and a shift in the focus of bureaucratic oversight from inputs to results (Weingast & Moran, 1983). As mentioned, bureaucracies follow a mirroring strategy to keep up with the demands of increasingly specialized societies (Niskanen, 1971). In so doing, bureaucracies reduce the significance of hierarchy as an organizing principle (Mayntz, 1995, 1997) and make direct political control through inputs more difficult and less effective. Oversight, however, is claimed to remain intact as long as politicians are provided with information on the outcomes achieved by administrative activities (Weingast & Moran, 1983). Therefore, various reforms have been introduced to almost continuously inform elected officials, not only on the resources allocated to various activities and programs, but also on the societal effects of the corresponding administrative behavior (Aucoin, 1990).

In addition to these factual necessities for the rise in information, there is a more fundamental reason for why information of all kinds is increasingly present in the political arena. Political columnist Ezra Klein (2014) has recently summarized the simple but deeply rooted societal belief "that many of our most bitter political battles are mere misunderstandings. The cause of these misunderstandings? Too little

information […].” This notion suggests that if policymakers and the citizenry were better informed, there would be less controversy and hence, more consensus. We therefore keep producing and providing information to policymakers on virtually any issue and expect them to ground their judgments in factual evidence. This is how we think competent decisions should be made (Feldman & March, 1981; March & Olsen, 1984). With this in mind, Carol H. Weiss (1983), one of the most vigilant observers of policy information use, notes that:

> Few ideological commitments in modern Western societies are stronger than the ideas of rationality and intelligent choice, and no institutions are more normatively committed to the application of information to decisions than bureaucratic organizations. In effect, they demonstrate their intelligence and the quality of their decisions […] by appropriate performance of the rituals of information processing. (Weiss, 1983, pp. 233-234)

The so-called “More Information Hypothesis” is seductive. It not only suggests that there really are solutions to the most contested issues in our societies, but that it is also in people’s genuine interest to find the truth. Since societal fractions agree on the overall policy goals and that it is desirable to promote, for example, safety, health, or prosperity (Kahan, 2011, p. 7), “few, if any people with an interest in good policy making would argue that there should be less evidence” (Tenbensel, 2004, p. 189). The More Information Hypothesis holds the promise that it is only a matter of time before scientific consensus over the best way to reach these goals reconciles opposing political camps. This belief operates in virtually any political debate; it is dominant when we argue over tangential issues such as vaccination against human papillomavirus ([HPV]; Colgrove, 2006) or firearm regulations (Boylan, Kates, Lindsey, & Gugala, 2013); it is a part of our controversies over more complex issues such as climate change (Stern, 2007); and it features in highly ethical disputes such as those over abortion (Giubilini & Minerva, 2013). In short, the presence of the More Information Hypothesis in our political debates illustrates our commitment to the notion of intelligent choice and to the quality of evidence-based policy, even “in situations where criteria for ‘intelligence’ and ‘quality’ are highly ambiguous” (Weiss, 1983, p. 234, emphasis in original).

Only recently has research begun to empirically review whether more information is truly able to depolarize political disputes. Kahn, Jenkins-Smith, & Braman (2011) conclude that members of the public are as divided about issues of collective relevance today as they were at the beginning of the research project at the end of the 1990s.

Although technical experts have come to largely agree on the risk of nuclear waste (Slovic, Flynn, & Layman, 1991), the toxicity of groundwater chemicals such as arsenic and radon (Kahan, Slovic, Braman, & Gastil, 2006), and the vaccination of schoolgirls against HPV (Kahan, 2013b), societal fractions continue to disagree on these topics, but are now equipped with scientific evidence as their argumentative ammunition. It is not that a general skepticism of science drives polarization, but rather that political camps develop and endorse "opposed claims about what the scientific evidence *really* shows" (Kahan, Jenkins-Smith, & Braman, 2011, p. 148, emphasis in original). For example (see Kahan, 2013a), while most liberals believe that global warming is caused by human activity, conservatives question the significance of this factor on the overall global climate cycle (Armitage, 2005; Cameron, 2005). With respect to nuclear power plant waste, conservatives believe that safe disposal is no problem and can be achieved by geological isolation deep under the earth's surface; liberals do not believe that this is a solution and recall the existence of tectonic movements (Jenkins-Smith, Silva, Nowlin, & Delozier, 2011). The vaccination of schoolgirls against HPV is considered vital by liberals for promoting women's health status; conservatives claim that vaccination will eventually endanger this policy objective, because it increases the likelihood of unprotected sex (Kahan, Braman, Cohen, Gastil, & Slovic, 2010). Finally, liberals are for stricter gun regulations and support laws limiting the possession of firearms to decrease crime; conservatives, on the other hand, reply that crime will increase if law-abiding citizens are not allowed to protect themselves (Boylan, et al., 2013).

A natural explanation for the public's ongoing controversies over these issues is provided by the so-called "Science Comprehension Thesis" (Irwin & Wynne, 1996), which suggests that citizens are simply less exposed to policy evidence and are unable to comprehend scientific analysis on these issues as well and as rapidly as scientists do. Hence, established facts take time to make their way to the ordinary citizen. In contrast, Kahan and his colleagues argue that if the Science Comprehension Thesis holds water, "one would expect disagreement on issues like climate change to abate in the face of widespread dissemination of scientific findings" (Kahan, Jenkins-Smith, & Braman, 2011, p. 148). In addition, science literacy should correlate with agreement. In the authors' view, it is not because citizens lack scientific knowledge. Nor are citizens unexposed or indifferent to scientific results. Rather, citizens usually seem to "disagree about what scientists are telling them" (Kahan, Jenkins-Smith, & Braman, 2011, p. 148). Kahan (2010) has proposed an alternative explanation for the impotence

of policy information to reconcile contesting societal fractions. The "Cultural Cognition Thesis" suggests that it is not as important for people to find the right answer as it is to reach a conclusion that is consistent with the belief system of their peer group. Psychological mechanisms that are known to bias people's information processing[1] are claimed to interact with the values of one's group, and – based on the same facts – produce not only skewed, but also opposing conclusions that fit their beliefs and those of the like-minded people around them. The Cultural Cognition Thesis concludes that people from different societal fractions disagree because they have mental inventories of policy information that are biased according to their cultural predispositions. For any side, the share of policy information that confirms their own view outweighs contradicting evidence. Contrary to the Science Comprehension Thesis, the Cultural Cognition Thesis implies that increased science literacy should cause people to disagree even more strongly with what they do not believe in anyway. This is because science literacy improves individuals' ability to argue for their group-defined position. In a widely noted experimental study published in *Nature* and *Nature Climate Change*, Kahan and his colleagues demonstrated the polarizing impact of science literacy on the perception of climate change (Kahan et al., 2012; Kahan, 2012).

# 2 Budgeting Reforms and The More Information Hypothesis

The tendency to provide more information to politicians to make consensus more likely has also developed within the sphere of public budgeting (Hilton & Joyce, 2012). From a technical perspective, a budget is the government plan for how to accomplish its programs to achieve given policy objectives within a particular time (Smith & Lynch, 2004, p. 37). This plan includes estimates about the current and required state of public resources necessary to execute the plan. A government's budget serves many functions (White, 1985, p. 624): as fiscal policy, it influences a nation's economy; it defines priorities among policy objectives; for welfare economics, a budget can be viewed as an exercise to arrive at the ratio between the public and private sectors that maximizes the social product; it is an instrument to exert oversight and control over the administration's activities; it provides accounting, because it includes a comprehensive statement about the past year's government

1 For example, effective risk appraisal (Peters, Burraston, & Mertz, 2004); availability heuristics (Tversky & Kahneman, 1973); biased assimilation of information (Munro & Ditto, 1997); source credibility (Earle & Cvetkovich, 1995); and avoidance of cognitive dissonance (Festinger, 1957).

activities and its plans for the following year; finally, budgeting is a platform for struggles for political power and whose values and policy objectives are to prevail.

From the perspective of political actors, public budgeting is one of the most central fields of policymaking. The history, current status, and projection of the public household deliniate the possibilities, define the limits of state activity, and shape the decisions about which societal needs will be satisfied and which will be deterred. Given the scarcity of available resources, a budget shows whose preferences have triumphed in determining which government activities will be executed and to what degree (Wildavsky, 1961). Government budgeting is therefore a political process that produces losers and winners (Smith & Lynch, 2004, p. 37; Bretschneider, Straussman, & Mullins, 1988, p. 305), and the result of this process reflects the strength of the budgetary actors such as institutions, parties, or individuals.

Despite its political nature, the budgeting process, in general, and the way in which elected officials allocate public monies, in particular, have been no less subject to the notions of rationality and intelligent choice than any other policy domain. It is not that reformers have not noticed the political dimension of public budgeting, but from an analyst's perspective, government budgeting decisions suffer from three fundamental problems to which more or less intelligent solutions exist (Lewis, 1952). Based on Hallerberg (2012), I will briefly illustrate each of these problems to provide an understanding for the objectives of public budgeting reforms and to highlight the "optimal allocation" rationale that has driven the increase in information supplied to politicians.

*The Common Pool Resource Problem (Ostrom, 2011)*: This problem arises in government budgeting when the benefit from government spending goes to particular groups, but the revenues necessary to finance these expenditures come from general taxes. In this situation, politicians tend to ignore the effects of their spending decisions on the common pool, that is, on the overall government revenues. As a result, the common pool of resources suffers from a potential overuse. The Common Pool Resource Problem develops for various reasons that obfuscate the full tax implications of politicians' spending decisions (Weingast, Shepsle, & Johnsen, 1981). First, politicians keep increasing government spending, because the benefits they generate for their particular electorate through the additional expenditures exceed the additional costs for their district. Instead, they are shared by the countrywide tax base. Second, because this is true for all elected officials, this situation facilitates logrolling behavior and encourages informal agreements among politicians to support each other's

expenditure plans. Lastly, the Common Pool Resource Problem is aggravated by the bottom-up nature of public budgeting and by fragmented decision-making structures. Politicians usually have a mandate for a particular policy domain and are responsible for achieving specific policy objectives, for example, the promotion of safety. If individual spending decisions are made in a decentralized way that obscures an overall comparison, and if the proposals from all policy fields are simply aggregated, the full tax implications will not be considered in the overall budget proposal.

*The Moral Hazard Problem (Arrow, 1963)*: This problem is related to the Common Pool Resource Problem in that it also characterizes a situation in which politicians ignore the tax effects of their spending decisions. It refers to the risky fiscal behavior that arises due to decision-makers believing themselves to be safe. The term "Moral Hazard" has been coined by writers on insurance economics. It describes a phenomenon "of demanding more at a zero price than at a positive one" and some kind of "fraud in the collection of benefits" (Pauly, 1968, p. 535). In the context of public budgeting, the Moral Hazard Problem refers to the risky fiscal behavior of (local) decision-makers that expect, first, to be able to finance their spending through a wider (national) tax base, and second, to be bailed out by the national government in the case of financial trouble. This argument may seem too abstract and unrealistic to occur. However, its existence and the severe consequences thereof have been amply demonstrated during the debt crises of some European countries in the past few years (Heipertz & Verdun, 2010).

*The Principal Agent Problem (Weingast, 1984)*: This problem originates with the delegation of decision-making authority from one actor to another and the subsequent asymmetry of information that emerges between them. In the context of public budgeting, two relationships are relevant: on the one hand, the delegation of decision-making authority from the citizens to politicians; and on the other hand, the delegation of decision-making authority from politicians to the representatives of the bureaucracy. The Principal Agent Problem arises if the "agent" – the one to whom the decision-making authority has been delegated – does not implement what the "principal" – the one who has delegated the decision-making authority – has demanded. For the citizen-politician relationship, the Principal Agent Problem implies that politicians prioritize the allocation of public monies differently from what the electorate has expressed through their voting behavior. For the politician-bureaucrat relationship, the Principal Agent Problem implies that bureaucrats hide the true costs of their activities so that elected officials do not shorten the agency's budget

(Niskanen, 1971; Banks, 1989). Principal-agent models suggest that preference differences between the principal and agent are shaped by different incentive mechanisms, time horizons, or other dimensions that cause the agent to exploit or misuse the information advantage at the expense of the principal.

These three problems represent the constants around which public budgeting reforms have been, and still are, designed. Lengthy descriptions of the history of (U.S.) budget reforms exist (e.g., Dawes, 1923; Banfield, 1949; Schick, 1966, 1973; Harkin, 1982; Downs & Larkey, 1986; Pollitt & Bouckaert, 2011; Hilton & Joyce, 2012). As my goal is to highlight the rationale that drives information provision to politicians, I will focus only on the major ideas that have changed the fundamentals of government budgeting from time to time. These ideas can be characterized primarily as attempts to make government officials more accountable, public activities more efficient, and public programs more effective so that politicians' allocation decisions are improved with respect to the Common Pool Resource Problem, The Moral Hazard Problem, and the Principal Agent Problem through the provision of more and different kinds of information.

Early government budgeting reforms were introduced to ensure accountability. What budget reformers wanted was to develop a system capable of binding operating officials to the policies ordered by their superiors. Therefore, apportionments, line-itemization, and restrictions on shifting funds from designated purposes were implemented and can be described as control-oriented. The information these early systems produced for the administration (and for politicians) showed whether designated budgets were spent accordingly, and whether funds had been under- or overused during a budget period. The reforms that followed from the 1950s onwards were designed to strengthen the management and planning aspects within government. Initiatives such as Program Budgeting, the Programming-Planning-Budgeting System, Management by Objectives, Performance-Based Budgeting, and Zero-Based Budgeting were designed to move from an input-oriented budgeting process to a results-focused approach. The information these systems provided was meant to inform the budget actors whether public resources were used efficiently.

At the beginning of the 1990s, a global wave of budgeting reforms[2] was propelled by the general reorganization of the politico-administrative system under the banner of

2 See Pollitt & Bouckaert (2011, pp. 75-87) for national trajectories in financial management reform; OECD (2007) for an overview of performance budgeting reforms in Australia, Canada, Denmark, Korea, The Netherlands, Sweden, the United Kingdom, and the United States; Holmes

New Public Management. Compared to previous reforms, these changes were different in two major ways. First, this time, the budget actors were systematically provided with measurements about the impact that government services had on society and were, therefore, informed whether a designated activity was worth the money spent. Second, it was the budget reformers' explicit aim to include legislatures in the quest for improving the way public resources are apportioned. Before this, budget reforms were an activity primarily associated with the executive branch of government. I hypothesize that first, these differences were possible due to the improvements in policy analysis techniques, such as regression and other methods of causal inference, that offered the possibility of doing more than "just" measuring the output of government activities. The information that was made available through new monitoring and budgeting systems allowed for showing the effects of current performance on the outcomes – or approximations of them – and to estimate future effects. Second, this in turn offered the opportunity for reformers to envision legislatures as more than guardians of the public purse. The possibility of assessing public programs' net marginal utilities for society allowed for designating legislatures as the purchasers of public value.

Today, and for those pioneering countries that have changed their budgeting rules and processes according to this notion, the executive's budget proposals link government outputs with their costs, inform about the added (or lowered) public value from additional (or reduced) expenditures, and estimate these relationships in the short- and mid-term for each department, policy area, public program, or activity. In this new system of government budgeting, the members of parliament are expected to clearly articulate their performance expectations, compare proposed financial changes for their effects on the desired outcome, and make informed allocation decisions. Although there are large differences with respect to the stage of this reform process among countries (OECD, 2009, p. 93), the integration of the performance of public activities with the allocation of public monies appears to be a one-way street. There is a clear vision of what kinds of information should be considered at each stage of the allocation process (see Table 1).

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& Shand (1995), Hawke (2007), and Blöndal, Bergvall, Hawkesworth, & Deighton-Smith (2008) for a particular focus on Australia; Osborn & Gaebler (1992), Ho (2011), and Hou, Lunsford, Sides, & Jones (2011) for reforms in local and state governments in the United States, as well as Joyce (2011) for the national government; van Nispen & Posseth (2007) for reforms in The Netherlands; Küchen & Nordman (2008) for reforms in Sweden; Noman (2008) for reforms in the United Kingdom; and OECD (2008) for the New Accounting Model in Switzerland.

## Table 1: Information and its Suggested Use for Budget Actors

*Source*: Jouyce & Tompkins (2002).

| Stage of budget process | Measures available | Use of measures to: |
|---|---|---|
| Budget preparation: Agency level | - Agency strategic planning and performance planning<br>- Cost accounting<br>- Performance (outcome) measures | - Make trade-offs between agency subunits to allocate funds strategically<br>- Build budget justifications for submission to central budget office<br>- Determine overlapping services within agency |
| Budget preparation: Central budget office | - Government-wide strategic planning and performance planning<br>- Cost accounting<br>- Performance (outcome) measures | - Make trade-offs between agencies to allocate funds strategically<br>- Build budget justifications for submission to legislative body<br>- Determine overlapping services between agencies |
| Budget approval: Legislative | - Performance measures, accurate cost estimates, and strategic/performance plans included with budget justifications | - Compare costs to marginal effects on performance during legislative funding process<br>- Make performance expectations clear as a part of budget allocation |
| Budget approval: Chief Executive | - Implications of legislatively approved budget for achieving government strategic objectives | - Make decisions on signature, veto, or line item veto/reduction informed by performance implications |
| Budget execution | - Agency and government-wide strategic plans<br>- Performance (outcome) measures<br>- Cost accounting | - Use spending discretion and flexibility to allocate funds in line with strategic priorities and consistent with the achievement of agency performance goals |
| Audit and evaluation | - Agency strategic goals<br>- Actual performance data<br>- Cost accounting | - Shift focus of audits/evaluations to include performance questions, rather than only financial compliance |

This brief description of the reform chronology shows, in my view, that when we change the procedures by which public resources are allocated, alter the structures on which these decisions are made, and craft the information politicians should consider when they make their deliberations, we have a clear idea of what constitutes an intelligent budget decision. This is not to say that there is a system or set of rules and regulations that would provide "if-then-else" rules for budgeting. There is no theory that answers the question of how we should "allocate x dollars to activity A instead of B" (Key, 1940, p. 34). Commentators acknowledge that politics depends on majorities to drive its concerns home (e.g., Schedler, 2003), and therefore, nobody would claim that government budgeting should be performance-*based*, as was the case in early reform initiatives. All reformers ask for today is performance-*informed* budgeting:

> A good performance budgeting process can put timely, reliable, relevant data in the hands of decision makers [elected officials], who can then decide how to weigh the information in the budget decision. Decision makers do not have to rely exclusively on performance information as the basis of their decision, nor do they have to make the decision that the data would indicate. In a performance budgeting system, they must have access to the information and use it in their deliberations. (Kelly & Rivenbark, 2003, p. 12)

> In order to promote effective use of resources, performance information should be on the table and easily accessible to all stakeholders when political decisions are made. (Hilton & Joyce, 2012, p. 482)

Such general assertions on the importance of information for politicians' allocation decisions are easy to find in the performance budgeting literature. To the best of my knowledge, however, I encountered no suggestions that would explicate how, exactly, information is meant to direct political deliberations on government budgets. It appears to me that, in one way or another, the provision of information to politicians is aimed at rationalizing the political discourse on the allocation of public resources. By rationalization, I refer to the reformer's expectation that politicians' judgments be made in the light of information about the impact produced by those public activities, whatever the final judgment turns out to be. Characteristic of all the major budgeting reforms I have described is the tendency to deliver more, and increasingly different kinds of, information to politicians. It appears to me that although reformers claim to acknowledge that politicians' "budget decisions are informed by both facts and values," it is nevertheless presumed that more or less intelligent choices exist and that "the best decision is the informed decision" (Kelly & Rivenbark, 2003, pp. 5, 7). Since information does not speak for itself, but always indicates a particular conclusion depending on the way it is arranged, more informed deliberations should lead to similar decisions. Therefore, for public budgeting, a more informed deliberation is also presumed to abate conflict, that is, to bring different political positions closer together, irrespective of where the final position may come to lie. In this sense, we *can* ask the question of whether performance budgeting "works." The problem is that "we know little about people's basic tendencies to incorporate and use performance data" (Moynihan, 2013, p. 2) and are therefore unable to judge whether this presumed effect is warranted. There is no model to guide us on how the legislators' values and policy information relate to each other and how they interact to reach an allocation judgment.

# 3 Claim, Summary, and Structure of this Thesis

The substance of this thesis is the implication of the More Information Hypothesis on politicians' policy decisions, in general, and allocation judgments, in particular. Research on this matter is important, because it helps to understand the ideological polarization over policy-relevant facts and orients practical reforms that aim to mitigate it (Kahan, 2013a, p. 408). The model or premise that I want to develop holds that the provision of policy information is likely to propel conflict among political fractions rather than abate it. The justification of this premise is two-pronged, involving a reference to the moral dimension of policy questions from the perspective of politicians, and a consideration of the psychological process that is associated with making moral judgments. The overall argument suggests that policy issues pose moral questions to politicians and that those questions are answered by people's intuitive judgments, not by reasoning and the available evidence. By default, politicians' issue positions will therefore be preordained by what a "good liberal" or a "good conservative" would do. Information serves mainly to rationalize ideological beliefs and one's view about how the world works – uncongenial information is ignored or disputed. If political intuitions about a policy issue are in line, politicians' biased information behavior is not consciously employed. Evolutionarily shaped cognitive strategies ensure that group alignment and consistency among adhered values trump accuracy. Right is what one's peer group believes is true. In such a context, the only thing more policy information can achieve is to drive opposing ideological camps further apart, not reconcile them.

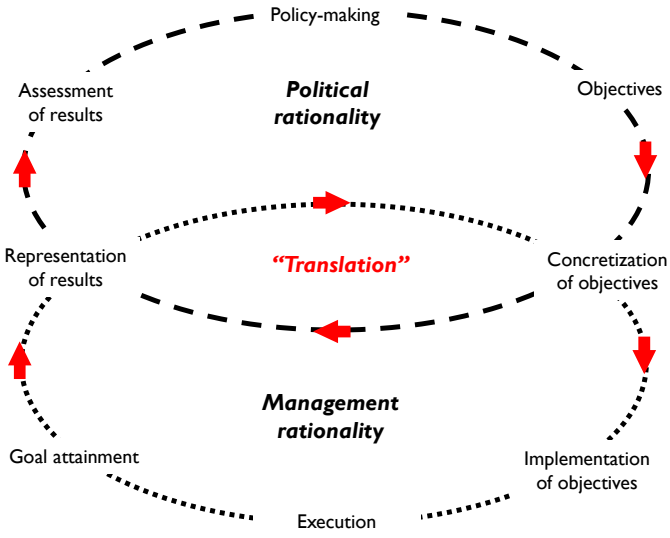
To drive this message home (Abbott, 1992), I use public budgeting as my case, and I focus on how legislators make allocation judgments in the light of available policy information. If there are factors that genuinely shape the way information is used in the political arena, I expect them to be present in the policy domain of public budgeting. It is the policy field par excellence:

> The victories and defeats, the compromises and the bargains, the realms of agreement and the spheres of conflict in regard to the role of national government in our society all appear in the budget. In the most integral sense the budget lies at the heart of the political process. (Wildavsky, 1964, p. 5)

Furthermore, in my examination, I will focus on legislators as the unit of analysis upon which the necessary observations will be performed. I made this choice and excluded

politicians of the executive branch based on the following reasoning. Elected representatives of the executive branch are not just politicians. In their role as political heads of the public administration, they also function as "translators" between the world of politics and the world of management (see Figure 1). To steer and control the government's administration, they must dismantle the political provisions and discern the aspects that are relevant for the management of the public apparatus. Conversely, to legitimize government activity for a society, politicians of the executive branch must categorize the results of government production in terms of political aspects. In short, because executive politicians are members of "two worlds with different thought patterns, conceptualities, and sanctioning and reward mechanisms" (Schedler & Proeller, 2010, p. 51), the phenomena of interest to this thesis – politicians' information behavior – would be distorted by the influence of executive branch politicians' management rationale.

**Figure 1: Rationality Model, The Integration of Politics and Management**




*Source*: Schedler & Proeller (2010, p. 52).

To provide an overview of the main body of the thesis and highlight how the three articles interrelate, I will briefly summarize the research objective for each of them, state the method applied to achieve it, mention the results of the analysis, and provide a preview of the conclusions. With respect to the orienting model depicted in Figure 1, Article 1 of my thesis considers the research literature that could be of relevance for understanding any aspect of the upper circle of politics. Article 2 is interested in whether and how the information input from the management circle influences

judgments made in the political circle, which are then reflected back to the political provisions for the management of the public administration. Finally, Article 3 is concerned with the essence of what Figure 1 labels 'political rationality.'

| **Article 1 – Co-authored with Lukas Summermatter** | |
|---|---|
| Title | What should we know about legislators' performance information needs and uses? |
| Research gap | - Contradictory empirical evidence on politicians' information use for decision-making purposes.<br>- No review of the relevant research literature. |
| Research objective | Criteria of a promising research strategy to analyze information's influence on legislators' policy decisions |
| Method | Review of empirical and conceptual treatments of earlier works and allied disciplines concerning information use for decision-making purposes |
| Conference presentation | CEMS Doctoral Workshop 2012, Copenhagen, Denmark. |
| Publication status | Published in *International Public Management Review*, Vol. 13, Iss. 2, 85-111, 2012.<br>- Submission, July 7, 2012.<br>- Accepted for publication with minor revisions, September 13, 2012.<br>- Second submission, October 10, 2012.<br>- Accepted for publication, October 17, 2012.<br>- Published, November 2, 2012. |

Students of this phenomenon observe low information use by politicians and generally conclude that policy evidence is unable to direct decision outcomes. Doubt is cast by the sporadic use of information as a decision-making aid. Knowing whether and how policy information can enter politicians' deliberations offers the opportunity to improve the chances that relevant knowledge is considered during political decision-making. Based on a review of existing works, the aim of the first article is to highlight the dimensions of a successful research strategy for evaluating the potential of information to influence politicians' policy decisions. The selection of the relevant body of treatments was guided by what might help in understanding human information behavior, in general, and the politicians' use of information for decision-making, in particular.

Relevant works for the review were organized according to whether a publication represented an empirical or conceptual treatment. Empirical material on politicians' information behavior was found to be either the result of U.S. Congress' specialization

and decentralization reforms during the 1970s and 1980s, or a consequence of changes introduced during the New Public Management era that aimed to implement a results- and outcome-oriented view of government activity. The analysis reveals that current empirical research rarely considers earlier insights. It basically labels all evidence available in the political arena as performance information and is primarily interested in whether legislators use this data, first, to evaluate the performance within and outside of government, and second, to judge future allocations of public monies. Only a handful of studies exist that provide substantial empirical material on these questions. Those that do exist claim to show that legislators have a low interest in the available evidence; characterize decision-makers' performance evaluation style as process-conscious rather than results-oriented or outcome-focused; show that information use varies depending on the stage of the decision-making process; and highlight the eclectic and contradictory nature of existing theoretical accounts. Just as examinations in the 1970s and 1980s, current research draws its empirical material from surveys and interviews, and designs its questions to identify the popularity of the kind of information it is interested in, the priority of the sources this information is channeled through to reach the lawmakers, or the reasons that prevent interest.

The analysis of conceptual treatments on human information behavior, however, suggests three principles that should guide research on politicians' information behavior. First, human information behavior occurs within a context, and it is a particular context that triggers a physiological, affective, or cognitive need that requires information for its satisfaction. Second, politicians' decisions are not based solely on information, but compete with individuals' ideologies and interests. Research must consider the political rationale that defines the information-decision nexus within this context. Lastly, information has no meaning independent of its application. Identical information can be used as a pure decision-making aid one time, and at other times, it can be employed strategically to undermine the arguments of political opponents. Information use is therefore better conceived of as an interplay between the available evidence and situation-bounded politicians. In sum, conceptual treatments suggest acquiring an understanding of why politicians develop a need for information, and then considering the potential of information to influence decisions.

Based on these results, the first article argues that existing and sometimes contradictory insights on politicians' use of information for decision-making could be better appreciated if future research would be sensitive to the defining features of the individuals' context, the information-decision nexus in the political environment, and

to the possibility of using policy information in non-substantive ways. The first article concludes that the "ideology-interest-information" framework provided by Weiss (1983) represents a promising approach to introduce this sensitivity and to model the characteristics of the policy situations where information can have an impact on deliberations. In addition, the first article suggests focusing on the individual politicians as the relevant unit of analysis; confronting individuals with concrete policy questions and observing the use of information, instead of haphazardly asking about information use; and considering experimentation as a potential design to reduce complexity and isolate the factors of interest.

| **Article 2** | |
|---|---|
| Title | What can performance information do to legislators? |
| Research gap | - Little and contradictory evidence about whether information is able to influence legislators' allocation decisions.<br>- Although a behavioral question, thus far only observational research methods are applied to study it. |
| Research objective | - Provide a conceptual framework that links information with legislators' decision outcomes.<br>- Test the framework predictions experimentally. |
| Method | Experiment, randomized between-subject factorial design |
| Conference presentations | 1. Goldman School of Public Policy PhD Workshop 2013, Berkeley, CA, USA.<br>2. German University of Administrative Sciences Speyer, Workshop on Experimental Public Administration 2014, Speyer, Germany. |
| Publication status | First Submission: *Journal of Public Administration Research and Theory*<br>- Submission, October 18, 2013.<br>- Accepted for review, October 21, 2013.<br>- Rejected for publication in *JPART*, December 7, 2013<br><br>Second Submission: *Public Administration Review*<br>- Submission, September 2, 2014 |

In the case of government budgeting, the provision of performance information to legislatures is meant to promote a more effective allocation of public resources. However, existing empirical and conceptual research falls short in answering the question of how this information should interact with the political dimension of resource allocation to influence legislators' judgments. This second article specifies and implements the suggestions that Article 1 provided. It claims that when performance information enters the individual decision-making process of a legislator, three side conditions govern the leverage it can potentially have on the decision

outcome. First, the information is part of a budget proposal, which is either consistent with or ignorant of what the available evidence suggests. Second, the information is considered with respect to a particular allocation issue and is therefore judged with reference to a value tradeoff that triggers either harmonious or conflicting political predispositions. Finally, the information indicates a conclusion and therefore falls naturally into a receptive or unwilling partisan mind. To test the effects of these factors on an individual allocation judgment, an experiment was conducted with fifty-seven Swiss state legislators.

First, the results of the experiment show that the provision of performance information to legislators' deliberation process leads to stronger deviations from the status quo funding. Given a common stock of performance information, budget proposals consistent with this information intensify this effect. It is suggested that this happens because consistent proposals make a more pronounced, and therefore, stronger argument for a budget request. Budget proposals that consistently build on what the available evidence indicates allow legislators to better evaluate what the consequences of their decision would be and more clearly assess whether they agree or disagree with the suggestion made. Second, this effect holds only if the allocation issue triggers harmonious political predispositions among the legislators. If the funding question prompts conflicting political intuitions, the executive branch's budget proposal makes no difference, provided the informational basis remains the same. It is assumed that this is because the triggered dilemma intensifies legislators' interest in the available evidence, and since this evidence is identical, the legislators do not change their decisions simply because the executive branch concludes differently. Finally, the effect of consistent budget proposals to cause more extreme decisions holds only for those partisan minds that find the information congenial. Political camps that disagree with what the available evidence suggests do not react to the changing proposals of the executive based on this information.

The second article concludes, on the one hand, that reforms attempt to improve performance budgeting. Budget proposals that provide better information about what society will more or less receive in terms of a specific policy outcome lead to more informed judgments about the likely consequences of changing the funding. On the other hand, the experiment's results suggest that in a parliamentary context, better-informed decisions imply more extreme positions. Since only receptive legislators react to the performance information provided, consistent proposals appear to increase

the contrast among opposing political camps and could make compromise among legislators less likely.

| Article 3 – Co-authored with Kuno Schedler | |
|---|---|
| Title | What drives legislators' information behavior? |
| Research gap | Eclectic and contradictory theoretical accounts of the reasons that motivate legislators to consider information for decision-making purposes. |
| Research objective | - Provide a parsimonious model for legislators' information behavior based on the most recent insights from decision-making research.<br>- Evaluate the model's validity by testing some of its implications. |
| Method | - Review of existing explanations of legislators' information behavior for allocation decisions.<br>- Assess the plausibility of these explanations in the light of current insights from decision-making research.<br>- Eye-tracking experiment with randomized between-subject design to test the proposed model's predictions. |
| Conference presentations | 1. University of Potsdam, PhD Workshop on Innovative Research Methods 2014, Potsdam, Germany.<br>2. German University of Administrative Sciences Speyer, Workshop on Experimental Public Administration 2014, Speyer, Germany. |
| Publication status | First Submission: *Journal of Public Administration Research and Theory*<br>- Submission, September 2, 2014 |

The third article is concerned with what drives legislators' interest in information. Existing theoretical accounts are eclectic and provide competing explanations for why legislators decide to consider or ignore the available evidence. These accounts claim that legislators need, use, misuse, or ignore evidence based on its potential to solve a given policy problem, that is, for example, to better identify or exploit political opportunities and threats, to avoid blame for public service's ineffectiveness or claim credit for its successes, to ensure reelection and career prospects, or to build winning coalitions or break them. For various reasons, Article 3 concludes that the motives put forward by such rationalist accounts do not provide strong enough triggers for legislators to perform the necessary cognitive work to consider the information. Based on established research from cognitive and social psychology, the goal of Article 3 is to present an alternative model of information behavior and to test the implications that follow from this account for legislators' need, search, and use of information.

The intuitionist model of legislators' information behavior presumes that policy issues, in general, and allocation issues, in particular, represent moral questions for legislators and therefore require moral judgments on the available options. For legislators'

information behavior, this implies that for most policy questions and allocation judgments, there is no need for information, because positions are predisposed by political intuitions shaped by one's affiliation to a particular political camp. Strong cognitive strategies ensure subconsciously that post hoc reasoning leads to the confirmation of this position and does not aim for accurate solutions, which risks siding with political opponents. If evidence is available, it is used according to whether it makes sense to one's a priori theory about how the world works; otherwise, the information is disputed or ignored. The intuitionist model suggests that we should not expect legislators to show an interest in information for decision-making purposes unless a policy question triggers conflicting political intuitions. Only then can reasoning be claimed to precede judgment and to orient legislators' policy positions. Under these conditions, the available evidence is used accordingly to build a supporting case for each side of the contested issue until one solution begins to feel right, and again, begins to bias the information need, search, and use toward that conclusion.

To test the predictions of this model, fifty-six Swiss state legislators were confronted with an allocation issue that triggered either harmonious or conflicting political intuitions. In this between-subject experimental design, the subjects were provided with the corresponding information, and their interaction with this information was observed with an eye-tracking device. Various eye-tracking metrics are used to explore the potential of harmonious and conflicting political intuitions for explaining a legislator's need, search, and use of information. First, the results show that contradictory political intuitions lead to more fixations, and hence, increased cognitive work to absorb the available information. Second, under conflicting political intuitions, legislators put more effort into searching for information: shorter single-fixation durations indicate increased scanning behavior; longer single-saccade durations show a wider search radius; and a higher number of adjacent fixations performed to move from one area of interest to another point to an increased attempt to integrate the different parts of the story being told by the information. Finally, eye-tracking metrics cannot provide conclusive evidence on whether information is used based on a makes-sense or a feels-right logic, because the quantitative nature of the data prevents such qualitative conclusions. Even so, a comparison of how the information searches evolved over time suggests that the available information was used differently depending on whether the intuitions were in line with the information

or not, and that this pattern is mostly in accordance with what the intuitionist model predicts.

Based on the intuitionist model of legislators' information behavior and the results of the eye-tracking experiment, Article 3 concludes by offering different interpretations for the established empirical facts that have been observed for legislators' need, search, and use of information. First, policy information is not ignored by lawmakers primarily because they are ideological or only driven by interests. It is also because relying on ideology and interests is cognitively easier than thinking. Second, the information search is not purposefully biased by legislators. For most policy questions, conclusions are, by default, preordained by particularly strong worldviews and group structures that prevail in parliaments that skew the information search toward one's preferred side. As a result, it is not that all legislators draw their information from the same information inventory, and selective use is due to strategic concerns. The compilation of the inventory, itself, is skewed and produces a difference in the informational reservoirs from which the legislators can later draw on. Finally, since information does not speak for itself, political intuitions will direct the interpretation of the story the information tells. What might look like a misuse or abuse of information in ideologically polarized constellations to an external observer is, from the perspective of a legislator, the only sensible way to use the available evidence. Similarly, from the perspective of the intuitionist model, what might resemble a substantive use of policy information by legislators is not an attempt to achieve accuracy, but rather to restore consistency among political predispositions.

The structure of this thesis is predisposed by its cumulative nature. After this introductory portion, the main body of the thesis is comprised of three articles devoted to the different aspects of politicians' information behavior. The final and fourth portion begins by highlighting the methodological, empirical, and theoretical contributions this thesis makes to the study of legislators' information behavior and to the field of public management. I then describe some implications that follow from the research aspects of the thesis. In particular, I focus on various approaches that could help to mitigate the polarizing effect of information on legislators' issue positions. Finally, I conclude by pointing out the methodological, empirical, and theoretical limitations that this thesis and its overall argument are subject to.

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# ARTICLE 1: WHAT SHOULD WE KNOW ABOUT LEGISLATORS' PERFORMANCE INFORMATION NEEDS AND USES?


## Abstract[3]

*How legislators use performance information is crucial, since – among other purposes – data on outputs and outcomes are meant to inform the public about the performance of public managers, programs as well as organizations, and ultimately to influence the allocation of funds. The limited empirical evidence on parliamentarians' performance information behavior provides contradictory findings about how this new kind of data is used. This paper aims to draw an outline of the insights we have about politicians' information needs and uses in general. It sets a particular focus on the question of how the use of performance information by politicians could be analyzed more systematically in the future by referring to conceptual treatments of earlier periods or allied disciplines. We show how future research could profit by shifting focus from the isolated analysis of performance information to the context-bounded politician and her information needs. This could be done by considering the political rationale with respect to the information-decision nexus, and by including possibilities of symbolic or strategic types of performance information utilization. Conceiving politicians as needs-driven and goal-oriented information users requires a different definition of which data inform about performance.*


## 1 Introduction

We do not know much about how and to what extent politicians in the legislative branches of government use the information supplied to them by public administrators – especially that information concerning the performance of public agencies and programs (Pollitt, 2006a). Although rarely based on a systematic analysis of parliamentary use, the majority of surveys and meta-inquiries suggests that performance information is rarely used by legislators (Ho & Coates, 2004; Julnes & Holzer, 2001; see also Joyce, 1993; Poister & Streib, 1999; Matheson & Kwon, 2003; Raudla, 2012; Pollitt, 2008). This conclusion exists alongside a few studies that show there have been occasions where legislators did actually use performance information (Askim, 2007, 2009; Askim & Hanssen, 2008; ter Bogt, 2001, 2003, 2004).

The roots of these contradictory findings are worth exploring, since it is a fundamental prerequisite of the modern public management conception that politicians use available information. From this perspective, information supply serves as the service

3 Co-authored with Lukas Summermatter.

in return for politicians allowing the administration to assume operational decision-making authority. On the one hand, politicians must "see" how public services are produced, how they contribute to the achievement of a desired outcome, and what the costs of production are. On the other hand, given this information, politicians' capacity to steer administrative action shall be recovered, since the new information systems causally link relevant aspects with each other and, ideally, enable users to evaluate expectable consequences of particular interventions (Schedler, 2003; Bawden, 2006).

Christopher Pollitt calls it "mildly amazing" that, while we have amassed many studies of how managers and professionals use or fail to use performance information, we still have only a few analyses of what the ultimate users, elected politicians, do with all the material now thrust upon them. "Prejudices, dreams and stereotypes" of how politicians react to carefully-crafted performance data do exist on both sides of the Atlantic, but hardly any studies address this empirical question and provide answers whose "significance in a democratic context can hardly be exaggerated" (Pollitt, 2006b, pp. 76-77).

Based on a review of existing works, this paper aims to draw an outline of the insights we have about politicians' general information needs and uses. It sets a particular focus on the question of how the use of performance information by politicians could be analyzed more systematically in the future by referring to conceptual treatments of earlier periods or allied disciplines of policy and information science. For this purpose and as a working definition, the concept of 'information' is conceived as "any difference a person perceives in her environment or within herself and encompasses any aspect that she notices in the pattern of reality" (Case, 2008, p. 5). 'Performance information,' on the other hand, conventionally describes systematic information about inputs, throughputs, outputs and outcomes. It also addresses relationships among these dimensions of public programs as well as among organizations, whether intended or not, and generated by systems and processes conceived to produce such information (e.g., Pollitt, 2006a; Siegel & Summermatter, 2008).

The relevant body of literature for the review was assembled by an extensive research of scientific databases. A search for publications containing "information" in the title field and within the subject areas of 'political science' and 'public administration' resulted in 1,134 potentially relevant documents. A consecutive refinement by document type revealed that 'journal articles' make up 54% of those publications, followed by 'book reviews,' constituting 30%. The rest of the publications consist of

'proceedings papers,' 'editorial material,' etc. Table 2 gives an overview of the top ten journals for the document type 'articles.'

**Table 2: Information in Political Science and Public Administration**

*Source*: Web of Science (2012)

| Source Titles | Record Count | % of *N* = 559 |
|---|---|---|
| Public Administration Review | 66 | 11.8% |
| American Political Science Review | 31 | 5.6% |
| American Journal of Political Science | 28 | 5% |
| Public Administration | 24 | 4.3% |
| Policy Studies Journal | 21 | 3.8% |
| Australian Journal of Public Administration | 20 | 3.6% |
| Journal of Politics | 18 | 3.2% |
| Canadian Public Administration | 16 | 2.9% |
| Political Research Quarterly | 15 | 2.7% |
| Legislative Studies Quarterly | 13 | 2.3% |
| *Others (86 Journals)* | *307* | *54.8%* |

As Table 2 shows, publications mainly concerned with the aspect of information are not concentrated in a few sources but are spread over a total of 96 scientific journals. However, most of the articles categorized as relevant were published in *Public Administration Review*. A further refinement was conducted aiming at filtering publications treating information in connection with politicians. These publications provided the basis for consecutively tracing additional work by using forward and backward citation maps in order to analyze these reference lists over a period of two generations.[4]

Table 3 shows our selection of publications with a particular focus on legislators' information needs and uses – in general purposes and, in particular, for decision-making purposes. Publications are arranged according to whether they provide conceptual and/or empirical insights and are listed in chronological order, starting with treatments from the late 1960s. Publications that provide literature overviews, such as from Pollitt (2006a), Bimber (1991) and Weiss (1997, 1998), were treated as

4 The records that directly cite or are directly cited by the target record are the first gen-eration, records citing records that cite the target record and records cited by records cited by the target record are the second generation, etc.

conceptual works, since they helped to form our conclusions about strengths and weaknesses of existing approaches.

**Table 3: Publications Analyzing Politicians' Information Needs and Uses**

| Empirical ◄---------- ►Conceptual | | |
|---|---|---|
| | Jernberg (1969) | |
| Koehler (1973) | Kovenock (1973) | |
| | Porter (1974) | |
| Schendelen (1975) | | |
| | | Wolanin (1976) |
| Bozeman & Blankenship (1979) | | |
| Zwier (1979) | | |
| | Bradley (1980) | Rein (1980) |
| | Kingdon (1981) | Leviton & Hughes (1981) |
| | | Weiss (1983) |
| | Webber (1984) | |
| | Sabatier & Whiteman (1985) | |
| | Whiteman (1985) | Calvert (1985) |
| | Huckfeldt & Sprague (1987) | Bendor, Taylor, Gaalen (1987) |
| | | Banks (1989) |
| | | Silvan, Goel, Chandrasekaran (1990) |
| | Mooney (1991) | Bimber (1991) |
| | Mooney (1992) | |
| | | Austen-Smith (1993) |
| Guston, Jones, Branscomb (1997) | | Weiss (1997) |
| | ter Bogt (2001) | |
| ter Bogt (2003) | | |
| ter Bogt (2004) | | |
| Steccolini (2004) | | |
| Curristine (2005) | Cunningham & Harris (2005) | |
| | | Flury & Schedler (2006) |
| | | Pollitt (2006a) |
| Askim (2007) | | |
| Johnson & Talbot (2007) | | |
| Askim & Hanssen (2008) | Askim (2008) | Pollitt (2008) |
| Bourdeaux (2008) | | |
| Frisco & Stalebrink (2008) | | |
| Jansen (2008) | | |
| | Askim (2009) | Patty (2009) |
| Raudla (2012) | | |

The remainder of this paper is organized as follows: We start with a discussion of empirical works and organize insights according to reform periods. Next, conceptual treatments are reviewed and are arranged according to the fundamental propositions they suggest for the study of politicians' information behavior. Finally, we conclude

by drawing some general implications for future research and by discussing potential research strategy designs.

# 2 Information in Empirical Studies

Publications providing empirical material may be attributed either to the 1970s–1980s period, when specialization and decentralization were at the forefront of congressional reforms, or to the New Public Management (NPM) era, when the reorganization of public administration apparatus was accompanied by the credo of output and outcome measurement and its reporting to elected officials.

## 2.1 Use of Policy Information After U.S. Congressional Reforms

Bimber (1991) provides an overview of the first period and summarizes the scholarly debate as one that was mainly divided over the importance of information and expertise to the work and policy output of the U.S. Congress (Bimber, 1991). Advocates of the specialization and decentralization reforms within Congress aimed to bring the information capacity and sophistication of the parliament closer to that of the executive branch of government. A lack of modern technology, insufficient staff and other inadequate resources were blamed for causing an "information gap" and for restricting parliament's political power as well as its capacity for making informed policy decisions (Cohen, 1973). Schneier (1970), Schick (1976) and Jones (1976) disagreed with this view and challenged the idea that an increased availability of "objective information and an improved access to it would enhance legislators' policy making capacity. They suggest that the purpose of policy analysis for legislators is to provide evidence for what their political judgment already tells them is correct. It is argued that what deters legislators from seeking intelligent information in an objective, goal-free sense is the institutional character of this law-producing body. Members of Congress, as Schick puts it, "seem more concerned about the distributive effects of public policies than about *pro bono public* benefit-cost ratios. Unlike the analyst who seeks to maximize aggregate national welfare, the legislator knows that it is *someone's* welfare that is to be benefited" (Schick, 1976, p. 217, italics in original).

Empirical studies of parliamentary decision-making accompanying this debate focused on the influence new information had on decision-making, on defining and categorizing information. They attempted to reveal relevant sources and analyzed the flow of information within the parliament. Contributions come from Bradley (1973)

and Weber (1977) who made a distinction between substantial *policy information* and *political information* about positions of other actors on pending decisions and about the potential impact on legislators' reelection or career prospects (see also Sabatier & Whiteman, 1985). Zwier (1979) shows that specialist legislators rely upon different information sources than nonspecialists. Whereas the former group uses many noncongressional sources such as the executive branch and interest groups, the latter appear to be more dependent on their constituencies and colleagues.

Porter (1974) introduced a two-step communication model and showed that information flows from lobbyists and administrators to specialist legislators and committeemen, respectively, who in turn "retail" it to others in the parliament (Porter, 1974).[5] Building on the work of Porter (1974), Sabatier & Whiteman (1985) add "staffs" of specialist legislators as intermediaries and propose a three-stage-model of information flow. They stress the filtering position staff has within the legislative decision-making process. In addition, the authors show that policy information and political information follow different paths in order to reach legislators.

Kingdon (1981) sheds light on legislators' information search behavior. He observes that parliamentarians do not have much incentive to engage in an extensive search for information, given the sharp time constraints they face, the competition of many matters for their attention, and the disposition of legislators "to be not very concerned with many of the subjects before them" (Kingdon, 1981, p. 242). Using an analogy to Cyert & March's (1963) "Behavioral Theory of the Firm," Kingdon (1981, p. 228) portrays legislators' information search behavior as "problemistic"; that is, they do not look for information unless they face a problem for which "simple decision rules" fail to provide a solution. In other words, a) if a pending decision does not raise a political problem for a legislator's district, b) or if she already has a fixed opinion on the issue or c) if she has an established a voting history on the issue, there is no need to demand further information about it, Kingdon (1981) claims.

Lastly, based on an extensive study of empirical material, Leviton & Hughes (1981) identify five major clusters of variables that are consistently related to a higher probability of policy information utilization. To be used, available information has to be *relevant* with respect to policy concerns. Although difficult to achieve, relevance increases the more available information addresses the policy-makers' needs and the

5 This two-stage model of information flow and the possibility of lobbyist groups to influence the political agenda was later formalized by Austen-Smith (1993).

more timely it is reported. Second, the *quality of communication* between the producer of information and its end user increases the potential for use. The quality, in turn, seems to be higher in cases where communication between the actors occurs not sporadically but frequently and where organizational hierarchy is low, thereby preventing the obstruction of valuable information. Third, to be used, available information must be *recognized* to be relevant for the matter at hand. Better comprehension and therefore higher probability of utilization can be achieved by highlighting the implications and recommendations particular information has for the policy at hand. Fourth, in order to be used, available information has to be *credible*. Credibility is affected by several considerations, such as by comparisons with other available information, individual intuition or knowledge about an issue, the credibility of the information producer as well as by the methodological quality and a professional presentation of reported information. Lastly, using information in a political context requires its *advocacy* by the end user. It has been found that advocacy for information can be better achieved by involving potential users in the process of producing the information through regular consultations.

## 2.2 The Use Of Information In NPM Settings

More recent empirical studies of information use are concerned with the respective consequences NPM reforms exhibit on the politics-administration nexus. Although varying in their national differentiation, NPM reforms aim to improve the old-style Weberian (1978) conception of administrative action by suggesting shared responsibilities between politics and the public administration with respect to strategic and operational decision-making authority (Schedler, 2003). To put it simply, NPM envisions the legislative branch as responsible for providing the targeted outcomes whereas the executive branch is granted responsibility to decide on how these outcomes can be achieved most efficiently and effectively (Bowsher, 1985; Amstrong, 1985; Frank & D'Souza, 2004). In an NPM environment, performance information is crucial. It is needed to set targets in management contracts, to compare them with actual performance, to emphasize outputs and to focus on efficiency (Jansen, 2008). Its conveyance to politics aims to compensate the democratically elected body for its permission to “let the managers manage” and to detach administration from its “black box” image by increasing transparency. In essence, performance measurement and management are ultimately meant to influence decision-making in politics and the allocation of budgets to activities and programs (Curristine, 2005).

Compared to the first period of research on politicians' information behavior, most current studies focus exclusively on the particular type of performance information and do not include politicians' behavior toward other kinds of information. In general, there is skepticism about the factual use of reported performance information by legislators (e.g., Bussmann, 1996, p. 313; Moynihan, 2005b, p. 204f; Pollitt, 2006a, p. 46ff; ter Bogt, 2004, p. 241). It is argued that performance measurement and performance management are activities by and for the executive branch of government and it is claimed that data on performance "often 'hits a wall' when it […] comes to the legislative or policy-making process" (Ho & Coates, 2004, p. 31, emphasis in original). Since the *political process* is characterized by instability due to changing coalitions and value-driven compromises, incrementalism and muddling through dominate political decision-making and prevent attempts of rationalization (Bussmann, 1996). Besides the very nature of the political process, there are also *institutional elements* which are claimed to account for the limited use of performance information by legislators. It is argued that if a legislature's role – for example, in the budget process – is limited, then politicians' motivation to engage with performance information and to use it for decision-making purposes can be expected to be rather low (Bourdeaux, 2008; Cunningham & Harris, 2005). Lastly, *individual characteristics* such as the length of political experience and proficiency of a legislator could supplement the use of performance information (Askim, 2008).

Some of the limited empirical insights we have on these issues stem from terBogt's case studies (2001, 2003, 2004) and survey research on Dutch Aldermen – the top echelon of Dutch councilors. TerBogt (2004) suggests that the *extent* to which reported performance information is used by politicians decreases the more politicized, complex, uncertain, and less measureable a policy field is. In such cases, legislators address different *sources* and other *kinds* of information in order to evaluate the performance of managers, public programs, and organizations. Instead of referring to data in written reports, they prefer face-to-face encounters with civil servants in order to get richer information about concrete issues (ter Bogt, 2004). In addition, terBogt (2001) notes that politicians' evaluation style is not primarily based on what "we" call performance information: that is, information on outputs and outcomes. He suggests that legislators' style of performance appraisal is better characterized as "operations-conscious"; that is, a lot of attention is paid to activities and processes within the public administration, which are considered to be better indicators for a well-functioning of the apparatus (ter Bogt, 2003). Overall, terBogt supports the view that

politicians do not value the performance information reported to them and therefore make only limited use of it (ter Bogt, 2001).

Askim's (2007) study of Norwegian local Councilors' use of written performance information reaches a different conclusion. Based on Barzelay (2003), Askim disaggregates the decision-making process into pre-decisional, decisional, and post-decisional stages in order to derive the different *functions* performance information serves for legislators along this timeline. He shows that reported performance information is used by legislators mostly in the pre-decisional and the post-decisional stages in order to a) identify problems and set them on the political agenda, b) specify alternatives and c) monitor the implementation of programs and policy initiatives, respectively. In the decisional stage, however, written performance information is relatively less used in order d) to take a stand on a particular issue. Case documents provided by the administration as well as local party programs appear to be more influential in forming legislators' positions at this stage. Overall, Askim (2007) identifies two clusters in terms of levels of performance information utilization. First, utilization proved to be higher among legislators working with elderly care, administrative affairs, and educational affairs than among those concerned with cultural affairs, technical services, as well as planning and commercial development. Second, these differences among legislators of different policy fields turned out to be stable through the three stages of decision-making, except for those working with administrative affairs and technical services. For these legislators, performance information's use increased during the course of decision-making stages. Askim (2009, p. 34; 2007, p. 466) notes that these and other findings seem to contradict those of terBogt, but abstains from a further elaboration of possible reasons.

To our knowledge, the most recent empirical treatment is provided by Raudla (2012). Her focus is on the direct use of performance information in legislators' budgetary decision-making. Six years after Pollitt's (2006a) overview, Raudla (2012) reconfirms that the empirical basis we have so far on this aspect is still limited. She summarizes theoretical perspectives that underlie current analyses of legislators' use of performance information. Raudla thereby finds propositions for and against the use of performance information by legislators in making budgeting decisions.

However, based on eight semi-structured interviews with former members of the finance committee of the Estonian parliament, Raudla (2012, p. 14) finds more support for those theoretical perspectives that are skeptical about the extent to which performance information has a direct impact on budgeting decisions or on the budget

discourse. Table 4 depicts Raudla's (2012) summary of relevant theoretical perspectives concerning legislators' performance information usage and adds further exemplary work to each perspective.

**Table 4: Theoretical Perspectives on Legislators' Performance Information Use**

| Theoretical Perspective | Proposition | Examples |
|---|---|---|
| Agency Theory | Legislators pay attention to performance information in order to alleviate information asymmetry between the two branches of government. | Askim (2008); Banks (1989) |
| | Legislators may be reluctant to apply performance information in order to make decisions about the allocation of resource because they lack trust in the information provided by the executive branch | Bourdeaux (2008); Calvert (1985); Wang (2008) |
| Organizational Learning Theory | Legislators make use of available performance information in order to improve the quality of budgeting decisions. | Willoughby & Melkers (2001) |
| | Legislators consult performance information in order to identify declining performance and to point out gaps between intended and actual performance. | Askim (2007); Melkers & Willoughby (2005) |
| Theories of Political Behavior and Communication | Politicians are more concerned with the future than the past; hence, they are more interested in the goals set than in applying performance information for ex-post evaluations of goal attainment. | Askim (2008) |
| | Performance information is used selectively rather than systematically because of opportunistic and strategic reasons of legislators. Legislators from governing parties can be expected to highlight measures indicating success, while legislators of opposition parties point to failures. | Moynihan (2005a); Patty (2009); Pollitt (2006b); Julnes & Holzer (2001) |
| Theories of Political Budgetary Behavior | Budgeting is a process driven more by political rationality than by economic rationality. Hence, various aspects "prevent" the allocation of resources according to what performance information would suggest. | Bendor, Taylor, & Van Gaalen (1987); Rubin (1993); Wildavsky (1966) |

In sum and for both periods, the study of parliamentary use of information is driven by reforms that led to an increased exposure of individual legislators to information of different kinds. Inquiries of the 1970s and 1980s focused mostly on the use of policy information and evaluated the effects decentralization and specialization on the U.S.

Congress. More recent works have been interested in the general use of performance information on administrative action. It is characteristic for both periods that the ultimate research interest lies with the impact information had on legislators making particular decisions. Overall, overwhelming evidence is that legislators little value available information, although there are patchy insights of factual and direct use of the information for decision-making purposes. We argue that a turn to conceptual treatments of human information behavior – including works from allied scholarly fields – may help understand contradictory findings and set the course for a more systematic analysis of politicians' information behavior.

# 3 Information in Conceptual Treatments

Publications providing conceptual foundations for the study of legislators' information behavior are based on an actor-centered paradigm. Such a focus requires the clarification of three basic questions: first, why does an individual *need for information* arise at all?; second, what is *the basis of politicians' policy positions* and how does information relate to it?; and lastly, what do we mean by *using* information? We have selected these questions for further elaboration because they may help us to conceptually grasp the "things" to which we aim to attach the empirical "facts", as Sartori (1970, p. 1039) has put it.

## 3.1 Human Information Behavior Occurs in Context

Performance information supplied by the public administration serves a purpose. From its perspective, this type of information is first and foremost meant to provide the basis for performance appraisals by politicians. The underlying assumption is that information on these dimensions serves politicians' need to do so. However, for politicians, this kind of information is secondary when it comes to how public managers, programs, and organization are to be evaluated (ter Bogt, 2004). This is not because of poor understanding of how an evaluation has to be carried out but because of a *different* one. Apparently, politicians' need for appraisal is much better served by process-related information, whereas information on outputs and outcomes is used for various other purposes along with the decision-making process (Askim, 2007). Instead of focusing on the analysis of a particular kind of information – such as performance information – considerations from the field of information science suggest that the

utilization of any kind of information and human information behavior in general are better understood by shifting the research focus toward the actors and their context.

Building on Wilson (1981, 1997, 1999, 2000, 2006b, 2006a) and on his widely acknowledged conception of human information behavior (Bawden, 2006; Cronin, 2001; Jarvelin & Wilson, 2003), it is claimed that research which aims to understand the actual use of a particular kind of information should focus on the end user and on the context wherein the individual information behavior occurs. This notion rests upon the fundamental proposition that a *need for information* does not arise out of a vacuum but is induced by a particular *situation* in which a person finds herself. An information need is not to be conceived to be a primary need. When people look for information, they try to satisfy personal needs of a more basic nature (Wilson, 1999), such as physiological, affective, and cognitive needs (Wilson, 2006a). Because the situations in which information is sought and used are social situations, these basic needs in turn can be claimed to arise out of the roles a particular person fills in social life and within a particular environment. One of these roles might be the professional role and the corresponding set of activities and responsibilities – all embedded in some organizational setting, where earnings or other satisfactions are pursued and sanctions avoided.

In essence, individuals' and hence politicians' information behavior is a consequence of particular circumstances stimulating basic needs that require satisfaction (Wilson, 1999). Multiple options might be available to reach that goal out of which the acquisition of information is only one among a host of possibilities. By the same token, it should not be assumed that conventionally defined performance information is the only kind of information on which politicians ground their performance judgments. Rather, a myriad of different types of information may complement or even substitute for one another in order to satisfy an individual need for appraisal. Surveying politicians about the overall use of one particular kind of information is too general an approach because it fails to grasp this plurality of opportunities actors have and it lacks the comparative perspective on performance information.

As Wilson notes, his model is a "macro-model" or a model of the "gross information seeking behavior" which suggests how information needs may arise in general and their dependency on the context (Wilson, 1999, p. 252). However, for the analysis of

the concrete information needs of a politician, we require an approach for the "micro-moment" of how particular situations provoke information needs.

Kagan (1972) proposed the concept of *information need* as a "cognitive representation of a future goal that is desired." However defined, an information need remains a subjective concept, an experience that occurs only in the mind of a person and is beyond direct observation. One obvious way of operationalizing information needs is therefore to look for how the actual demands for information change--that is, an analysis of the different kinds of information or information sources used depending on the situation (Brittain, 1970). To our knowledge, this is the way empirical studies of politicians' information behavior have addressed the issue so far. However, exploring particular information needs means, in addition, addressing the fundamental question of *why* an individual decides to seek information, what purposes she believes it will serve and how the information will actually be used when acquired. An examination of information demands solely is thus rather unsatisfactory because it cannot provide answers on these questions

From a theoretical perspective, the question of why people tend to look for information can either be tackled from an "objective" or a "subjective" point of view (Case, 2008, p. 72 ff.).[6] From the former perspective, information needs are thought to be relatively fixed and assumed to stem from some sort of uncertainty. Purposeful thinking, advocates of this camp suggest, leads to information seeking and its instrumental use to solve an existing problem and to reduce uncertainty, respectively (e.g., Atkin, 1972, 1973). Approaches belonging to the subjective camp originate from semiotics; the study of language and other cultural products as systems of signs that convey meaning by way of established conventions. From this perspective, information needs and subsequent search are contingent upon how a person perceives a particular situation. Subsequent information search and utilization are then considered as attempts to "make sense' of that situation (Artandi, 1973, pp. 243-244).

Brenda Dervin's Sense-Making-Approach offers, according to Case (2008), the most ambitious attempt to explain the origins of information needs. The concept consists of a situation, out of which information needs arise; a gap that emerges as a difference between the existing situation and the desired situation (e.g., uncertainty reduction); a

6 However, from these two basic approaches different middle range theories and models of information behavior were developed and are comprehensively summarized by Fisher, Erdelez & McKechnie (2009).

corresponding outcome or, in other words, the consequences of the sense-making process; finally, the bridge entails some means of closing the gap between exiting the situation and the envisioned outcome. From this perspective, information needs are conceived as individual attempts to answer questions in one's head and to make sense of a current, "gappy" situation (Dervin, 1983, p. 170; Savolainen, 2006, p. 1120). This may be a quite rational attempt to solve a problem or to reduce uncertainty, but may also be triggered by a vague feeling of unease or simply by anxiety about a current situation.

In sum, and as Wilson (1999, pp. 253-254) comments, Dervin's approach enables one to analyze individual information behavior in context. In addition, it unfolds its strengths for the study of politicians' information behavior because of its methodological consequences. The approach prompts a way of questioning that attempts to reveal the nature of the *problematic situation*, the extent to which *information serves to bridge the gap*, and the nature of the *outcomes from the use of information*.

## 3.2 Ideology, Interest and Information as the Basis of Policy Positions

Askim's (2007) strategy to respect the context of legislators' information use and to analyze the extent of performance information utilization along the decision-making process represents a promising approach which clearly evidences that one kind of information, namely performance information, is considered to varying degrees and for different purposes depending on the particular situation. However, we think that the shift of the research focus away from the examination of particular kinds of information could be more radical in order to gain even more insights about politicians' information behavior. We propose to climb the "ladder of abstraction", as Sartori (1970, pp. 1040-1041) noted, to create a more inclusive concept of the situation than decision-making stages. It has to be one that allows the identification of the reasons for the varying *extent* information use and provides at the same time the possibility to hypothesize about *how* information is put in place by politicians when actually used. It therefore seems advisable to consult treatments that try to understand information's proper place within the entire phenomenon of individual decision-making of politicians, before information as a particular aspect of interest is uncoupled and analyzed in more detail.

At the end of the 1970s, Carol Weiss began a sequence of seminal articles and developed conceptual ideas which, according to Pollitt (2006a), are the most cited within the research area of politicians' information needs and usage and are still relevant to date (Weiss, 1979, 1998, 1997). Weiss conceives the formation of policy positions of politicians as the result of a complex interplay of three sets of forces: their *ideologies*, their *interests*, and the *information* they have.[7] Weiss (1983, p. 221) notes that when different groups of actors engage in discussions and bargaining to determine the final shape of potential policies, other forces come into play. It is well known that negotiations within and across organizations as well as in the political arena are affected by a variety of structural and procedural influences, such as hierarchy, specialization, fragmentation of issues, reliance on routines, and control of information resources (cf. Weiss, 1983, p. 221, FN 4 for various treaties on these aspects).[8] Nevertheless, Weiss holds that, "the *content* of each group's policy positions, as these are advanced initially and modified in the course of negotiations, is based on the interplay of ideology, interests, and information as the group interprets them" (1983, p. 221, italics in original).

For Weiss, *ideology* encompasses a broad range: philosophy, principles, values, political orientations. For her, ideology may include any relatively coherent political predisposition as well as vague proclivities. In essence, at ideology's core are ethical and moral values, which generate general dispositions toward particular policies. These dispositions arise because political ideology represents an "evaluative-descriptive-prescriptive account of the political world" that is "normative, ethical, moral in tone and content" (Lane, 1962b, p. 173f; 1962a, p. 15). Although people's ideologies may be loosely integrated, they represent a basis for position taking because they provide an emotionally charged normative orientation toward an issue. In other words, although most of the people do not have comprehensive ideologies that provide a ready-made answer to every problematic situation, they have general predispositions like "government should not over-regulate private enterprises" or "the environment should be protected" which give them a clear direction to work out their ideological position when dealing with concrete issues.

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7 This information-processing model of decision-making is formalized by Sylvan, Goel, & Chandrasekaran (1990).

8 In accordance with organization theorists like Herbert Simon and James March decision making is conceived in a broader sense and encompasses not only the final selection among various alternatives but also the preceding activity of identifying the issue worth of attention, setting goals, and designing suitable courses of action (Simon, 1992, p. 32; March, 1994, p. 23).

*Interest* is primarily defined as self-interest and encompasses, for example, the fact that politicians strive for reelection, their ambitions for higher authority positions, their eagerness for power and influence. Interests represent "the stuff of politics" (Weiss, 1983, p. 224f). The play of interests dominates our thinking of policymaking. Very often, it takes place at center stage and is disseminated by the media. But it also goes on backstage, in the offices of agencies and at meetings of policy actors. Elected representatives have a stake in the configuration a particular policy takes. The "electoral imperative" has been a familiar concept for a long time now (Mayhew, 1974): Legislators as a particular group of policy actors care about voters' preferences and the effects of a decision on their chances for reelection, their relationships to fellow party members and other parliamentarians, the consequences for chairmanship within parliamentary committees, etc. A familiar sociological proposition is that people tend to believe in ideologies that are in line with their self-interest. Findings with this respect are well-documented and summarized under the maxim "where you stand depends upon where you sit" (Weiss, 1983, p. 237).

*Information* represents the factual assumptions on which policy positions are based (Weiss, 1983). Information of any kind comes from many sources: from the politicians' own parties or organizations and their routines and structures or from interest groups located outside these structures; it is conveyed through formal and informal channels or systems; it may originate from the politician's own experience, from friends, neighbors, the media, or flow from a variety of other sources. Information supplied by the public administration fits somewhere in this "informational mélange" (Weiss, 1983, p. 228). However, in politics too, information does not exist as such, but has bearing on policy positions by being embedded in an explanatory framework. Depending on the policy issue of interest, a particular model usually suggests a causal relationship in the sense that, simply put, changes in a variable *X* will lead to changes in an outcome *Y*.

The point is that these three forces allow operationalizing the concept of the context and to hypothesize about the likely potential for information to enter individual decision-making in a substantial way. Depending on the situation in which the politician finds herself and the decision to be made, respectively, the influence of each force – information, interests, ideology – on the formation of a policy position varies. The potential for information to be considered mainly depends on three different interactions (Weiss, 1983, pp. 229-239): The extent to which the information supplied is compatible with prior information or with settled knowledge about "how the world

works"; the way in which available information alters a politician's perception of which policy position is in her interest; and lastly, whether existing information is supportive or challenging to politicians' basic policy predispositions and her ideology, respectively. This so-called "ideology-interest-information framework" is used as a diagnostic scheme for identifying the configuration of these factors in a particular policy situation. The framework allows developing, as Weiss (1983, p. 241) proposes, hypotheses about the likely effects of information under different circumstances.

In essence, one could claim that all potential situations a politician finds herself in differ according to the *degree to which ideology and interests harmoniously suggest* how to decide on a particular issue. For example, at one extreme, we can think of situations where a politician's ideological commitments are powerful and interests arrayed on one side of the issue. In such a situation, one could hypothesize that new information incompatible with the current constellation will have a small chance to influence what a politician "already knows" and hence, will tend not to alter the position her ideology and interest harmoniously suggest on that issue. We may call these kinds of constellations *Situation 0.* In Situation 0 the world and the causal relationships therein are clear to a person, no ambiguities exist, and decisions are usually made "in passing" since ideology and interest tell the politician how to position herself in no uncertain terms. This is not to say that all politicians make the *same* decision on a given problem but that it is clear where a particular politician will stand since we know where she sits.

At the other extreme, it is possible to think of policy issues where a politician finds her ideology and interests in conflict and where only new information can help to solve her dilemma. In such a situation she "does not already know" what to decide on a particular issue. The ideology she believes in and the interests she represents fail to provide a harmonious orientation, so that we may hypothesize that she will likely welcome new information that helps her to take a position. These kinds of constellations could be labeled *Situation 1.* In Situation 1 the world and the relationships therein are ambiguous and confusing. This prevents a politician from easily taking a position and makes her receptive to ideas or information that help her recast the nature of the problem. It is not clear where she will stand because she does not exactly know where she is sitting.

In sum, applying the 'ideology-interest-information framework' provides a more inclusive analytical approach that covers, for example, a differentiation among timely defined decision-making stages. The achieved generality comes without any loss of

precision, since, the remaining differentiates – decision situations located between the poles of Situation 0 and Situation 1 – are precise. No matter how all-embracing the conceptualization obtained appears to be, it still bears a traceable relation to a collection of specifics – ideology, interests, and interest – that can be tested empirically (Sartori, 1970, p. 1041).

## 3.3 The Use of Information

The situation thus defined and within which a politician finds herself is not only held accountable for shaping her information needs and staking out information's general potential to influence positioning, but is also claimed to affect the way available information is actually *used*. The focus of current literature prevents conclusions about this aspect of politicians' information behavior. In general, current studies with substantial empirical components credit their outmost attention to the *extent* to which a particular kind of information is reported to be used by politicians and take it implicitly for granted that this information, such as performance information, is used according to its designated role – namely, for the evaluation of an agency's or a program's performance.

The use of performance information by politicians for performance evaluation purposes is only *one* type of use and corresponds to, what Weiss (1979, p. 427) has called, the "Problem-Solving Model" or what Caplan (1976) has named as the "engineering model"; a pending decision implies that information provides empirical evidence and conclusions that help to take a position on a particular issue or to solve a problem at hand. However, there are other understandings of what "using information" may actually come to mean. In sharp contrast to this understanding, stands the "Political Model" of information use. For example, in Situation 0 constellations where strong ideological commitments exist and interests array on the same side of the issue, positions that politicians take are claimed to be highly predetermined and information's potential to shift their positions can be considered to be rather low. However, this is not to say that provided information is not used at all. In such circumstances, information is likely to be used, for example, as "ammunition for the side that finds its conclusions congenial and supportive" (Weiss, 1979, p. 429), and probably denied or disputed by the other side.

The potential of analytic information to be used in these ways has been acknowledged by different authors (Knorr, 1977; Wildavsky, 1979; e.g., Davidson, 1976; Lindlom &

Cohen, 1979). By studying the role of policy analysis in congressional decision-making, Whiteman (1985) provided empirical evidence on this phenomenon and identified three types of information use by politicians. He notes that "what primarily differentiates the three types of use is the strength of the policy-maker's commitment to specific solutions to policy problems" (Whiteman, 1985, p. 298). *Substantive* use of information is observed in the absence of strong commitments to specific solutions. In such policy situations, available information is used by legislators in the search for a satisfactory issue positioning. *Elaborative* use describes the utilization of analytic information in extending and refining the components of a position, which is already environed by a commitment to a specific approach to the policy issue. In cases where legislators have have made strong commitments to a well-defined position, policy analysis is used *strategically* in the process of "reinforcing or confirming the wisdom of individual judgments regarding current legislative approaches of general policy questions" (Whiteman, 1985, p. 302). In addition, Whiteman observed that these different types of use were linked to the degree of conflict over an issue in the sense that greater conflict resulted in more strategic use of information. Substantive and elaborative utilization are less common but consequential in low-conflict environments, where legislators try to arrive at or modify issue positioning.

Other authors have developed different categories for basically the same ideas (see Leviton & Hughes, 1981, pp. 528-529 for examples). In sum, they highlight an important aspect that has been out of focus so far – namely, that the term "use" is rather misleading, since it attempts to describe something that in fact is much better characterized as "interplay" between an available information and a situation-bounded individual. Rein (1980, p. 366) therefore holds that information "has no meaning independent of its use." He is essentially arguing what has already been noted by Dervin: that the use of information is dependent upon the gap an individual politician perceives in a given situation. This approach does not assume a "neutrally" acting legislators but individuals behaving according to how they see and interpret things and people around them. Their worldview fundamentally shapes the definition of a particular policy problem and, to be logically consistent, can be claimed to alter the ultimate use of available information.

# 4 Implications for the Study of Politicians' Information Behavior

Research interest in legislators' information behavior is not new. It was a topic of heated debate decades ago, when reforms aimed at enhancing U.S. Congress' capacity to make informed policy decisions. There is an agreement that after these reforms, as Bimber (1991, p. 590) concludes, Congress was indeed better equipped with information and expertise. However, more information neither altered the policy process nor did the availability of expertise guarantee its use by legislators. To us, current research on the availability and utilization of performance information resembles very much the reform debate of the 1970s and 1980s, except for the kind of information that is of main interest nowadays. With this respect, it is surprising that treatments of politicians' behavior toward performance information have not built more systematically on existing concepts and empirical results.

## 4.1 General Implications for Future Research

This paper aimed at drawing an outline of the knowledge we have about politicians' information needs and uses. Essentially, we argue that existing and sometimes contradictory results could be better appreciated if attempts to understand politicians' behavior toward performance information were based on research designs that consider the implications of context, the information-decision nexus in a political environment, and the possibility of using available information in non-substantive ways. Reorienting research according to these aspects has implications on what traditionally has been understood by performance information.

First, the reform debate of the 1970s and 1980s highlights that the problems of using expertise and policy analysis were seldom connected to its quality or quantity. Rather, the value of the information for legislators varied according to the political *context* it was provided (Bimber, 1991, p. 586). The inclusion of context in the study of politicians' information behavior is crucial. It conceptualizes individual information needs as second order needs which arise out of a particular policy situation a politician faces. Information of whatever kind is therefore to be treated as only one mean toward a specific end. Performance information can be claimed to compete with other means of goal attainment or to supplement them, but it is hard to treat it in isolation from context. Askim's (2007) disaggregation of the policy cycle in different decision stages is an indication for the claim that the relevance of performance information varies

depending on the situation. It qualifies conclusions suggesting that performance information is not valued by politicians and used only rarely. Attempts to understand the use, nonuse or even misuse of performance information need therefore to address how politicians perceive the decision situations they face and which questions they try to answer therein. These attempts also need to elaborate on the goals these actors try to achieve by using performance information. The inclusion of context implies a shift from the analysis of particular kinds of information toward the context-bounded individual.

Second, the 'ideology-interest-information' framework provides a useful approach to operationalize that context and the policy situations politicians face, respectively. It acknowledges that information is only one factor on which politicians base their decisions. By integrating the influence of ideology and interests, the framework allows incorporating the *political* rationale which mediates the information-decision nexus and conditions the claim that performance information has per se little potential to influence individual decision-making in a political context. In other words, in policy situations, where individual predispositions of politicians are claimed to be strong, information that is incompatible with the individual constellation of ideology and interest can indeed be expected to have a low potential to influence the outcome of individual decisions. However, if we think of policy situations where ideology and interests cause a dilemma for a legislator in the sense that individual predispositions fail to provide a clear issue-position, available performance information would have at least a hypothetical potential to orient politicians' decision outcomes.

Third, as Feldman & March (1981) have argued, information is embedded in social norms that make it highly symbolic. As most of the empirical treatments show, information of whatever kind is only rarely used in patterns envisioned by simple rational decision theory; that is, in a substantive way in order to make 'rational' decisions. Rather, available information was observed to be used by politicians mostly in a strategic way (Whiteman, 1985). Why should this be different for the case of performance information? Besides highlighting the boundary conditions for performance information to be used in a substantive way, Weiss' (1983) framework allows understanding the various other purposes performance information supplied by the public administration may serve in a political context.

This shift in the focus of analysis implies, lastly, a fundamentally different understanding of performance information. Conceiving politicians as need-driven and goal-oriented information users in particular policy situations requires that the

definition of what pieces of data provide information about a manager's, public program's or organization's performance is within the meaning of the individual, or at least within the meaning of the group of politicians. The conventional claim that performance information refers to systematic information about outputs and outcomes basically presumes that performance is to be evaluated based on results, efficiency and effectiveness. TerBogt's (2001, 2003) studies on the evaluation style of politicians suggests that these are not the primary criteria along which politicians judge performance. Rather, they seem to focus on dimensions that report on the various aspects of the functioning of the organization and the manager. From this perspective – and to put it simply – studies that define performance information conventionally 'necessarily' arrive to the conclusion that instruments reporting on outputs and outcomes are rarely used to evaluate performance. In this light, results showing that legislators *do* use written performance information and previously considered as contradictory to existing insights (Askim, 2009, p. 34; 2007, p. 466) become compatible, since they evidence that performance information is used by politicians for *different* purposes – for example, to identify problems and set them on the political agenda, to specify alternatives, and to monitor the implementation of programs and policy initiatives (Askim, 2007, p. 458).

## 4.2 Practical Research Strategy Implications

Aside from these general implications for future research, we want to put forward practical research strategy implications concerning the relevant unit of analysis, the nature of the cases to be studied as well as the characteristics of expedient research methods.

As empirical studies from both research periods show, lobbyists, staffers, and specialist legislators act as knowledge brokers and "filter" information of all kinds before key takeaways are communicated to other politicians. With respect to future research on performance information use, one could therefore ask whether we should continue to focus on individual politicians as the relevant *unit of observation* or rather focus on groups of people, such as a politician and her staff, or groups of politicians. This focus would help us to illuminate how information finds its way through the political arena: to identify the "structures" of various communication flows between front-benchers and back-benchers, specialist and non-specialist legislators, or between politicians and staffer. All affect in one way or another the content of any kind of information and its potential use.

We think that there are at least three reasons why future research should stick to the individual politician as the relevant unit of analysis. First, studies from the 1970s and 1980s did focus on groups and already provide a good deal of knowledge about the flow of information among the various actors and actor groups involved in the entire parliamentary decision-making process (see Sabatier & Whiteman, 1985, pp. 395-401, 413-415 for a review of those studies and conclusions). For example, we know from these studies that legislators heavily rely on cues from specialized colleagues; that these specialist legislators are substantially involved in setting the agenda and specifying policy alternatives in committees; that the legislative staff can, overall, be considered as the most important source of information for specialist legislators, but that staff influence depends on the structure of resources; that nonspecialists have more contact with external sources, such as administrative agencies and interest groups; that all legislators consult different sources in order to obtain "policy information" compared to "political information"; and that the most important criteria for selecting sources of policy information are the source's accessibility, and its ability to provide concise, relevant information in a timely manner. We doubt that a refocus of research activities on groups will bring more to light on performance information than what is already known about the broader category of policy information.

Second, as one might argue, the filtering and transformation of information, which is propelled by a variety of structural and procedural influences of groups, necessarily results in biased information for the individual political decision-maker. One can therefore claim that observing an individual's information behavior underestimates the factual use of performance information; hierarchy, specialization, fragmentation of issues, reliance on routines, control of information resources, and so forth cause distortions. Hence, looking at groups would much more reflect the "real" extent of performance information use. There are convincing formal arguments suggesting that this might be an erroneous belief. Basically, the core of those arguments holds that distortions in the "informational reservoir" to which an individual has access are already manifest at the group level. In a seminal article, Calvert (1985) has shown that political principals with bias look for information and opinions that come from sources with similar biases. The logic is straightforward: even though neutral advice and "unfiltered" information may be available, a politician chooses to consult advisors and information which are biased in favor of her own predispositions, because they are more likely to influence her final decision (Calvert, 1985, p. 551). This "demand side" calculus of biased information *acquisition* has recently been complemented by Patty's

(2009) ”supply side” argument of biased information *provision*. Being aware of a politician’s preferences concerning policy options, even unbiased advisors bias their “information collection in a manner that confirms the political principal’s *ex ante* bias” (Patty, 2009, p. 386, italics in original). Voluntarily-biased information provision by advisors is based on a two-pronged piece of logic: The pursuit of unbiased information is counterproductive for the advisor, because, on the one hand, it frequently does not have an effect on the politician’s choice of *which* policy option to choose, but, on the other hand, does lower the *quality* of the policy chosen to implemented. In sum, we have good reasons for recommending that future research avoid a less parsimonious group level approach as long as the distortions such research thereby seeks to counter do not vanish.

Lastly, studying groups of people clearly has the objective of investigating the “information-seeking behavior” of politicians and not their information needs. It is legitimate to focus on this dimension and to derive more pragmatic conclusions concerning the design of information systems and its development in light of existing communication structures. This approach may reveal insights with respect to the efficiency of information systems or their effectiveness, such as how fast can these systems provide responses and of what quality. However, “such studies may never address the central question of “information need”, that is, why the user decides to seek information, what purpose he believes it will serve and to what use it is actually put when received” (Wilson, 2006a, p. 662).

Another concrete research design issue that is closely related to the relevant unit of analysis concerns the *nature of the cases* we choose to study. Since we know that politicians have varying issue interests, the question arises whether we should consider politicians’ “average” decision behavior or focus only on behavior related to subjects of great importance to them. Analyzing “average” decision behavior, as existing studies in both research periods demonstrate, can reveal the overall popularity of particular information sources, provide the relative frequency with which an information source is consulted, inform us about the direction and the intensity of communication flows, and may come up with other, more general and rather structural insights. But because information behavior is highly contextual, this approach may fall short of grasping the dynamics a concrete policy situation induces on the goals to be attained, the individual information needs which arise there from, and the role particular information may play in the attainment of those goals. It seems more promising for future research to concentrate on particular or concrete decisions and try

to infer insights from those cases that help explain why certain information sources are preferred while others are used less frequently, why the flow of communication among actors takes on a particular structure, and so on. However, this does not necessarily imply that we should confront politicians only with subjects important to them. It only means that we should not ask haphazardly.

With respect to *appropriate research methods*, this actor-centered paradigm of information behavior requires future research to apply extremely case-sensitive data-gathering techniques. For example, Dervin's (1983) Sense-Making-Approach offers an interview method for revealing how politicians perceive a particular policy situation, what they define as "gappy" or problematic about the policy, and how available information may serve to bridge that gap. The approach allows the researcher to enter the realm of intensive interviewing (Case, 2008, p. 214) and to gather in-depth information about phenomena which are very much subjective in nature. At the same time, this method sacrifices a considerable potential to generalize findings.

One way to enlarge this potential could be to embed Dervin's interview approach in a quasi-experimental design (Cook & Campbell, 1979). Weiss' (1983) "ideology-interest-information framework" represents a promising opportunity to frame the basic experimental conditions. In a simple setting, participants would be confronted with a 'Situation 0' or 'Situation 1' scenario. Different kinds of information could be made available for review – on a so-called storyboard or a computer monitor (Case, 2008, p. 200) –, before an individual decision about the policy issue would be made. Embedded in this main method, but sequentially after the experimental part, the researcher could conduct her interview with a special focus on the dimensions of interest but based on the specific policy decision presented.[9]

Instead of creating a static picture of politicians' preferences for particular kinds of information, systems or sources, the experimental part of such a "concurrent nested strategy" (Creswell, 2003, pp. 218-219) would confront a participating politician with a specific decision problem in order to systematically observe, analyze and compare

9 For design guidance, one can consult the literature on consumer behavior, which includes a great number of attempts at using experiments to understand how people look for and use information when faced with a purchasing decision (e.g., Hauser, Urban, & Weinberg, 1993 cited in Case, 2008, p. 199). The idea to combine the experimental approach with an interview comes from experimental psychology, where researchers are not only interested in determining the aggregate effects of an experimental situation but also the individual perception that might have produced those effects. Helpful advice for how interview questions should be framed within such a setting is already available (e.g., Merton & Kendall, 1946; Kahn, 1991).

her information behavior with that of others handling the same or another problem. The idea is not to make statistical generalizations for the population of politicians. The quasi-experimental part is rather useful to make theoretical generalizations (Webster & Sell, 2007, p. 190); and to characterize basic mechanisms that are at work when politicians consider information in particular decision situations. Ideally constructed, these scenarios would represent extremes with respect to the degree to which ideology and interests harmoniously suggest how to position. However, the approach's strength could be its ability to highlight the boundaries the political rational sets for the use of information.

From our point of view, the interview nested in the quasi-experimental approach is vital for the main goal of explaining politicians' information behavior in these two polar situations. It should therefore be designed to capture politicians' view of the problematic (gappy) situations. It should aim at empirically characterizing and apprehending the information needs politicians have, when facing such a context, the extent to which information serves to bridge the gap, and the nature of the outcomes from the use of information. Mapping politicians' perceptions and arguments in different situations, contrasting them with the observed behavior, and making a comparison within and among experimental groups could enable future research to shift toward the functions and purposes available information serves for politicians given a particular context.

In sum, such a design is meant to take the potential influence of "politics" seriously. The decision problems presented to the participating politicians require weighing politically salient values. They would be a constitutive feature of the study and would allow the end user of performance information – the individual politician – to be the starting point of analysis. Such a design would enable researchers to examine from the very beginning how constellations of ideology and interests drive the subjective definition of the decision problem, frame the subsequent aspects of information behavior, and shape the decision ultimately taken.

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# ARTICLE 2: WHAT CAN PERFORMANCE INFORMATION DO TO LEGISLATORS? A BUDGET DECISION EXPERIMENT WITH LEGISLATORS


## Abstract

*Existing studies on the influence of performance information on budgeting decisions are limited and have produced contradictory findings. This paper argues that most previous work has somewhat problematically focused on self-reported use of performance information rather than on the legislative context into which performance information is introduced. This study offers a framework that links performance information to legislators' budgeting decisions. I argue that the impact will differ depending on whether performance information is reflected in the budget proposal, whether the allocation issue concerns a politically difficult value tradeoff for the decision-maker, and whether the implications of the performance information fall into a receptive partisan mind. This paper studies these aspects by manipulating the first two of these factors in an experimental setting involving budgetary decision-making by 57 actual legislators. The control groups consist of 65 undergraduate students. The results show that the introduction of performance information into the legislators' deliberation process leads to stronger deviations from the status quo allocation. I argue that this difference occurs because performance information highlights more clearly the expected consequences of budgetary changes and allows for more pronounced reactions. This paper concludes that more informed decisions based on good performance budgets might also create a situation in which it is more difficult for legislators to compromise because individual positions become more polarized.*


## 1 Introduction

The logic of allocating public resources based on the results produced by public policies is so intuitively appealing that it has long remained the main focus of budget reformers (Hilton & Joyce, 2012). For nearly a century, the budget process has been subject to reforms (Dawes, 1923; Key, 1940; Banfield, 1949; Mosher, 1954; Schick, 1966). Early modifications, such as apportionments, line-itemization, and restrictions on shifting funds, were control-oriented. The aim was to design a system that binds operating officials to the policies set by their superiors. Subsequent changes prioritized the management and planning dimensions of budgeting; performance budgeting, program budgeting and zero-base budgeting were initiatives designed to ensure a more efficient allocation of resources. These systems were based on the assumption that changes in budget structure, procedures and available information would alter actor behavior accordingly (i.e., these changes would support a move from an input-oriented

process to a results-focused or performance-informed approach to budgeting) (Bretschneider, Straussman, & Mullins, 1988). In practice, commentators claim that these reforms have failed to live up to their promises and to change the way public monies are allocated (Schick, 1973; Dempster & Wildavsky, 1979; Harkin, 1982; Downs & Larkey, 1986).

Research on the impact of performance information on government budgeting can be divided in two fields. One field is concerned with broad correlations between the content and use of available information on the one hand and final allocation outcomes on the other hand. Results from this field provide mixed insights, but the overall balance is negative and suggests that information has no significant effect on the manner in which government budgets are constituted (Gilmour & Lewis, 2006; Heinrich, 2012). The other field of research focuses on the individual level and has been concerned primarily with how public managers deal with performance data (Pollitt, 2006a). Studies on the use of performance information by politicians, particularly legislators, are rare. Existing works have analyzed the ways legislators use available information in the political process and investigated whether elected officials perceive data related to aspects of performance as useful for their decision-making process (Askim, 2007, 2008, 2009; ter Bogt, 2001, 2003, 2004; Raudla, 2012; Hou, Lunsford, Sides, & Jones, 2011). For this field of research, results are also mixed. However, overall, the reported insights are also more pessimistic than optimistic. To explain the low valuation and influence of performance information on government budgets, researchers from both fields cite the quality or availability of performance information, the personal characteristics of legislators, or the political nature of the budgeting process, which interferes with rational notions of government budgeting.

Recently, a small number of researchers have started to question these conclusions based on methodological and conceptual concerns (Demaj & Summermatter, 2012; Moynihan, 2013; Nielsen & Baekgaard, 2013). With respect to methods, these authors claim that studies based on broad correlations between information provision and budget appropriations and studies that rely on legislators' self-reported information use are unlikely to provide answers to the behavioral question at the heart of performance budgeting (i.e., whether and how information influences legislators' allocation decisions). From a conceptual perspective, most recent research holds that previous works failed to systematically account for the contextual variables that influence the leverage of information on people's judgments (Wilson, 2006). Contextual variables shape the way people perceive the available evidence and alter the use of this

information for decision-making purposes. Overall, the problem encountered in current research is that these types of studies are limited to relatively simple conclusions concerning whether performance information influences budgeting decisions.

This paper is based on the validity of these objections and makes two contributions to the study of the impact of information on legislators' allocation decisions. First, this study provides a parsimonious framework that explicates the conditions for information processing in a political decision-making context. This study argues that information's impact on legislators' budgeting decisions will differ depending on three aspects of the context into which the information is introduced: whether performance information is reflected in the budget proposal, whether the allocation issue concerns a politically difficult value tradeoff for the decision-maker, and whether the implications of the performance information fall into a receptive partisan mind. For the case of government budgeting, this framework provides a consistent set of hypotheses concerning the manner in which performance information relates to legislators' decisions. The framework is able to integrate both the politics of public budgeting and people's behavioral tendencies to process information. As a result, the framework specifies the theoretical conditions for *when* and *how* information is likely to influence legislators' allocation judgments and provides more than an "either-or account" of information's leverage.

Second, to test the hypotheses proposed by this framework, a decision-making experiment was designed and conducted using Swiss state legislators. Like most research related to public management, prior studies of performance information use for budgeting decisions rest primarily on observational or field data (Pitts & Fernandez, 2009; Nielsen & Baekgaard, 2013; Moynihan, 2013). These research designs might be appropriate for establishing external validity, but they fall short in providing internal validity (Ostrom, 2007, p. 2). In particular, while case studies, surveys, and interviews can help establish an accurate understanding of how actual decisions are made, the simultaneous treatment of presumed cause and effect by any non-experimental approach severely limits conclusions about the causality between the variables of interest (Konisky & Reenock, 2013). By conducting an experiment, this study establishes a suitable methodological approach for testing the causality of the proposed model and for producing reliable insights concerning whether and how information *could* influence legislators' budget decisions.

The remainder of this paper begins by providing an overview of existing studies of the impact of information on budget appropriations. The focus of this review is the treatment of legislators' information use for budgeting decisions. The following section explicates the legislative context into which performance information is introduced and considered by legislators. The framework explicates how information relates to legislators' budget decisions and offers three specific hypotheses concerning the likely effects of this process. The methodology portion of this paper discusses the merits of this experimental approach in the context of the question at hand, operationalizes the theoretical constructs and the experimental design, and provides information about the implementation of this approach. Next, the experimental results are presented. The final section presents my conclusions about the implications of this experiment for research, theory, and practice related to performance budgeting for legislators.

# 2 Research on Performance Budgeting for Parliaments

## 2.1 The Empirical Base Regarding the Impact of Performance Information

Despite the disappointing outcomes of the first budgeting reform period prior to the 1990s,[10] new attempts at output- and outcome-oriented budgeting were instituted around the globe with the beginning of New Public Management reforms. Depending on the stage of the budgeting process (i.e., preparation, approval, execution, audit and evaluation), reformers and students of government budgeting propose different possibilities for how resource allocation can be explicitly linked to demonstrated performance (e.g., Joyce & Tompkins, 2002). In its most fundamental notion, performance information and associated performance budgets provide decision-makers with information concerning how particular results may change if resources are

10 See Pollitt & Bouckaert (2011, pp. 75-87) for national trajectories in financial management reform; OECD (2007) for an overview of performance budgeting reforms in Australia, Canada, Denmark, Korea, the Netherlands, Sweden, the United Kingdom, and the United States; Holmes & Shand (1995), Hawke (2007), and Blöndal, Bergvall, Hawkesworth, & Deighton-Smith (2008) for a particular focus on Australia; Osborne & Gabler (1992), Ho (2011), and Hou, et al. (2011) for reforms in local and state governments in the United States, as well as Joyce (2011) for the national government; van Nispen & Posseth (2007) for reforms in the Netherlands; Küchen & Nordman (2008) for reforms in Sweden; Noman (2008) for reforms in the United Kingdom; and OECD (2008) for the New Accounting Model in Switzerland.

increased or decreased (OECD, 2007). In sharp contrast to previous reform periods, which focused only on the executive branch of government and ignored the role of legislatures (Schick, 1973), today, elected representatives are also asked to compare costs to marginal effects on government performance, to make their expectations clear to the executive, and to judge budget proposals based on the provided performance information (e.g., Pollitt, 2001; Joyce & Tompkins, 2002; Pollitt & Bouckaert, 2011).[11] Ultimately, the "goal of adding performance data to budgets is to change resource allocation behaviors" (Moynihan, 2013, p. 4).

Research on performance budgeting reforms tends to focus either on broad correlations between the content and use of performance information and changes within government budgets or on the ways in which individual actors use performance information (Moynihan, 2013). Members of the former field of research are interested in the overall effect of performance budgeting reforms. Reform success is implicitly or explicitly equated with whether observable co-variations exist between the indications of performance information use or provision and appropriated budgets (Moynihan & Lavertu, 2012; Moynihan & Pandey, 2010). This research is motivated by the question of whether the allocation of public resources is indeed based on evaluation results and on projected program success (Willoughby, 2011; Kelly & Rivenbark, 2003; Joyce, 2011). The 'Government Performance and Results Act' and the 'Program Assessment Rating Tool' (PART) represent attempts to explicitly integrate performance considerations into the appropriation of budgets. For example, Gilmour & Lewis (2006) revealed that the President's budget proposals tended to contain larger funding increases if government programs reported high PART scores. In contrast, Frisco & Stalebrink (2008) and Heinrich (2012) were unable to find a significant effect of PART scores on Congress' budget appropriations.

Researchers in the latter field of research tend to focus on individual-level perception and use of performance information. The empirical focus has been on how managers and professionals deal with performance information (Pollitt, 2006b). Insights concerning how legislators perceive and use the new information within budget documents and whether this information has an influence on budget decisions have been primarily shaped by anecdotal evidence. To the best of my knowledge, only five

11 Pioneering countries that have adapted their budget appropriation structures to this concept include Australia (Chan, Nizette, La Rance, Broughton, & Russel, 2002), the Netherlands (IOFZ, 2004), Canada (Blöndal, 2001), Sweden (Regeringskansliet, 2000; Sterck, 2007), and several states of Switzerland (Schmidt, 2008). Other countries will soon follow (OECD, 2007).

studies provide substantial material related to aspects of legislators' performance information use (ter Bogt, 2004; Ezzamel, Hyndman, Lapsley, Johnsen, & Pallot, 2004; Askim, 2007; Johnson & Talbot, 2007; Raudla, 2012). Based on survey and interview approaches, these studies provide ambiguous insights. Self-reported evidence indicates that legislators have low valuations of performance information but it also shows factual and direct use of this information for decision-making purposes. Overall, the tenor of commentators is skeptical (e.g., Bussmann, 1996; Joyce, 1997; Moynihan, 2005; Pollitt, 2006a). The reasons proposed to account for legislators' information behavior are variable and interconnected. Some of these reasons go back to the very nature of the political process, in which "muddling through" is a dominant characteristic and "the electoral connection" motivates politicians to be more concerned about whose interest will be benefited than maximizing aggregate national welfare (e.g., R. A. Dahl & Lindblom, 1953; Mathews, 1960; Schick, 1976; Mayhew, 2005). Other theories attribute inefficiencies in the allocation of public resources to a more general problem: the co-occurrence of evermore complex decision problems and the limited human capacity to perform standard rational analysis (e.g., A. Tversky & Kahneman, 1974; Slovic, Fischhoff, & Lichtenstein, 1977; Simon, 1978; Amos Tversky & Kahneman, 1981). Overall, the budget process is perceived as a phenomenon in which the principles of fair shares of rewards and burdens drive the allocation of increments or decrements to organizational budgets and program funds, pushing considerations of efficiency and effectiveness to the periphery (Wildavsky, 1964; Fenno, 1966; Sharkansky, 1968; Thurmaier, 1992).[12]

## 2.2 Evaluation

Conclusions about the ineffectiveness of performance information in influencing resource allocation do not stand on firm empirical grounds. Most studies of the first reform period focused on the executive body of government, were post-hoc, and relied on semi-structured or unstructured interview data, which were most often gathered from participants from a single jurisdiction or agency (Bretschneider, Straussman, & Mullins, 1988).[13] In addition, "most of the literature on budget reform is not empirical at all" (Bretschneider, Straussman, & Mullins, 1988, p. 308). Instead, "thought

12 For critiques and a rival explanation to the incrementalist view of budget formation, see Natchez & Bupp (1973), Gist (1977), Kamlet & Mowery (1980), Bozeman & Straussman (1982).

13 (Bretschneider, Straussman, & Mullins, 1988, FN 9) mention only the study of (Harper, Kramer, & Rouse, 1969) as a counterexample.

experiments" are applied to reform proposals in an attempt to predict the impact of these proposals by reasoning through analogy. Those studies that include a substantial and more recent empirical component have been claimed to suffer from methodological and conceptual issues (Demaj & Summermatter, 2012; Nielsen & Baekgaard, 2013; Moynihan, 2013). They will be discussed next.

In general, current research on the impact of performance information on legislators' budget decisions tends to ask respondents to report whether and how frequently they use performance information, which sources they prefer, and whether they are satisfied with the quality of the information they receive and to estimate the impact of this information on their budget decisions. Approaches that rely on case studies, interviews, or survey procedures to gather empirical material face severe limitations with respect to the internal validity of the conclusions they generate (Konisky & Reenock, 2013). Observational studies might help establish an accurate understanding of how legislators actually make budgeting decisions; however, if a particular relationship is of interest to the researcher, these approaches experience difficulties in controlling for other, extraneous influences and in isolating the impact of the factors of interest (Ostrom, 2007, p. 2). For the phenomenon of interest, this limitation is particularly pressing because "budgeting is a horribly complex decision problem" (White, 1985, p. 627). In addition, Feldman & March (1981, pp. 177-178) argued that the "command of information and information sources enhances perceived competence and inspires confidence" and that "decision makers and organizations establish their legitimacy by their use of information." From this perspective, current conclusions concerning the impact of information on legislators' budgeting decisions are to be treated with the outmost caution. Interviewing or surveying legislators about their performance information use is more likely to reveal lawmakers' views about the basis of competent and legitimate positions than to reveal the actual influence of the information on decision outcomes.

Contradictory empirical findings related to performance information's impact on legislators' budget decisions might also result from conceptual issues. For example, current studies tend to ignore the vital role of context in human information and decision-making behavior (Wilson, 2006). In interviews or surveys, performance information is at the center of the research interest, not legislators and their perceptions of the problems and questions that arise from the government budgeting process. Based on the generated results, current studies make conclusions concerning legislators' information use for budgeting decisions that are detached from the

particularity of the political arena and the information needs that this environment generates for its actors (C. H. Weiss, 1983). In one way or another, observational studies measure legislators' reported extent of performance information usage or appreciation and then make claims about the likely effects of this information on the elected officials' decision outcomes. However, this shortcut cannot take into account the many different purposes politicians pursue by using information (Davidson, 1976; Knorr, 1977; Lindblom & Cohen, 1979; Feldman & March, 1981; Whiteman, 1985). In most cases, information serves as political "ammunition for the side that finds its conclusions congenial and supportive" (C. H. Weiss, 1979, p. 429).

Only recently have researchers started to change the way they examine "the behavioral question at the heart of performance budgeting" (Moynihan, 2013, p. 5) (i.e., whether and how performance information can influence legislators' budget decisions). These two new studies (Nielsen & Baekgaard, 2013; Moynihan, 2013) differ from previous works in two important ways. First, both of these studies choose experimentation as their preferred vehicle for establishing internally valid conclusions. Second, Nielsen & Baekgaard (2013) and Moynihan (2013) choose an actor-centered approach and argue for the application of an explicitly political perspective in examining the impact of information on budget decision-making. Both studies operationalize aspects of the political context that are important in determining whether and how performance information might affect allocation decisions. For example, Nielsen & Baekgaard (2013) consider political credit-claiming and blame-avoidance as central aspects of legislators' rationale in processing the content of performance information and making allocation decisions. Nielsen & Baekgaard (2013) show that Danish city councilors increase funding not only in response to high-performing public schools (i.e., credit-claiming) but also as a reaction to poor results in a politically salient policy area (i.e., blame-avoidance). Moynihan (2013) is interested in how variations in the context in which identical performance information is presented alters subjects' tendencies to allocate resources. He finds that changing advocacy, goal ambiguity, and expectancy alter students' budget decisions, although corresponding reports on performance remain the same. The present study shares the methodological and conceptual choices made by Nielsen & Baekgaard (2013) and Moynihan (2013) and provides in the next section an alternative characterization of the relevant legislative context in which performance information is considered by lawmakers.

# 3 Performance Information in a Parliamentary Setting

Legislators do not consider performance information in isolation and seclusion. This paper proposes a different operationalization of the context and the political rationale that govern the impact of information on allocation judgments. In this section, I identify three relevant dimensions and highlight the extent to which these dimensions can vary and shape the impact of information on legislators' budget decisions. By budget decision, I mean a legislator's conclusion concerning how to change a given level of funding for the upcoming year. This decision is the initial position of a legislator before hierarchy, internal division of labor, fragmentation of issues, routines, the control of resources and many other aspects come into play and contribute to the final decision outcome of the entire legislative body (e.g., Wilensky, 1967; Simon, 1976; Lindblom, 1980; C. H. Weiss, 1983; Allison & Zelikow, 1999).

## 3.1 Performance Information is Not the Sole Determinant of Budgeting Decisions

When performance information reaches legislators, it has entered a politically defined *decision scenario*. For this group of actors, the budget problem is not technical or analytical in nature; it is political. In the most general sense, the government budget represents the essence of the political process (Wildavsky, 1964). In defining the scope and scale of state activity, the final budget outcome reflects which needs of the society will be satisfied and which needs will be repelled in the light of scarce resources, as well as whose preferences have prevailed (Wildavsky, 1961). Because public budgeting is a process that produces winners and losers with respect to welfare (Bretschneider, Straussman, & Mullins, 1988, p. 305; Smith & Lynch, 2004, p. 37), information of any kind is not the sole determinant of legislators' budgeting positions. Carol H. Weiss (1983) describes ideology and interests as two other sets of forces that interact with available information and together form the stance of policy makers' decisions. Essentially, the author's 'ideology-interest-information' framework holds that based on the degree to which ideology and interests predispose political actors' positions, the potential for information to impinge on decisions varies.[14]

14 See Sartori (1969) for a very similar conception of the role of information in the formation of policy positions.

Ideology is a widely used but highly flexible conceptual tool. Only a small number of notions have generated as much discussion and disagreement within the social sciences as ideology.[15] For the purpose of this study, ideology implies a coherent set of opinions, attitudes, and values, which justify, explain, and help to judge historical events, identify political right and wrong, and set forth the causal and moral interconnections between politics and other spheres of activity (e.g., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Loewenstein, 1953; McClosky, 1964; Mullins, 1972). Ideologies do not provide ready-made answers for every decision problem in policy-making, but they provide their followers with general orientations. Followers share inclinations, such as "government should not over-regulate private enterprises" or "the environment needs to be protected," which give those followers a direction in which to work out their positions. Interests represent the other driving force of position formation. Interests are primarily defined as self-interest. In the case of politicians, the main interest is assumed to be dictated by the 'electoral imperative' (i.e., the motivation to act and decide in a way that increases the chances for reelection or for chairmanship within parliamentary committees) (Mayhew, 2005). As a general rule, ideology and self-interests do not contradict each other. In fact, psychological and economic research indicates that individuals are highly inclined to skew beliefs to line up with personal interests (Lewellen, Park, & Ro, 1996; Babcock & Loewenstein, 1997; G. Dahl, B. & Ransom, 1999). Therefore, in this paper, I will consider ideology and interests as a single force and refer to this force as political intuitions.

In this conception, political intuitions may posit two hypothetical polar constellations vis-à-vis information. At the one end of the spectrum, decision scenarios or allocation issues exist that prompt harmonious political intuitions among legislators. In contexts where ideological commitments are powerful and personal interests array on the same side of the policy question, the value tradeoff prompted by an allocation issue is unproblematic. Information that is incompatible with the current constellation of political intuitions is expected to have a small chance of changing the current knowledge of the decision-maker. At the other end of the spectrum, allocation issues exist that cause a conflict among legislators' political intuitions. In such decision scenarios, ideology and interests fail to provide a clear orientation toward a given allocation issue. This failure does not occur because these dimensions lack salience. This difficulty in deciding arises because an allocation issue embeds two or more

15 In a widely recognized article, Gerring (1997) offers a comprehensive definitional analysis of ideology as an intellectual concept.

competing values or interests and requires the individual to make a tough if not impossible tradeoff (e.g., Payne, Bettman, & Johnson, 1993; Luce, 1998; Anderson, 2003; Hanselmann & Tanner, 2008). Therefore, decision-makers are more likely to welcome information that helps them to recast the nature of the allocation problem.

## 3.2 Performance Information is Not Available in Isolation

Within these polar constellations of political intuitions, performance information may enter the individual decision-making process. Schick (2011) suggests that the function of performance information is to inform decision-makers about what segment of society will get more or less of services, outputs, results, or any other relevant measurement if a particular budget is increased or decreased. However, even under the most favorable circumstances, performance information itself cannot provide the ultimate basis upon which legislators make budgetary choices. As Joyce (1997, p. 54) notes, "one cannot simply reward those agencies whose measures indicate good performance (performance in excess of some agreed-upon target, for example) and take resources away from those whose measures indicate bad performance." In some instances, bad performance measures might be the very piece of evidence legislators seek to increase funding for an agency or a program. Therefore, in a parliamentary setting, performance information is always embedded in a *budget proposal,* which specifies the resource implications of this data based on previously defined outcome targets.

Like any other kind of policy information (e.g., Bardach, 1984; Majone, 1992), performance information must be considered to be data that has been purposefully assembled to convey a particular meaning; in this case, this meaning is the net marginal utility of expenditures. The international trend of embedding performance information in budget proposals, thus linking this information with particular budget questions, suggests that we view performance information as a type of evidence invoked by the budget initiator to support its budgetary conclusions. Logic dictates that the better the fit between the evidence and the conclusion or statement, the more pronounced and the better is the case made for an argument (Lorenz, 1973). Recent performance budget reforms can be interpreted as attempts to improve this fit and increase the consistency between budget proposals and performance information. Budget reformers claim that ideally, agencies' "bids would be supported by description and analysis of why the changes are sought and of how the funds are expected to produce the planned results" (Schick, 2011, p. 23).

With respect to pending allocation issues and from a budget initiator's perspective, "good performance information" must support budget proposals. Vice versa, "good budget proposals" should be consistent with the available performance information. A better causal fit between budgetary conclusions and performance information implies that consistent proposals illustrate more clearly the expected marginal utility of expenditures and can therefore be expected to represent a more pronounced budget request. This effect, in turn, enables legislators to better evaluate the consequences of their budget decisions and can be expected to facilitate more pronounced judgments about whether legislators agree or disagree with or support or oppose the budget initiator's proposal. In short, the aim of adding performance information to budget proposals is to include momentum in legislators' consideration of the status quo of the funding situation. Therefore, changes in allocations, rather than the absolute levels of public budgets, reflect the impact of performance information. There is no doubt that in practice, the quality of the performance information that is embedded in budget proposals must be improved continuously to better highlight which policy increments and decrements follow from changes in funding (Matheson & Kwon, 2003; OECD, 2007). However, the critical question is whether this purposefully assembled performance information is associated with a budgetary proposal that is consistent with the information and ultimately, whether preparing such a proposal makes a difference for legislators' budget decisions.

## 3.3 Performance Information Is Partisan

As stated by Wildavsky (1964, p. 5), "the victories and defeats, the compromises and the bargains, the realms of agreement and the spheres of conflict in regard to the role of national government in our society all appear in the budget. In the most integral sense the budget lies at the heart of the political process." Therefore, it is in the nature of budgeting and as a consequence, in the nature of the performance information embedded within budget proposals to champion particular political ideas and positions. Performance information is therefore *partisan*, not per se but in effect. Therefore, improving the causal fit between evidence and conclusions does not necessarily imply that legislators' budget decisions can be influenced accordingly. With this statement, I am not referring to the psychological mechanisms that are known to hamper the ability of a person to accurately understand the content of information (A. Tversky & Kahneman, 1974; Kahneman, Slovic, & Tversky, 1982). These mechanisms can only explain why people form distorted conclusions. However,

these mechanisms fail to account for recent observations that these distortions differ systematically among opposing political blocks.

In a series of treatments, Dan Kahan and his colleagues introduced the so-called 'Cultural Cognition Thesis,' which holds that people's values will unconsciously shape the process through which available information is interpreted and produce conclusions that fit pre-existing commitments to worldviews and groups (Kahan, 2011, 2012, 2013a, 2013b; Kahan, Braman, Cohen, Gastil, & Slovic, 2010; Kahan, Jenkins-Smith, & Braman, 2011; Kahan et al., 2012; Kahan, Slovic, Braman, & Gastil, 2006). Psychological mechanisms associated with "motivated reasoning" (Kunda, 1990) ensure that people's bounded consideration of policy information does not aim for accuracy. Instead, reasoning is employed to reach conclusions that are in line with the suggestions of one's beliefs and group loyalties. These mechanisms explain why citizens continue "intense political contestation over empirical issues on which technical experts largely agree" (Kahan, Jenkins-Smith, & Braman, 2011, p. 147). Examples of such issues include the significance of human activity for global warming (Armitage, 2005; Cameron, 2005); the safety of nuclear power waste disposal sites (Jenkins-Smith, Silva, Nowlin, & Delozier, 2011); the effectiveness of vaccinating school-aged girls against the human papilloma virus (Colgrove, 2006); and the contribution of stricter gun regulations to decreasing crime (Boylan, Kates, Lindsey, & Gugala, 2013).

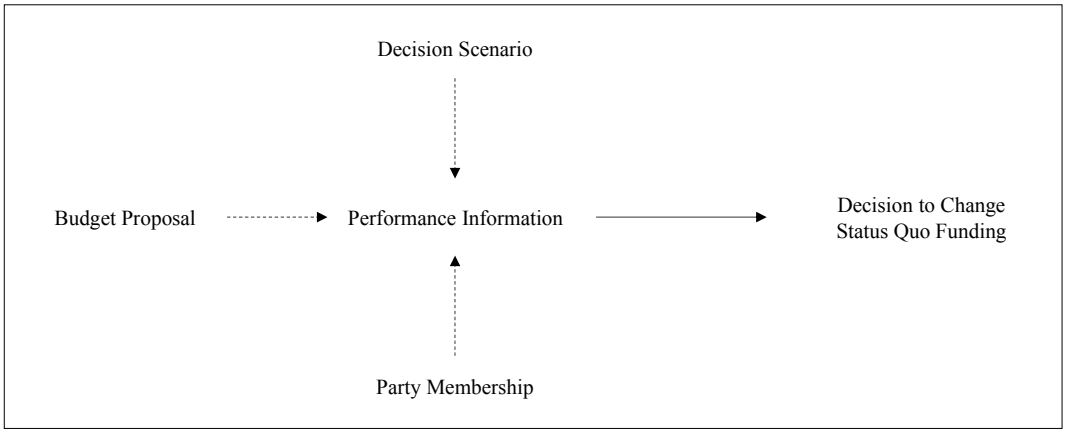
This human tendency, which becomes relevant when individuals process policy-relevant information for decision-making purposes, represents a crucial factor for understanding the impact of performance information on legislators' allocation decisions. Because performance information reveals the consequences of budgetary changes for policy results and therefore for certain segments of society, this data is useful for some legislators and challenges the positions of other legislators. The Cultural Cognition Thesis suggests that for legislators to whom a given piece of performance information is congenial, latent political intuitions might indeed be intensified and transformed into strong predispositions, eventually increasing support. In contrast, opponents might be even more inclined to object to a suggested course of action, simply because unwanted consequences are outlined more clearly. Therefore, budget proposals that are consistent with the suggestions of the available performance

information do not necessarily win arguments; instead, such proposals can "make people on the wrong side dig in even deeper" (Krugman, 2013).[16]

## 3.4 Framework and Hypotheses

Figure 2 depicts how these three aspects relate to performance information. The framework suggests that performance information's impact on legislators' budgeting decisions depends on the following factors: first, whether performance information is consistently reflected in the budget initiator's proposal; second, whether the allocation issue concerns a politically difficult value tradeoff; and finally, whether a legislator is ideologically receptive to the implications of this information.

**Figure 2: Performance Information in a Parliamentary Setting**




This framework suggests the following hypotheses for *how* performance information impacts budgeting decisions, *when* this influence is more likely to occur, and *whose* stance is affected by the implications of the available data:

*H1 (how): Performance information helps making a more pronounced budget request and therefore causes legislators to choose more extreme deviations from the current level of funding. Associated budget proposals reinforce this effect, especially when these proposals are consistent with the implications of the available information.*

*H2 (when): The influence of performance information is contingent upon the decision scenario. Performance information has a larger impact in situations*

16 For the so-called 'backfire effect', see Nyhan & Reifler (2013).

*where legislators face conflicting political intuitions and seek help in re-casting the nature of the problematic allocation issue.*

*H3 (whose): The influence of performance information is contingent upon a legislators' party membership. Because performance information highlights which segments of society will obtain more or less from altered funding, this information reinforces legislators' political inclinations and increases both political support and political opposition.*

# 4 Methodology

## 4.1 Analyzing Budgeting Decisions with Experiments

This study proposes the experimental method as a promising research approach to drawing insights on the impact of performance information on legislators' budgeting decisions and to testing the hypotheses proposed by the framework. In its simplest form (Campbell & Stanley, 1963; Lijphart, 1971; Konisky & Reenock, 2013) and in the ideal experimental setting, two *equivalent groups* are used to test a theoretically interesting independent variable whose presence is assumed to have an effect on a specific outcome of importance. Subjects are *randomly assigned* to either the treatment or control group to account for known and unknown factors of influence (Margetts, 2011, p. 191). The treatment group is exposed to the *stimulus,* while the control group is not exposed to this stimulus. Finally, the researcher *measures* subjects' response to the outcome of interest. If the average outcome differs significantly between the treatment and control groups, then a researcher can assume with high certainty that the relationship of interest is causal. However, experiments are rarely used in public management research. In her review on the value of this method for this field, Margetts (2011) is able to identify only ten articles that report results from experiments. Barriers specific to experimentation in public management remain intact: the difficulty of recruiting subjects, such as bureaucrats or politicians, the need for practical solutions, which outrank "truth" or theoretical abstraction, and logistical constraints, such as a lack of training in the experimental method for public management researchers. However, overcoming these barriers offers the opportunity for knowledge accumulation, rigor, and theoretical orientation (Lijphart, 1971).

In particular, the experimental method offers three major advantages compared to the observational approaches that have been applied to study the impact of performance information on budgeting decision outcomes. First, the experimental method allows

researchers to observe the effect of a small number of decisive variables on the aspects of interest. In this way, even highly complex phenomena, such as budget decision-making, can be reasonably reduced to a few specific relationships while other factors are held constant (J. A. Weiss, 1982). This scenario is difficult to achieve with case studies, surveys or interviews. Statistical tools can help to isolate effects within observational data, but these tools are unable to establish the degree of certainty pertaining to the relationships among variables in the same way that experiments can (Lijphart, 1971, p. 684). Second, even the most reliable insights have a limited range of applicability. The experimental method illuminates this range by deliberately creating the kinds of situations in which cause and effect are claimed to hold (Foschi, 1997). Again, for the analysis of observational data, partial correlations can be applied to explore these circumstances. However, the statistical method represents only "an approximation of the experimental method" (Lijphart, 1971, p. 684). Third, the experimental method examines causality by manipulating one or more independent variables and measuring triggered effects on the dependent variable. This temporal ordering of cause and effect permits straightforward conclusions about the causality of relationships, in contrast to other methods, such as interviewing or surveying, where researchers face serious threats to internal validity due to the simultaneous treatment of independent and dependent variables (Webster & Sell, 2007).

Experiments do not attempt to produce findings that generalize from an observed sample to a larger, unobserved population as statistical generalizations aim to do (Dooley, 2001). Experiments are meant to test theoretical ideas (Campbell & Stanley, 1963; Roth, 1995) and are designed to create the circumstances most favorable for observing propositions from these ideas on the behavior of subjects. The goal of experiments is to uncover mechanisms of human behavior that hold across scenarios in which the same theoretical constructs apply (Henshel, 1979; Lucas, 2003). Due to the researcher's full control of the experimental environment, life in natural scenarios differs in many ways and legislators are not expected to act the same way inside and outside of the experimental treatments applied here. Therefore, there are threats to the external validity of experimentally drawn inferences (i.e., the possibility that the relationship studied does not hold in the real world). To control for this threat, there are several dimensions of "realism" that controlled experiments in general and this study in particular must address (Brunswik, 1955), not only to enhance the behavior of the subjects and to increase the internal validity of the test but also to ensure that the findings are relevant to individuals who aim to understand the impact of performance

information on legislators' budgeting decisions (Drabek & Haas, 1967). Therefore, this experiment is conducted using real Swiss state legislators, who deliberate about an actual allocation issue with realistic political tradeoffs and consider current performance information.

## 4.2 Budgeting Context of Swiss State Legislators

To create an experimental decision situation in which legislators' confrontation with performance information resembles the natural scenario, a basic understanding of Switzerland's political control structures and the implications of these structures for the budget appropriation process is necessary. In this context, Schedler (2001) gives a detailed account:[17]

- The Executive Council is a collegial authority of five to seven ministers. There is neither a president nor a prime minister. All councilors have equal rights. Together, the councilors constitute a single decision-making body.
- The Swiss states' political systems belong to the so-called 'concordant' democracies. In contrast to the 'competitive' democracies of Anglo-Saxon countries, virtually all major political parties are represented in the Executive Council.
- Unlike the Westminster system but similar to the U.S. system, the legislatures in Switzerland's states (i.e., the Legislative Councils) are part of a system of 'checks and balances.' Neither branch can dismiss the other branch and remove it from power. There is a strong separation of powers and a self-understanding of a Legislative Council as the institutional opposition to the governing Executive Council.
- Laws are the major instrument by which long-term political influence is exerted. On the other hand, the budget reflects the short- and medium-term value that is credited to a certain policy area or field of activity. Contrary to U.S. programs, in Switzerland, a close link between legal obligations and financial resources does not exist. This scenario may lead to situations in which laws are not enacted due to a lack of resources.
- The legislatures appropriate performance budgets on a yearly basis. A performance budget allocates a one-line budget and a performance contract to each of the administrative departments. The legislatures approve how much money is devoted to which purposes.
- The budget proposal is initiated by the Executive Council and its agencies. The budget proposal presents information pertaining to the short- and medium-term

17 Although Schedler (2001) focuses on the federal level, the crucial features of the political system and of the budgeting process also apply to the state level.

consequences of legislators' decisions in terms of costs, government outputs, and policy outcomes over four to six years and provides the executive's suggestion concerning whether and how resource allocation should change.

- Swiss legislators are part-time parliamentarians, and parliamentary secretariats are comparatively weak. Therefore, Swiss parliaments are restricted in their ability to take action. Think tanks are rare; if existent, these bodies are institutionalized and close collaboration with political parties or parliaments is not the rule. Therefore, information brought into the Legislative Councils by the executive branch is seldom challenged by other sources and can hardly be subjected to further scrutiny.

From the legislators' perspective, the budget proposal they receive from the Executive Council serves three functions. First, this proposal represents a starting point for obtaining an overview of current government activities and for evaluating how well departments and agencies are equipped for short- and mid-term challenges. Second, the budget document provides information concerning government inputs and outputs and how successfully the targeted outcomes for each department or agency are met. This information is usually presented for the last, the current and the upcoming budget years, as well as for the subsequent three planning years. In this way, the financial ramifications of legislators' budget decisions for the current account and the investment account are highlighted in a six-year perspective. Lastly, the budget document and the corresponding information provide the executive's point of view on why these changes have unexpectedly occurred or intentionally been initiated. From the Legislative Council's perspective, the ultimate goal during the budget process is to judge whether a particular budgetary development proposed by the executive is right or wrong, good or bad, and consequently, whether a budget proposal is to be supported or opposed.

For several reasons, Swiss state legislators represent suitable subjects for studying the relationships between legislators, performance information, and budget decisions. First, for more than a decade, most of the Swiss state legislatures have been familiarized with performance budgets. Performance information is an integral part of the executive's budget proposal. Only for a few other OECD countries are performance budgets a means for allocation and not merely a label or container for performance-related data (Schick 2011). Second, performance information originates from a separate and independent government body. Similar to presidential systems, the institutional and personal independence of Swiss state legislators from the executive branch prevents these legislators from receiving performance information that they have themselves "helped to craft." Third, unlike in parliamentary systems, the

executive's budget proposal is not only formally but also factually subject to legislative approval. This scenario makes it more likely for performance information to be considered by legislators as a relevant part of the executive's budgetary proposal. Finally, the lack of separate information capacities of Swiss state parliaments and the absence of private alternatives grant executive-based performance information an exceptional role in legislators' budget deliberations.

## 4.3 Experimental Setting and Implementation

*Experimental allocation issue:* This study applies the logic of the ideology-interests-information framework to create experimental decision scenarios that resemble the legislative context and incorporate the political rationale of budgeting decisions. To this end, the allocation issue to be decided in the experiment must require subjects to weigh politically salient values. A purely technical allocation issue would be more accurate from the executive's perspective but would violate the nature of the situations faced by legislators. Therefore, a workshop with representatives from the state Executive and Legislative Councils' secretariats was conducted to ensure that the experimental allocation issue would fit the realities of the Swiss political landscape. The goal was to identify a policy area on which legislators would have a clear stand (i.e., an allocation question that is rather uncontroversial within a given parliamentary party but highly conflictual among different factions). In the Swiss context, the policy area of 'road network capacity,' especially attempts to enlarge this capacity, represent an issue on which state legislators maintain a clear position. The factor that makes allocation questions concerning the enlargement of the road network uncontroversial within a given political party but highly conflictual among different parties is not the issue of roads but rather the implications of this issue for other political values (i.e., the implications for ideologically and interest-laden reference points, such as the 'environment' or the 'economy') (Frey, 1992). In Switzerland, legislators from right-wing parties generally tend to support the enlargement of the domestic road infrastructure because they claim that this infrastructure is a fundamental requirement for economic well-being. In contrast, left-wing legislators usually oppose such attempts based on environmental considerations.

*Decision scenario 'harmonious intuitions':* To create a politically unproblematic value tradeoff in which political intuitions are in line, the tendencies of Swiss right-wing politicians to support an enlargement of the road infrastructure and the tendency of left-wing politicians to oppose such attempts must both be reinforced. This

reinforcement is achieved by introducing another reference point that is directly affected by any budgetary decision on the state road infrastructure. Therefore, legislators facing this decision scenario are told that extra money for an enlargement of the road infrastructure would be funded by reducing financial support for environmental protection; in the case of a budget decrease for road infrastructure, the freed up resources would be spent on environmental protection measures. Irrespective of a legislator's position on the political left-right spectrum, this situation represents an unproblematic value tradeoff because it prompts overlapping political intuitions. Left-wing politicians are expected to opt for decreasing the budget for road infrastructure because from this ideological viewpoint, nature represents a well-balanced organism for which men and their constructions are conceived as potentially destabilizing factors. This "natural tendency" of left-wing politicians to cushion nature from human irritation is further enforced by the associated implications for the financial means for environmental protection, which would be increased at the same time. Stereotypical right-wing ideology suggests the opposite issue-positioning; from this point of view, the budget for road infrastructure is to be increased, as a proper road infrastructure represents a desired outcome based on mutual advantage considerations (Kymlicka, 2002). This "natural tendency" of right-wing politicians is further enforced by the associated changes on the counter account, as the increased budget for road infrastructure would be financed by reducing the means for environmental protection, for which there is general opposition (Dunlap, Xiao, & McCright, 2001).

*Decision scenario 'conflicting intuitions':* To create a politically problematic value tradeoff in which political intuitions contradict, the natural tendencies of Swiss state legislators to decrease or increase funding for road network capacity must be in opposition. To make the given allocation issue difficult for any legislator, funding for road infrastructure is now coupled to the level of business taxation. Therefore, legislators facing this decision scenario are told that the extra money for funding potential budget increases for the state's road network is financed by raising the business taxation level; in contrast, decreasing the financial means for road infrastructure is accompanied by tax cuts for businesses. In this situation, individual issue-positioning becomes problematic, as the given value tradeoff cuts across ideological and interest-based inclinations, irrespective of a legislator's position on the left-right spectrum. The "natural tendency" of a right-wing legislator to support budget increases for road infrastructure is opposed by the associated increases in business taxation. From this ideological stand point, redistributive taxation schemes are to be

opposed because they reduce the inherent efficiency of markets and increase the government's power to regulate economic exchanges (Kymlicka, 2002). In addition, because power corrupts, market regulations represent, as Hayek famously phrased it, "the first step on the road to serfdom" (Hayek, 1944, p. 70). The antagonist left-wing politician also faces a difficult value tradeoff, but for different reasons. The "natural tendency" to prevent nature from human irritation through extended constructions is slowed down by the associated implications on business taxation. From this ideological viewpoint, taxation represents an ex post correction of disparate market outcomes. Taxation is necessary due to the unequal distribution of physical and human capital within the society (Rawls, 1971). Reducing business taxation would only limit the possibility of reducing inequalities within the society (Krouse & McPherson, 1988).

*Performance information, budget proposals, and decisions:* After being confronted with one of these two decision scenarios, all participating legislators are provided with an identical stock of performance information related to the department of road infrastructure. Based on the standard information aspects of Swiss performance budgets (Schedler, 1994, 2001),[18] the report makes the following causal argument: 1) Due to increases in population and the need for mobility, the state's road infrastructure is under serious pressure from traffic volume; 2) As the outcome indicators report, the target value for acceptable hours of traffic congestion, which is set by the Legislative Council, has been continuously exceeded. This value is projected to be three times higher by next year. Therefore, the overall policy outcome goal of a fast and continuous transportation infrastructure is at risk; and 3) To meet the target value for traffic congestion and to ensure outcome attainment, the state road network capacity must be extended over the next four years. However, the current investment budget is not sufficient to execute this development plan (see Appendix A of this article).[19]

Next, the subjects are confronted with one of two possible budget proposals, which vary with respect to their consistency with the implications of the available performance information. In one version, the Executive Council suggests acting to

18 These aspects include outcomes and indicators, financial statistics, a department's goals and activities, the policy environment, outputs and indicators, and future priorities. Overall and ideally, information related to these different dimensions together comprise a model that suggests causal relationships between external challenges and intended political outcomes on the one hand and public funding on the other hand.

19 All numbers and projections were based on real levels and suggestions from the secretariats of the Executive and Legislative Councils.

meet the target value for traffic congestion set by the Legislative Council. Therefore, in its proposal, the Executive Council consistently applies for an increase of the current investment budget for road infrastructure. However, in the other version of the budget proposal, the Executive Council does not suggest enlarging the road infrastructure to meet the outcome target set by the Legislative Council. The budget proposal ignores the indications of the available performance information and inconsistently suggests remaining at the current level of investment funding.

Finally, the legislators are asked to form a position on the allocation issue and to make a budget decision that they would be willing to support in the upcoming meeting of their own party's faction. The subjects are provided with a scale ranging from –100 to +100 percent and asked to indicate their outcome by scrolling a modulator.[20] The resulting decision indicates a legislator's attempt to change the current level of investments in the state road infrastructure and hence her or his desire to vary the capacity of the road network, compared to the previous year. Negative real values were transformed into absolute values and formed the basis of further analysis. In this way, deviations from the current level of investment funding are not 'averaged out' by opposing arithmetic operators from left-wing or right-wing legislators.

*Control groups and sampling:* Because manipulation occurs only in the *Decision Scenario* and the *Budget Proposal* and the stock of performance information is identical for all experimental subjects, this design would offer no conclusions concerning whether the same findings would be expected if performance information were not present at all. Therefore, two control groups are introduced; these groups face one of the two budgetary decision scenarios and make budgeting decisions but receive no performance information or budget proposal for deliberation. Overall, this experimental setup a 2 (Scenario: harmonious intuitions vs. conflicting intuitions) x 3 (Proposal: none vs. inconsistent vs. consistent) between subjects-factorial design (Cook & Campbell, 1979) to test the framework's hypotheses (see Fifty-seven Swiss state legislators volunteered to participate in this experiment. The 21 women and 36 men were 50 years old on average, ranging from 25 to 68 years. The participants represented a total of nine political parties, ranging from the left end to the right end of the entire political spectrum. The legislators served an average period of 6.3 years on the state Legislative Council, with a minimum of 1 year experience and a maximum of

20 Despite some criticism concerning the use of single-item measures, Moynihan & Pandey (2010, p. 857) report that research from diverse research areas finds that single items are not less reliable than multiple measures of the outcome of interest.

21 consecutive years. Thirty-nine participants were members of at least one standing committee, nine members were part of two standing committees, and one legislator was a member of three different standing committees. Fourteen different standing committees were represented by at least one member. The subjects in the control groups represented undergraduate students from the International Affairs & Governance program of the University of St. Gallen in Switzerland. These subjects were an average of 22 years old, ranging from 19 to 37 years. Each individual's position on the political left-right spectrum was self-rated, and the subjects indicated their stance on a 9-point scale.

Table 5).

Fifty-seven Swiss state legislators volunteered to participate in this experiment. The 21 women and 36 men were 50 years old on average, ranging from 25 to 68 years. The participants represented a total of nine political parties, ranging from the left end to the right end of the entire political spectrum. The legislators served an average period of 6.3 years on the state Legislative Council, with a minimum of 1 year experience and a maximum of 21 consecutive years. Thirty-nine participants were members of at least one standing committee, nine members were part of two standing committees, and one legislator was a member of three different standing committees. Fourteen different standing committees were represented by at least one member. The subjects in the control groups represented undergraduate students from the International Affairs & Governance program of the University of St. Gallen in Switzerland. These subjects were an average of 22 years old, ranging from 19 to 37 years. Each individual's position on the political left-right spectrum was self-rated, and the subjects indicated their stance on a 9-point scale.

**Table 5: Control and Treatment Groups**

| | **Proposal** | | |
|---|---|---|---|
| **Scenario** | none | inconsistent | consistent |
| harmonious intuitions | N = 30 | N = 15 | N = 15 |
| conflicting intuitions | N = 35 | N = 13 | N =14 |

Because the aim of the experiment is to draw theoretical generalizations, the assignment of the legislators to the four different treatment groups was not guided by aspects of representativeness (Webster & Sell, 2007). For theoretical generalizations, the purpose of empirical testing is to reflect upon whether the predictions are supported; in this case, the test is designed to reflect upon whether the impact of performance information on legislators' budgeting decision varies according to the difficulty of the value tradeoff, the budget proposal's consistency with this information, and an individual legislator's party affiliation. Ideally, each experimental group would consist of only right-wing and left-wing politicians. This design would be the most promising design for analyzing the impact of performance information within a given decision scenario because this design would ensure maximum within-group variation. Due to the limited number of participating legislators and because there are also lawmakers from center parties, I applied a stratified random sampling approach for the treatment groups (Manski & McFadden, 1981). First, I defined quotas for each party within an experimental group, such that ideological polarity and potential variation within a particular experimental group would be maximized on the one hand and similar ideological polarities and potential variation among the experimental groups could be ensured on the other hand. Next, individual legislators were randomly assigned to a treatment group until the party quotas were filled (see Appendix B of this article).

# 5 Results

An independent sample t-test (Heeren & D'Agostino, 1987) was performed for *perceived decision difficulty* to determine whether the two experimental decision scenarios successfully provided subjects with a fairly easy and a rather difficult value tradeoff. Overall, the legislators confronted with the decision scenario that aimed to prompt harmonious political intuitions perceived the value tradeoff as significantly easier ($M = 1.95, SD = 1.30$) than those facing conflicting political intuitions ($M = 3.32, SD = 1.47$), $t(55) = -3.74, p < .001, d = -0.99$ (see Appendix C of this article). In the following sections, the experimental results concerning the overall model performance and the specific hypotheses are presented.

## 5.1 To What Extent Can the Framework Explain the Variation in Subjects' Budgeting Decisions?

To analyze the data concerning subjects' decisions to deviate from the current level of funding, a straightforward ANOVA design was implemented. This design represents a special case of an ordinary least squares regression and allows for the isolation of the effects of interest for this study (Wonnacott & Wonnacott, 1990). Overall, the model explains a large proportion of the variance in subjects' decisions to deviate from the financial status quo ($R^2$ = .74, $F(27, 95) = 10.02$, $p < .001$). This result suggests that the legislative framework in which performance information was claimed to operate performs comparatively well with respect to explaining the variation in budgeting decisions. All analyzed relationships show a significant effect at the highest level of confidence. For example, performance information and the executive's proposal had significant effects on subjects' decisions to deviate from the current level of funding (*Proposal* $F(3, 95) = 30.95$, $p < .001$). The performance information presented to legislators appeared to influence whether the executive proposed a consistent budgetary action or decided to ignore the information's indication. This information also caused a significant difference in the decision outcome, whether the allocation issue concerned a difficult value tradeoff where political intuitions were in conflict or a politically unproblematic decision where political intuitions harmoniously suggested a position (*Proposal x Scenario* $F(3, 95) = 7.05$, $p < .001$). The same finding is true for the party affiliation of a subject (*Proposal x Party* $F(21, 95) = 3.45$, $p < .001$). The next sections illuminate these relationships in more detail and demonstrate *how* performance information impacts budgeting decisions, *when* this influence is more likely to occur, and *whose* stance is affected by the implications of the available data.

Table 6 summarizes the model statistics.[21]

Overall, the model explains a large proportion of the variance in subjects' decisions to deviate from the financial status quo ($R^2$ = .74, $F(27, 95) = 10.02$, $p < .001$). This result suggests that the legislative framework in which performance information was claimed to operate performs comparatively well with respect to explaining the variation in budgeting decisions. All analyzed relationships show a significant effect at

21 Significant results obtained using the Kolmogorov-Smirnov and the Shapiro-Wilk tests indicate that the data violate the normality assumption of parametric tests of variance. In this case, these results are not of major concern because the model statistics remain significant, although the true α levels are overestimated due to a 'thin-tailed', leptokurtic distribution of the raw data (O'Brien, 1979; Bryk & Raudenbush, 1988).

the highest level of confidence. For example, performance information and the executive's proposal had significant effects on subjects' decisions to deviate from the current level of funding (*Proposal* $F(3, 95) = 30.95$, $p < .001$). The performance information presented to legislators appeared to influence whether the executive proposed a consistent budgetary action or decided to ignore the information's indication. This information also caused a significant difference in the decision outcome, whether the allocation issue concerned a difficult value tradeoff where political intuitions were in conflict or a politically unproblematic decision where political intuitions harmoniously suggested a position (*Proposal x Scenario* $F(3, 95) = 7.05$, $p < .001$). The same finding is true for the party affiliation of a subject (*Proposal x Party* $F(21, 95) = 3.45$, $p < .001$). The next sections illuminate these relationships in more detail and demonstrate *how* performance information impacts budgeting decisions, *when* this influence is more likely to occur, and *whose* stance is affected by the implications of the available data.

**Table 6: Results on Performance Information in a Parliamentary Setting**

ANOVA on the Absolute Value of Decision Outcomes (N = 122)

| | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Model | 90452.611[a] | 27 | 3350.097 | 10.015 | .000 |
| Proposal[b] | 31058.714 | 3 | 10352.905 | 30.950 | .000 |
| Proposal x Scenario[c] | 7077.330 | 3 | 2359.110 | 7.053 | .000 |
| Proposal x Party[d] | 24221.511 | 21 | 1153.450 | 3.448 | .000 |
| Error | 31777.995 | 95 | 334.505 | | |
| Total | 122230.606 | 122 | | | |

| Test of Normality | *Kolmogorov-Smirnov*[e] | | | *Shapiro-Wilk* | | |
|---|---|---|---|---|---|---|
| | *Statistic* | *Df* | *Sig.* | *Statistic* | *df* | *Sig.* |
| | *.230* | *122* | *.000* | *.717* | *122* | *.000* |

[a] R Squared = .740 (Adjusted R Squared = .666)
[b] Proposal: 1=none, 2=inconsistent (status quo), 3=consistent (increase)
[c] Scenario: 0=harmonious intuitions, 1=conflicting intuitions
[d] Party: 1=Green Party, 2=Social Democratic Party, 3=Green Liberal Party, 4=Evangelical People's Party, 5=Christian Democratic People's Party, 6=Federal Democratic Union, 7=Conservative Democratic Party, 8=FDP.The Liberals, 9=Swiss People's Party.
[e] Lilliefors Significance Correction

## 5.2 *How* Does Performance Information Influence Budgeting Decisions?

In the most general sense, Hypothesis 1 is based on the notion that the availability of information helps people define their stance with respect to a given issue in one way or

another. Based on this notion, Hypothesis 1 claimed that by introducing performance information to the deliberation of an allocation issue, legislators will be able to form more defined positions and hence can be expected to make more extreme budgeting decisions than they would without any data. This tendency was proposed to be reinforced by the associated budget proposals in general and by consistent budget proposals in particular, as the latter proposals make a more pronounced, stronger argument and allow for more well-defined positions. This relationship is illuminated in Table 7. To illustrate the results, Table 7 and the associated statistics provide an overview of the distribution of subjects' decisions for the following cases: where neither performance information nor a budget proposal was available (*none*); where performance information was present, but the budget proposal ignored what this information suggested (*inconsistent*); and where the budgetary proposal was consistent with the informational basis (*consistent*). Statistics related to each distribution's central tendency and dispersion provide an adequate description of how performance information and the associated budget proposals influence budgeting decisions.

**Table 7: Hypothesis 1, The Effect of Information on Budgeting Decisions**

Effect of *Proposal* on the *Absolute Value of Decision Outcomes*, averaging across *Scenario* and *Party* (N = 122)

| | | **Budget Proposal** | | |
|---|---|---|---|---|
| | | none | inconsistent | consistent |
| 95% Confidence Interval for Mean | Mean | 11% | 24% | 34% |
| | *Lower Bound* | *9%* | *14%* | *20%* |
| | *Upper Bound* | *13%* | *34%* | *49%* |
| | Std. Deviation | 9% | 26% | 38% |
| | Interquartile Range | 10% | 31% | 51% |

*Note.* Subjects indicated their decision on the investment budget for road infrastructure on a scale ranging from -100% to +100%. For this analysis, negative decision outcomes were transformed into their positive values. The decision made by a subject and hence, the dependent variable therefore indicate a subject's deviation from the current level of funding compared to the previous year.

Overall, the results presented in Table 7 support the notion suggested by Hypothesis 1. For example, the results related to the means of the distributions show that in the absence of information and budget proposals, subjects' decisions to deviate from the current level of funding are the lowest (11%). In other words, in the absence of performance data and budgetary advice, the subjects are most inclined to maintain the status quo allocation. When information is provided during the deliberation process, the decisions to change become more pronounced and the subjects make more extreme deviations from the current level of funding, even if the associated budget proposal is

inconsistent with the implications of the available performance information (24%). The highest average deviation from the current level of funding occurs if the subjects receive a budget proposal that is consistent with the implications of the data (34%). The remaining statistics reveal information concerning the dispersion of each distribution and provide additional support for Hypothesis 1. These measures highlight the distance of individual decisions to change the allocation of public resources from the respective averages. For example, as we move from the column on the left-hand side to the column on the right-hand side, the lower and upper bounds of the 95% confidence interval of each mean become wider, the standard deviation increases, and the interquartile range expands. These metrics further highlight the potential of performance information to accentuate legislators' budgeting decisions.

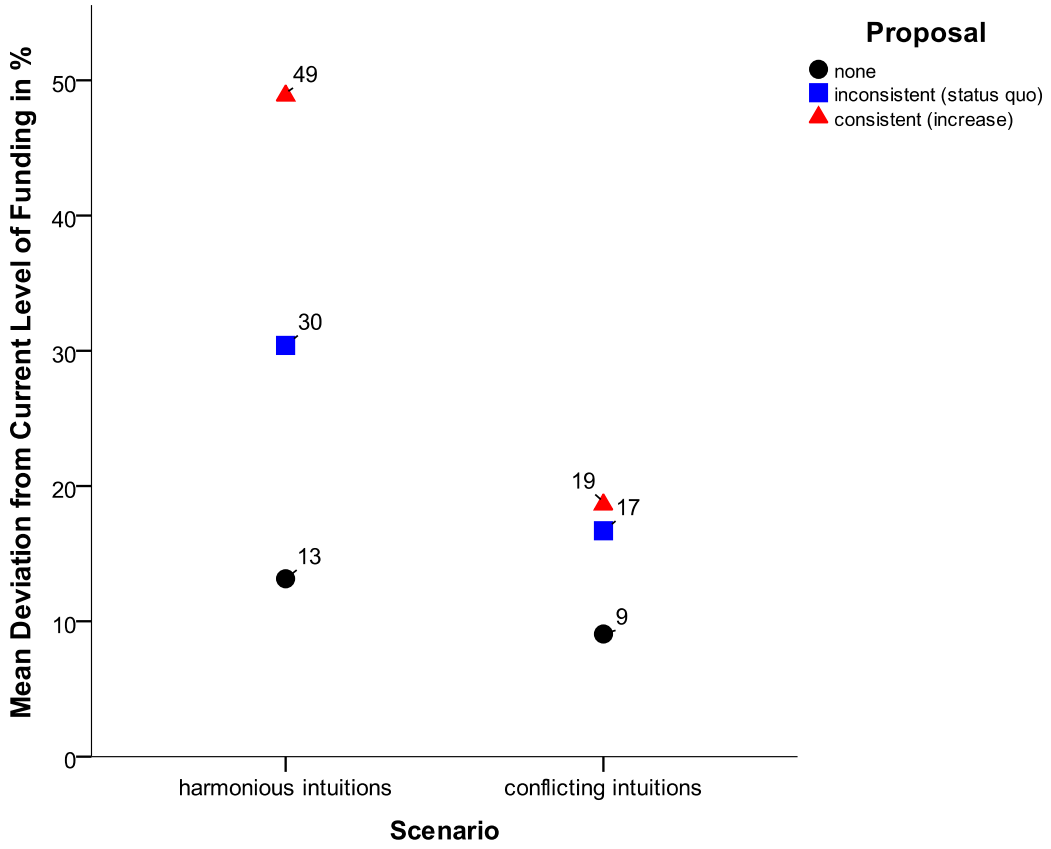
To consider this observed effect valid under all circumstances is premature. From the legislators' perspective, allocation issues can be assumed to differ with respect to their political difficulty. These issues embody value tradeoffs that might range from fairly easy, in which political intuitions provide a clear orientation, to rather challenging, in which ideological and interest-based inclinations might contradict each other. Ignoring the effect of the very substance of an allocation issue on the leverage of information would lead to a distorted view of the ability of performance data to achieve changes within a given budget proposal. Therefore, the next section discusses the manner in which harmonious and conflicting political intuitions moderate the impact of performance information and budget proposals on subjects' budgeting decisions.

## 5.3 *When* Does Performance Information Influence Budgeting Decisions?

Hypothesis 2 is based on the notion of political position-building, as provided by the ideology-interests-information framework. This hypothesis suggests that legislators are more likely to welcome information in decision scenarios where ideology and interests fail to provide a clear orientation. Under such circumstances, legislators are expected to consider information as a means of recasting the nature of the problematic situation and cross-cutting realigning inclinations. In contrast, when the decision scenario is by nature politically unproblematic, information is proposed not to be of major interest to the subjects. If these relationships are true, we should expect the following decision outcomes within each scenario. First, by definition, subjects' decisions to deviate from the current level of funding should be more pronounced if political intuitions are in line; in contrast, conflicting predispositions should cause more conservative deviations

from the status quo. Second, if performance data is introduced into the subjects' deliberation processes, budgeting decisions should deviate more strongly from the current level of funding because information allows for more well-defined positioning. However, conflicting political intuitions can be expected to provide a more promising environment for this effect. Finally, given a common stock of performance information, subjects' budgeting decisions can be expected to react less strongly to varying executive budget proposals if political intuitions already provide a clear orientation concerning how to position themselves.

**Figure 3: Hypothesis 2, The Moderating Effect of Decision Scenario on Information's Impact**




*Note*: Effect of *Proposal* x *Scenario* on the *Absolute Value of Decision Outcomes*, averaging across *Party* (N = 122)

Figure 3 depicts the effect of the interaction between *Proposal* and *Scenario* on subjects' decisions to deviate from the current level of funding. Overall, as expected, subjects' deviations from the financial status quo are stronger when information is present. In contrast to Hypothesis 2, legislators' reactions to the available evidence are

more extreme if their political intuitions are in line. Furthermore, given an identical stock of performance information and a politically difficult value tradeoff, varying executive budget proposals appear to be unable to significantly shift legislators' decisions (17% vs. 19%). I interpret this result as follows: legislators' stronger focus on the available evidence and their quest to draw their own budgetary conclusions prevent suggestions from the executive branch from exerting a considerable effect. In the presence of identical performance information, legislators' baseline deviations from the financial status quo remain intact, regardless of the suggestions of the executive or whether these decisions are consistent with the implications of the available information. In contrast, if an allocation issue prompts harmonious political intuitions, different executive proposals cause highly divergent decision outcomes, although the underlying performance information does not change (30% vs. 49%). The available information appears to be less decisive than the executive's proposal in this scenario. Under these circumstances, consistent and more pronounced budget requests cause legislators to make more extreme budget decisions.

In sum, politically unproblematic decision scenarios provide a more promising context for performance information to impact subjects' decisions to change funding. This effect is intensified if the associated budget proposals are consistent with the implications of the available evidence. Ironically, this situation is unlikely to occur because legislators would worry more about the implications of the given information. In contrast, strong and overlapping political predispositions presumably shift legislators' attention away from information and redirect their attention toward the conclusions of the budget initiator. This mechanism appears to open a backdoor through which performance information can affect individual decision-making. These effects occur under circumstances where the influence of information is expected to be rather negligible based on the ideology-interest-information framework, which was proposed by Carol H. Weiss (1983).

Because this experiment measures subjects' absolute deviations from the current level of funding, it remains unclear whether the increased impact of consistent budget proposals is caused by reactions from both political poles and thus by the price of stronger resistance from opposing political camps. After all, the executive's consistent conclusion to increase investments and to enlarge the road network's capacity represents an overt partisan proposal in favor of right-wing Swiss legislators. Therefore, the final results section will elaborate on this issue and illuminate whether the influence of information is a matter of politically receptive minds.

## 5.4 *Whose* Budgeting Decisions Does Performance Information Influence?

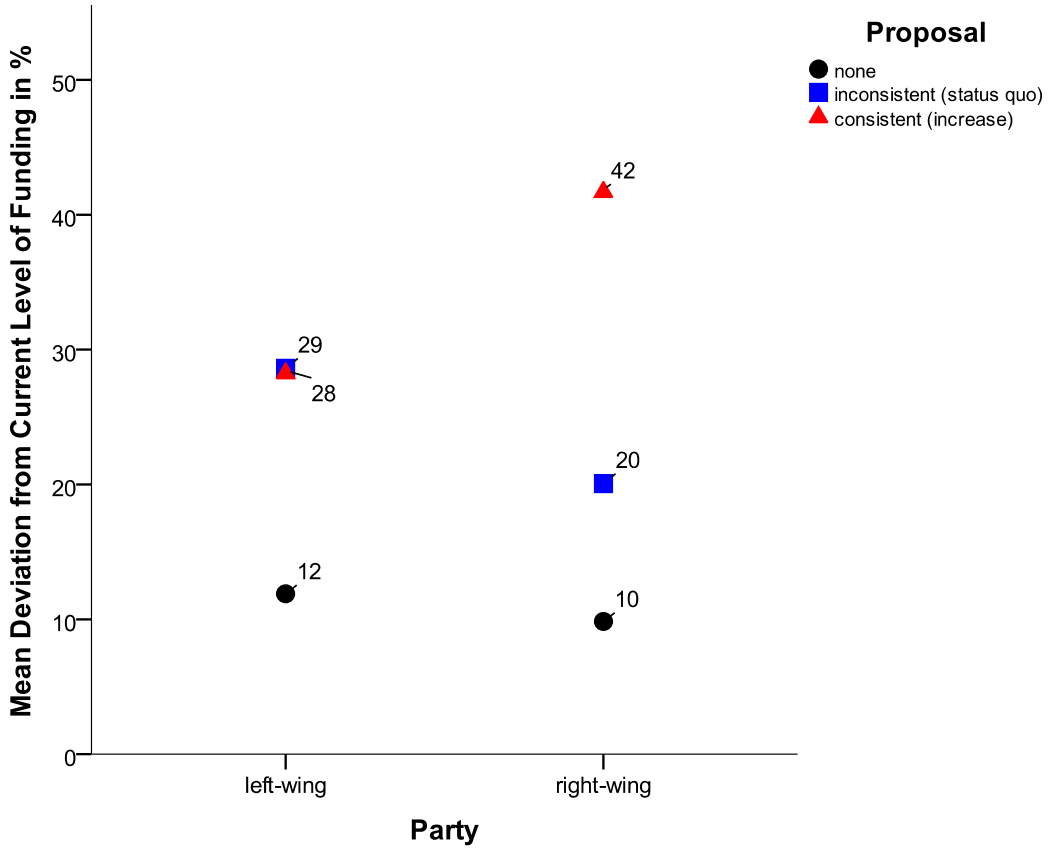
Hypothesis 3 was based on research on the Cultural Cognition Thesis, which holds that psychological mechanisms bias the processing of policy information and skew people's conclusions according to their worldviews and group loyalties. These mechanisms explain why opposing political blocs disagree over established facts, according to the Cultural Cognition Thesis. Based on this view, Hypothesis 3 suggests that for legislators to whom the provided performance information is congenial, latent political intuitions might be intensified and transformed into strong predispositions, eventually increasing support. In contrast, opponents might be even more inclined to object to a suggested course of action, simply because unwanted consequences are outlined more clearly. If this information is associated with a consistent proposal that strengthens the initiator's budget request, this effect can be expected to be more pronounced. Figure 4 reports the results related to this relationship.[22]

The results provide mixed support for the effect proposed by Hypothesis 3. First, as expected, on average, subjects' decisions to change the current level of funding are similar if no information is present that allows for supporting or opposing reactions (12% vs. 10%). Second, legislators' budgeting decisions become understandably more pronounced when information is introduced to the deliberation process that provides subjects with an impression concerning the utility of additional funding. Information enables political positioning and reinforces left-wing and right-wing inclinations to a similar extent (on average, 28.5% vs. 31%). Finally, based on an identical stock of available performance information, left-wing legislators decide on a nearly identical average deviation from the current level of funding, irrespective of whether the executive's budget proposal is consistent with this deviation (28% vs. 29%). Apparently, in contrast to what we would expect, budget proposals fail to influence legislators' budgeting decisions if the informational basis is not congenial to their political predispositions. In contrast, as expected, right-wing legislators have highly divergent decision outcomes depending on the proposal of the executive. When confronted with the proposal to increase investments, these legislators decide to

22 To obtain a better overview of the relationship of interest, subjects' party affiliations were recoded as either left-wing or right-wing: left-wing, 1=Green Party, 2=Social Democratic Party, 3=Green Liberal Party, and 4=Evangelical People's Party (n = 64); right-wing, 5=Christian Democratic People's Party, 6=Federal Democratic Union, 7= Conservative Democratic Party, 8=FDP, The Liberals, 9=Swiss People's Party (n = 58).

deviate by 42% from the current level of funding. When the executive proposes to continue the financial status quo, right-wing legislators' deviations from the current level of investment remain considerable but amount to only half of this value (20%).

**Figure 4: Hypothesis 3, The Moderating Effect of Party on Information's Impact**




*Note 1:* Effect of *Proposal* x *Party* on the *Absolute Value of Decision Outcomes*, averaging across *Scenario* (N = 122)

*Note 2:* An analysis of subjects' actual budget decisions reveals that party membership correlates with actual behavior to decrease or increase the current level of funding ($r(122) = .57, p < .001$). As expected, left-wing subjects decide on budget cuts whereas right-wing subjects propose increases in investments.

In sum, the experimental results suggest that performance information tends to increase both political support and opposition. Consistent budget proposals increase support from political camps that ideologically favor the implications of the available evidence. Right-wing legislators appear to feel even more vindicated in their own world view when the performance data and the budget proposal are consistent with their predispositions. Interestingly, even budget proposals that contradict the

implications of the available information are able to "win" arguments or at least to cushion ideologically motivated disagreement with the current level of funding from right-wing legislators. Legislators on the "wrong" side of the evidence are also influenced. These legislators intensify their oppositional stance and appear to "dig in even deeper" (Krugman, 2013; Nyhan & Reifler, 2013). However, the opposition remains constant in the light of identical challenging information, irrespective of the proposed budgetary conclusion.

# 6 Conclusions and Implications

With respect to legislatures, performance budgets are not meant to replace political dispute over the allocation of resources with some performance-based algorithm. Commentators acknowledge that "there will always be a political and judgment-based dimension to the allocation of public resources" (Hilton & Joyce, 2012, p. 482). However, existing conceptual and empirical research falls short of providing an answer for how the available performance information interacts with the political dimension to influence legislators' budgeting decisions. Studies have traditionally focused on questions such as whether more or better performance scores result in increased resource allocation. Based on some aggregate correlations between performance information and self-reported indicators of use, existing studies have given "rise to relatively simplistic debates about whether performance budgeting 'works' or not" (Moynihan, 2013, p. 2, emphasis in original). Recent works have started to focus on the human decision-making process and to account for the decisive role of context in human information use (Demaj & Summermatter, 2012; Moynihan, 2013; Nielsen & Baekgaard, 2013). Now, experimental designs are employed to examine *how* aspects of the political context shape the way performance information is processed and is able to orient elected officials' budgeting decisions. In this paper, I offer a framework that links performance information with legislators' budget deliberations and that systematically accounts for the impact of information on decision outcomes. This framework provides specific hypotheses and experimental insights concerning *how* legislators' budgeting decisions are shaped by the available evidence, *when* this influence is more powerful, and *whose* budgeting decisions will be affected by partisan information.

Three conditions were proposed and demonstrated to shape the impact of performance information on subjects' budgeting decisions. In the proposed framework, information concerning whether society will obtain more or less if funding is altered is always

considered by legislators as a part of a particular budget proposal. There is no doubt that the estimates provided must be and are continuously improved through advancements in policy analysis, measurement techniques, and information systems (Matheson & Kwon, 2003; OECD, 2007). However, the first conclusion I would draw from this experiment is that given politically defined outcome goals, good budget proposals excel by drawing conclusions that are consistent with the implications of the available performance information. This scenario is the environment in which the impact of performance information on budgeting decisions appears to be most pronounced.

Second, the proposed framework suggests that legislators always consider performance information and budget proposals with reference to a particular allocation issue and therefore in light of a political value tradeoff. Whether pending budgeting questions prompt harmonious or conflicting political intuitions is decisive for how difficult legislators perceive a given budget issue and ultimately, for the role that the available performance information can play in their budget deliberations. However, in contrast to the proposals made by Carol H. Weiss (1983) in her conceptualization of the basis of policy positions, the results of this experiment suggest that information's leverage on decision outcomes peaks for politically easy tradeoffs. Such situations occur when the available evidence faces highly predisposed subjects and not when political reference points fail to provide orientation. Therefore, the second conclusion I would draw from this experiment is that good performance budgets will not replace political judgments. In contrast, in a first-best world, performance information and consistent budget proposals can be expected to reinforce political judgments.

Finally, the framework proposed in this study claims that because performance information illustrates the marginal utilities of allocation changes, the implications of this information will fall naturally onto partisan turf. Therefore, performance information and consistent budget proposals are not welcomed by all political camps and legislators' reactions to these factors are likely to vary across the ideological left-right spectrum. The last conclusion I would draw from this experiment is that the addition of performance information to the government budgeting process is likely to be a double-edged sword. This addition might increase support from receptive political camps by providing evidence for preordained positions, but this information also enables political opposition to articulate more clearly their specific reasons for rejecting allocation changes. In the end, information that is intended to support more

rational choices is also likely to make potentially unreasonable resistance more "intelligent."

This last aspect highlights an important implication of this experiment for the practice of performance budgeting. Unfortunately, better performance budgets (i.e., budget proposals strengthened by evidence concerning performance aspects) can make compromise among legislators more difficult. Because individual budget deliberations become more informed, legislators are better able to evaluate the consequences for adhered values and for the particularistic interests that are at stake when public monies are reallocated. It appears that performance budgets can turn latent political inclinations into informed positions and may widen the polarization among legislators with different ideological outlooks. When individual positions become more honed and differences among ideological blocs become more visible, the common ground for compromise erodes and gridlock becomes more likely.[23] However, this finding does not suggest that performance budgeting, which is being implemented as a reform project for parliaments, must be aborted before paralyzing effects begin to spread. After all, a myriad of other factors are known to make legislative stalemate more likely (e.g., Binder, 1999; Brady, 1999). Thus, performance budgets simply represent another factor. However, after intense and costly efforts to improve performance measurement, performance management, and information infrastructures, government budget reformers could begin to consider expanding their attention to mechanisms that facilitate decision-finding among legislators.

Compared to case studies, interviews, and surveys, experiments hold an advantageous position for testing theoretical ideas about the circumstances that shape the impact of performance on legislators' budgeting decisions. If researchers prepare their designs with caution and avoid basic threats to internal validity (Druckman, 2005; Wortman, 1983), causality concerning the relationship of interest can be assumed with high certainty. The generalization of experimental findings to the outside world depends on three aspects: first, external validity depends on how successfully critical aspects of the relevant reality could be considered by the setup (Brunswik, 1955); second, external validity depends on whether the experiment's theoretical bedrock accounted for the complexity of human nature and avoided an oversimplified mechanistic view of subjects as stimulus-response machines (Schultz, 1969); and finally, external validity

23 For 'preference theories' of polarization (i.e., ideological polarization) and legislative stalemate, see Brady & Volden (1998) or Krehbiel (1998); for 'partisan theories' of polarization (i.e., partisan polarization), see Gilmour (1995) or Groseclose & McCarty (2001).

depends on whether the experimental design was able to capture the essence of the theoretical constructs (Kruglanski, 1975). I consider the first two dimensions to have been sufficiently met by the present study. As reported, this experiment's setup was based on the characteristics of the Swiss government budgeting context; the subjects of this study were real state legislators, who deliberated about authentic allocation questions and considered actual information. Furthermore, the tested framework placed the legislative context that governs the impact of information on lawmakers' allocation judgments at the center of interest. The experiment intended to account for the political rationale that drives legislators' consideration of performance information for decision-making purposes.

With respect to the operationalization of the theoretical constructs, caution is always advisable (Sartori, 1970). For example, to account for the presence of 'political intuitions,' both experimental allocation issues were based on long-standing ideological divides that exist in the Swiss political landscape. However, whether these issues were truly able to bring political intuitions in line or cause them to contradict will always remain in the mind of the beholder. In contrast, 'performance information' and 'budget proposals' represent more feasible concepts and were developed in consultation with the secretariats of the Executive and Legislative Councils. In addition, the 'party affiliation' was provided for the participating legislators; as long as party-switching remains a rare occurrence within political factions, we can safely assume that this construct was captured for the legislators. However, the subjects in the control groups were asked to report their ideological position and the subjects' familiarity with the political landscape might have biased their self-assessments. A final limitation for the generalizability of the experimental insights results from the operationalization of 'budgeting decisions.' In this study, the dependent variable was defined as an individual legislator's initial judgment about a pending allocation issue. However, in the course of the political process, these individual positions are modified in many different ways. The hierarchy within one's party faction, policy specialization, and log-rolling represent only three vital aspects for the development of actual positions. Nevertheless, this experiment's findings provide the first insights into how performance information influences the formation of initial allocation positions.

This study's results are preliminary, as is the framework that is proposed to capture the relevant legislative context of performance information for budgeting. Further research is needed to test the conditions that this work indicated were decisive for the impact of performance information. Future research could focus on testing the suggested

relationships in more naturalistic settings and on developing non-experimental approaches for studying how the factors proposed here influence allocation judgments. These studies would increase the framework's external validity. Additional work could also be devoted to the identification of other aspects that govern the impact of performance information on budgeting decisions. A large proportion of the variation in subjects' decision outcomes remains unexplained. However, the most valuable insights are likely to originate from research that addresses the origin of legislators' information needs. The major limitation of the existing studies, including the most recent experimental studies from Nielsen & Baekgaard (2013) and Moynihan (2013) and the current experiment, is the implicit assumption that legislators have a natural interest in information when making budgeting decisions. These studies offer insights into the impact of information on legislators' decisions in those cases where the information is being used, but we fall short of providing explanations for why legislators decide to consider or ignore evidence in the first place. I am uncomfortable with the fact that existing accounts of legislators' information behavior are based on incrementalist, rational choice, or institutionalist perspectives of the government budgeting process. In retrospect, these views are always able to provide reasons for legislators' non-use, use, or misuse of information. However, because it is difficult, or rather impossible, to trace the societal effects of political allocation judgments back to elected officials' non-use, use, or misuse of particular information, I doubt that these explanations provide motives strong enough for guiding individual legislators *on the spot* about what to do with policy-relevant facts. Because the decision to use information is based on a psychological process, I share Moynihan's (2013, p. 27) opinion that we must develop behavioral theories for understanding the drivers of legislators' information-related behavior. The role of political intuitions might present a promising start for this endeavor.

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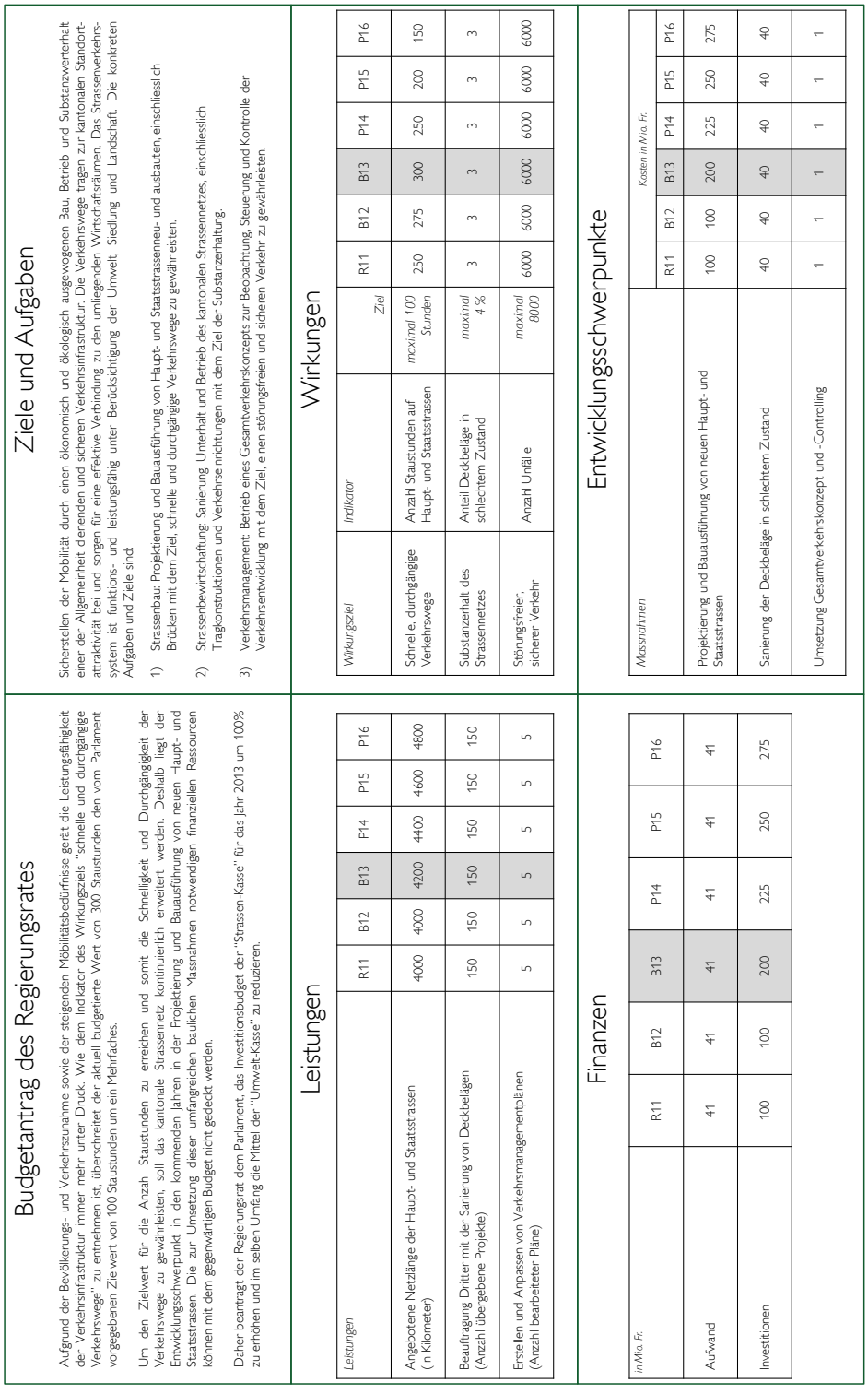
# 8 Appendix

## 8.1 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 Staatsstrassen. 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 |

## 8.2 Appendix B: Experimental Groups

### Table 8: Legislators' Assignment to Experimental Groups

| | Treatment | | | |
|---|---|---|---|---|
| | harmonious intuitions | | conflicting intuitions | |
| Party[a] | consistent | inconsistent | consistent | inconsistent |
| 1. Green Party | 3 | 2 | 1 | 1 |
| 2. Social Democratic Party | 4 | 3 | 3 | 3 |
| 3. Green Liberal Party | – | 1 | 3 | 2 |
| 4. Evangelical People's Party | 1 | 1 | 1 | – |
| 5. Christian Democratic Party | 1 | – | – | 2 |
| 6. Federal Democratic Union | 1 | – | – | – |
| 7. Conservative Democratic Party | – | 1 | – | – |
| 8. FDP.The Liberals | 1 | 3 | 2 | 1 |
| 9. Swiss Peoples Party | 4 | 4 | 4 | 4 |
| *Total N* | *15* | *15* | *14* | *13* |
| *Ideological Polarity*[b] | *3.4* | *3.4* | *3.3* | *3.2* |

[a] Each party on the left-right spectrum was given a value ranging from 1 (fleft) to 9 (right). Numbers are given for a party's positioning toward a range of issues, in a historical perspective and relative to each other. Data stems from *smartvote*, a web-based project of *The Swiss Graduate School of Public Administration*, the *National Center of Competence in Research Challenges to Democracy in the 21st Century*, and the *Center of Competence for Public Management, University of Bern*, all located in Switzerland.

[b] Std. deviation of ideological positions by experimental group, $\sqrt{\frac{\sum(x-\bar{x})^2}{(n-1)}}$, where x is the group mean and n is the group size.

## 8.3 Appendix C: Decision Difficulty

**Scale of 5 items**.[24] 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 9: Two Independent-Samples T Test on Perceived Decision Difficulty**

Scale means (std. deviation) for perceived Decision Difficulty (N = 57).

| | | | *Scale Means* | |
|---|---|---|---|---|
| | *t*-Statistic | *p* | harmonious intuitions | conflicting intuitions |
| Overall Decision Difficulty[a, b] | -3.65 | .001 | 1.95 (1.30) | 3.32 (1.47) |
| *Easiness*[a] | *-3.17* | *.002* | *1.97 (1.22)* | *3.11 (1.50)* |
| *Need for Additional Time*[a] | *-2.38* | *.021* | *1.97 (1.54)* | *3.04 (1.85)* |
| *Readiness to Decide*[a] | *-1.88* | *.065* | *1.87 (1.53)* | *2.67 (1.69)* |
| *Ambivalence*[c, d] | *3.97* | *.000* | *6.30 (1.26)* | *4.48 (2.05)* |
| *Certainty of Decision*[c] | *4.04* | *.000* | *5.77 (1.72)* | *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 ($F = 13.24, p = .001$). Degrees of freedom were therefore adjusted from 55 to 42.

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

# ARTICLE 3: WHAT DRIVES LEGISLATORS' INFORMATION BEHAVIOR? AN EYE-TRACKING EXPERIMENT WITH LEGISLATORS


## Abstract[25]

*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.*


## 1 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 irrespective

25 Co-authored with Kuno Schedler.

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.[26] 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

26 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.

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 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.

# 2 Theory and Research on Legislators' Information Behavior

## 2.1 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.[27] 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

27 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).

definitions[28] 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 opportunities 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

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

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.

## 2.2 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.

## 2.3 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.

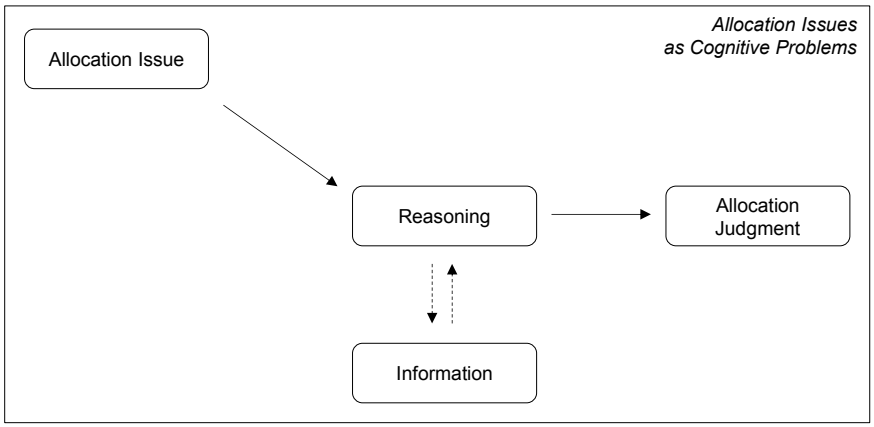
With respect to theory and to why legislators engage in information behavior for budgeting at all, current research is still dominated by traditional perspectives. Incrementalists, for example, fail to account for any substantial use of information by legislators. The rational choice perspective fails 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 5). We therefore refer to these notions of legislators' information behavior as rationalist models.

**Figure 5: 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.[29] We therefore do not think that for legislators policy issues and allocation issues represent cognitive problems.

# 3 Allocation Issues as Moral Problems

## 3.1 An Alternative Conception of Legislators' Information Behavior

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

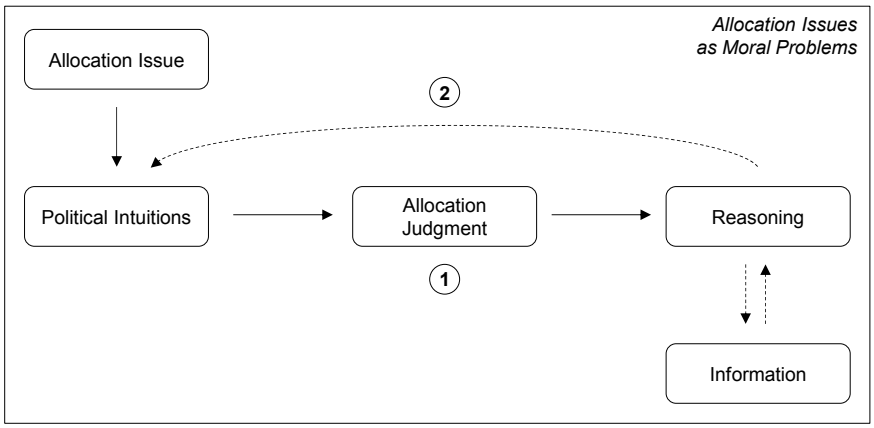
29 It is important to note that we are not blaming the complexity of the task structure or human cognitive constraints for failing to produce the presumed behavioral consequences as, for example, proponents of the bounded rationality research tradition would do (e.g., Simon, 1985).

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).

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 6 illustrates this notion and helps to organize the specific implications on legislators' information need, search, and use behavior.

**Figure 6: Intuitionist Model of Legislators Information Behavior**




*Note*: Adapted from Haidt (2001).

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.

## 3.2 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.*

## 3.3 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.*

## 3.4 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.*

# 4 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 article 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.[30] 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-

30 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.

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

# 5 Results

## 5.1 Descriptive Statistics on Eye-Tracking Metrics

Table 10 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 10 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.[31] 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 article.

**Table 10: Descriptive Statistics on Legislators' Eye-Tracking Metrics**

| | 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 '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 article).

31 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.

## 5.2 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 11 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 11: Univariate ANOVA on 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.

## 5.3 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 12 and Table 13 provide the results of a univariate ANOVA for single *Fixation Duration* and single *Saccade Duration*, respectively. Table 12 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.

## Table 12: 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.

This finding is supported, secondly, by results on subjects' single *Saccade Duration*. Table 13 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.

## Table 13: 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 |

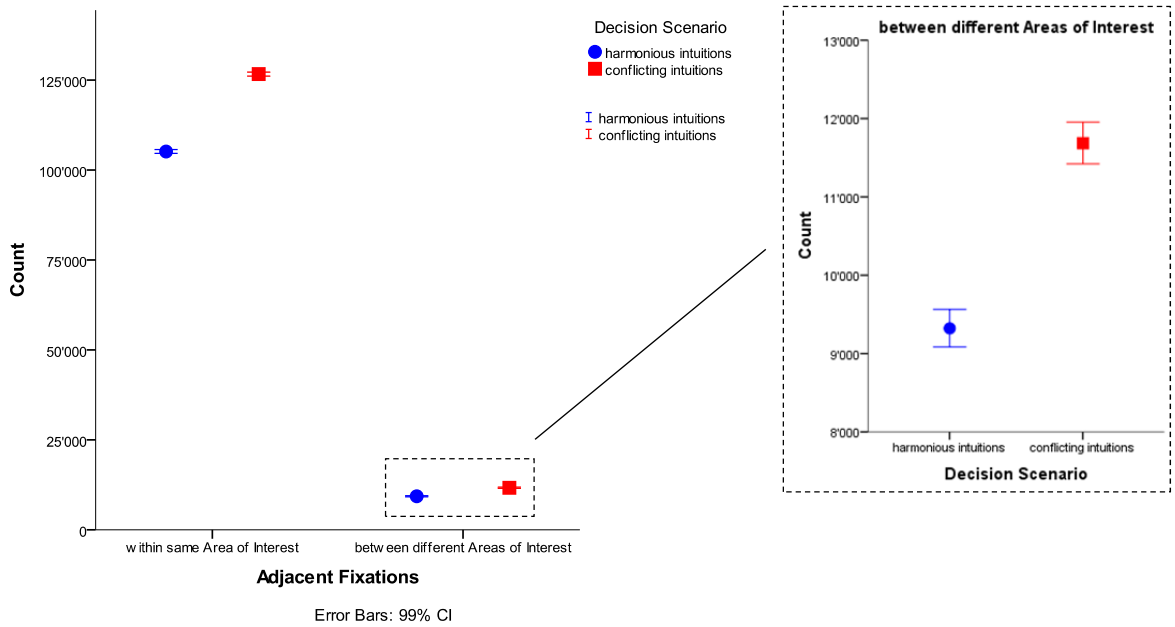
**Tests of Between-Subjects Effects**

| 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.

Finally, Figure 7 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 $\chi^2$-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 7 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 7: Legislators' Adjacent Fixations**




*Note:* Graphical summary of $\chi^2$-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.

## 5.4 Does Information Use Differ by Intuition Agreement?

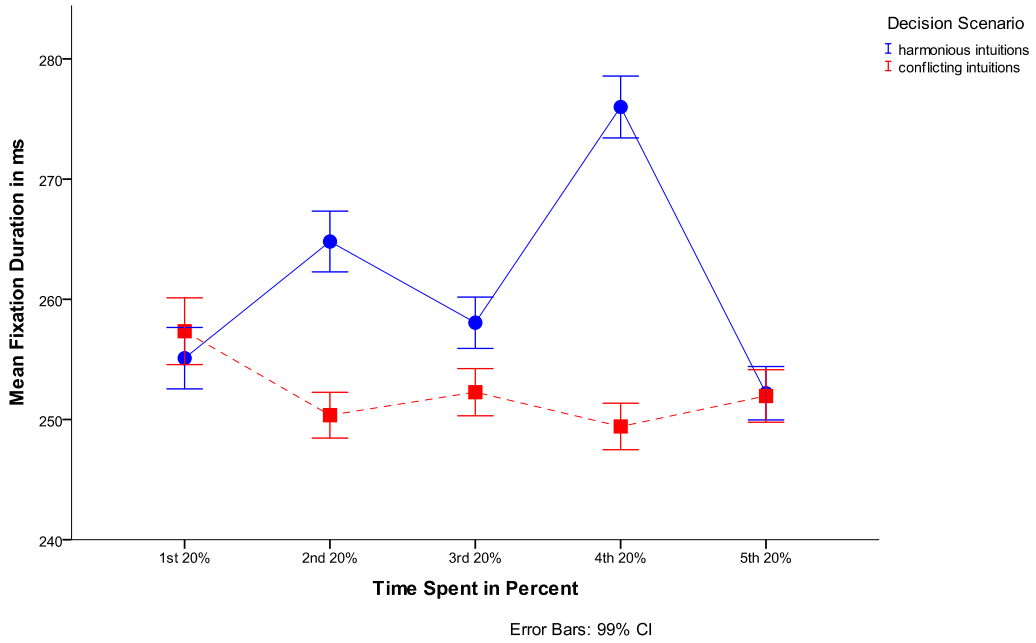
Our model does not entail a social interaction component that would allow us to hypothesize about how policy information is used in political discourse. What we consider by information use in this analysis is therefore limited to the individual decision-making process. Hypothesis 3 suggested that from 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 8, Figure 9, and Figure 10 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 8 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.

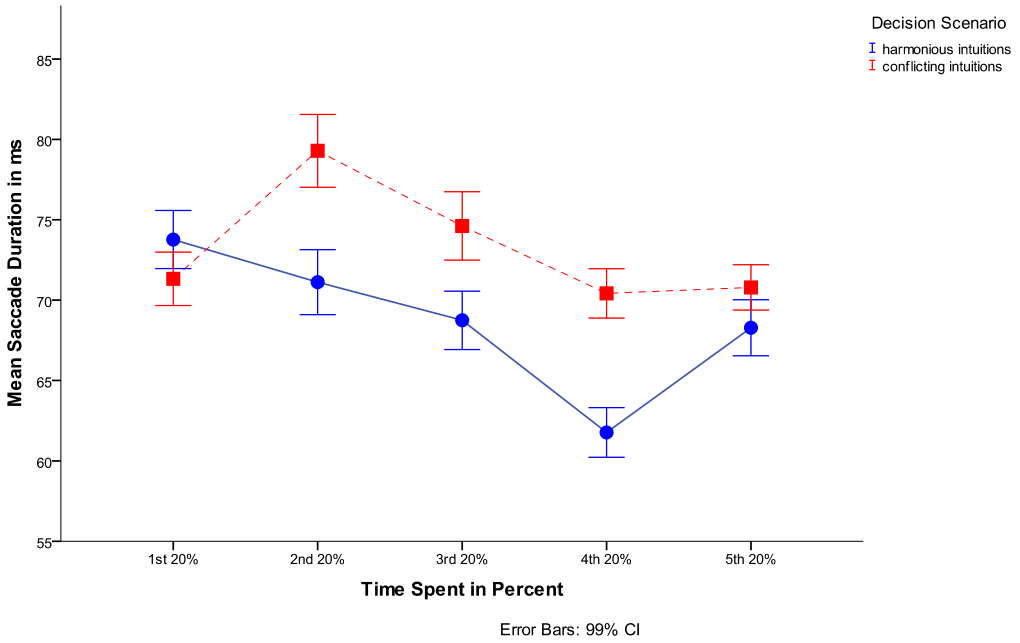
**Figure 8: Evolution of Single Fixation Duration**




*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.

Next, Figure 9 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.

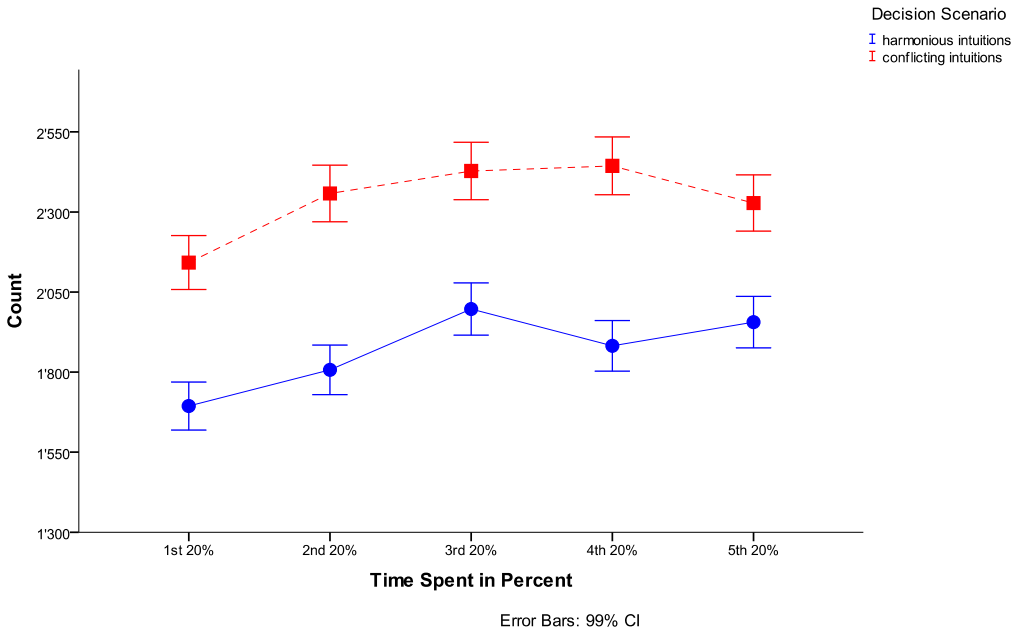
**Figure 9: Evolution of Single Saccade Duration**




*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 10 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 10: 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.

# 6 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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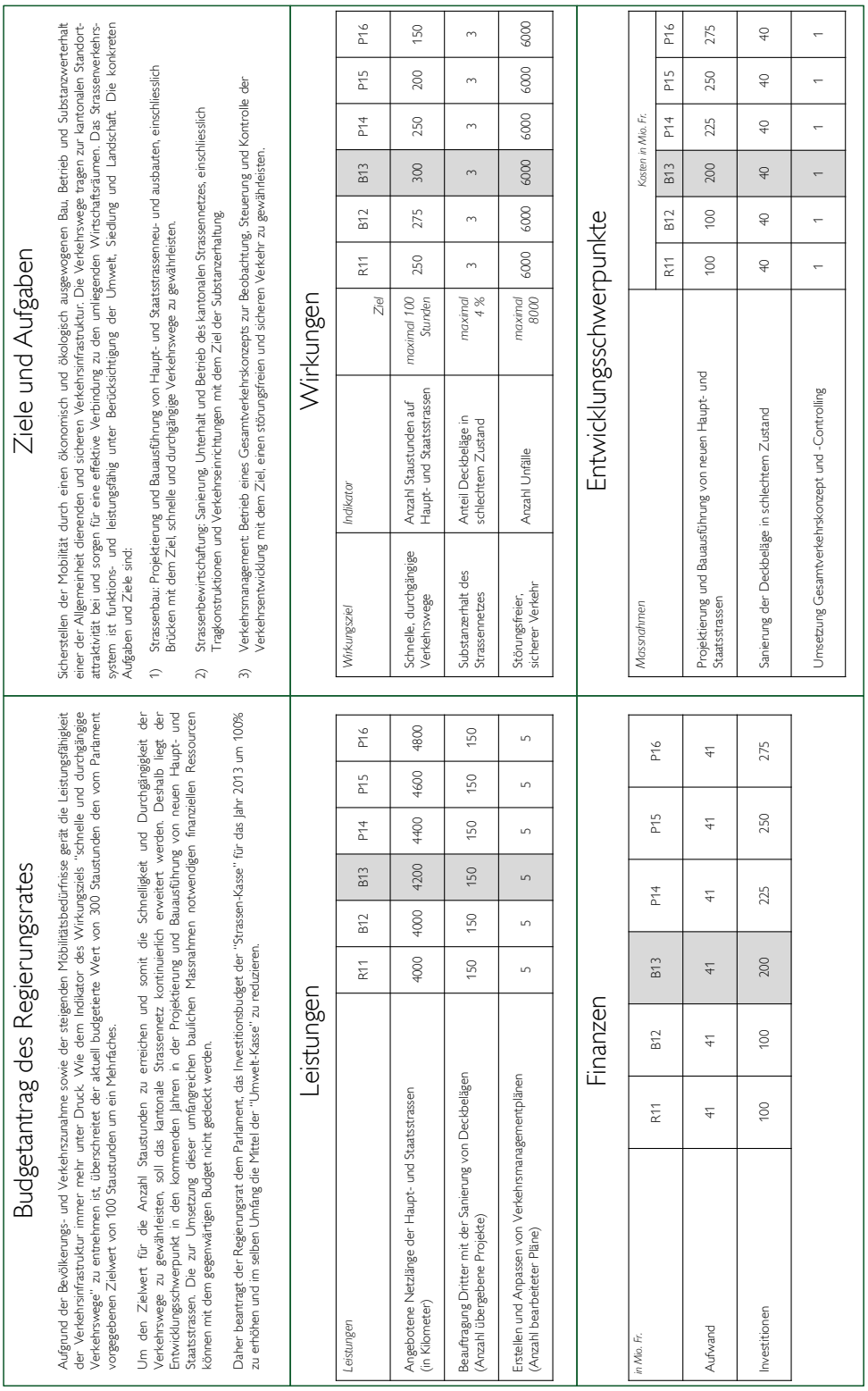
# 8 Appendix

## 8.1 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 Staatsstrassen. 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

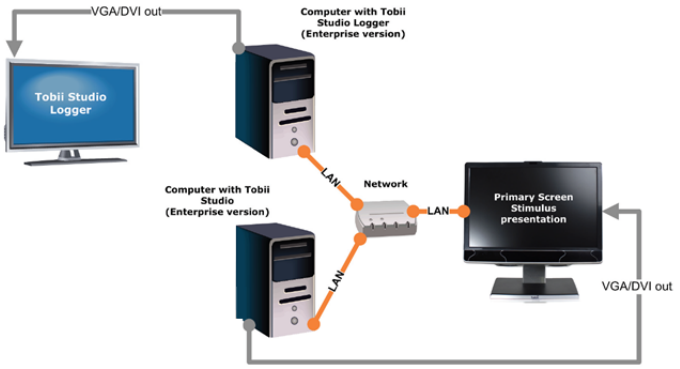
| *in Mio. Fr.* | R11 | B12 | B13 | P14 | P15 | P16 |
|---|---|---|---|---|---|---|
| Aufwand | 41 | 41 | 41 | 41 | 41 | 41 |
| Investitionen | 100 | 100 | 200 | 225 | 250 | 275 |

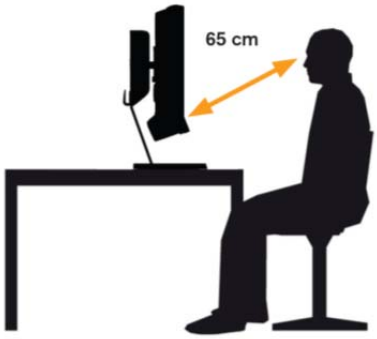
### Entwicklungsschwerpunkte

| *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 |

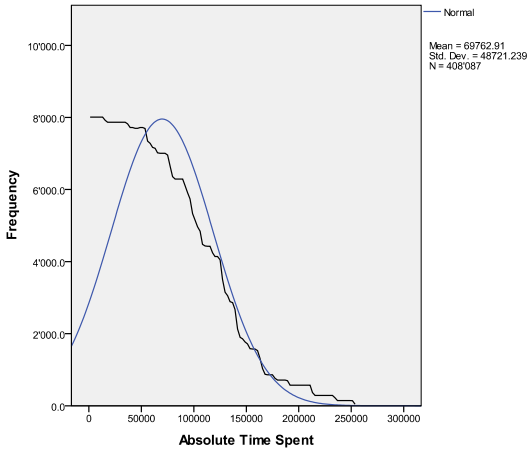
*Note*: The configuration of information tiles was randomized for each subject.

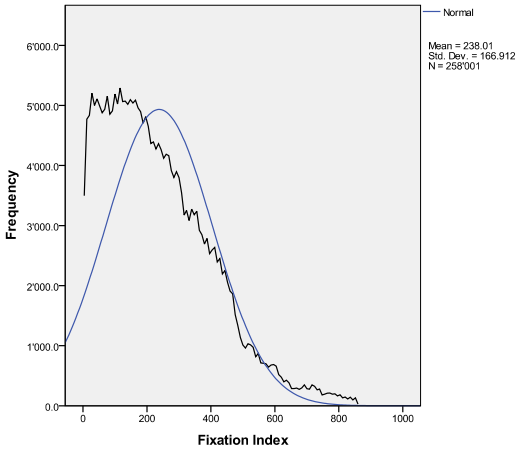
## 8.2 Appendix B: Experimental Setup

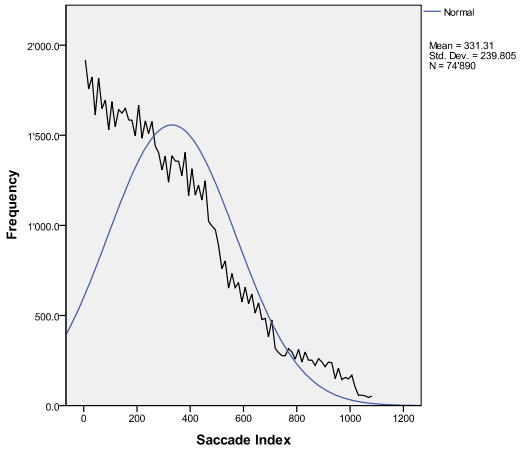


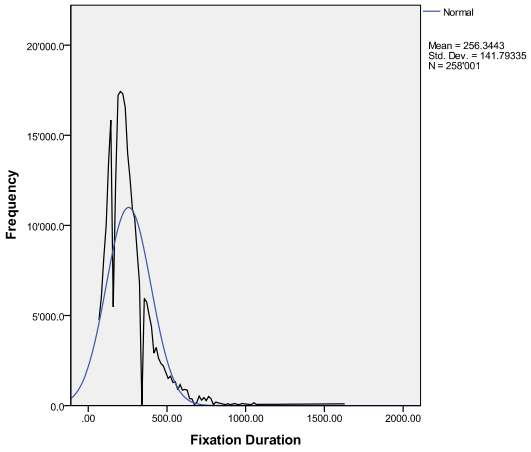



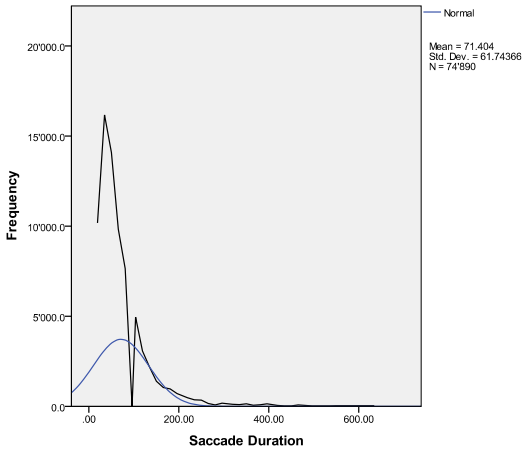
# 8.3 Appendix C: Density Curves for Interval Eye Tracking Variables



## 8.4 Appendix D: Decision Difficulty Measures

**Scale of 5 items**.[32] 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.

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

**Table 14: Two Independent-Samples T Test on Perceived Decision Difficulty**

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

| | | | *Scale Means* | |
|---|---|---|---|---|
| | *t*-Statistic | *p* | 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.

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

# CONCLUSIONS

## 1 Contributions of this Thesis

This thesis makes methodological, empirical, and theoretical contributions to the study of legislators' need and use of information and to the field of public management. I will summarize the respective states of research for each aspect and refer to the new input this work contributes.

### 1.1 Methodological Contributions

In employing a specific method, researchers attempt to disregard metaphysical speculation about a relationship of interest "to pin down causation" (Hood, 2011, p. 325). The tools of social science research to achieve this goal have remained the same for more than five decades and consist of documentary analysis, interviews, observation, and experimentation (Madge, 1953). In their extensive review of the state of public management research, Pitts & Fernandez (2009) conclude that overall, Public Management appears to be an empirically oriented field of study. Only twenty-five percent of the works analyzed were conceptual frameworks or "think pieces." Public Management researchers gather their empirical material primarily through the first three approaches of the social science toolkit. What dominate are descriptive and historical approaches to reform initiatives, detailed case studies to illuminate "what works" based on best practices, and interviews or surveys to gain insights from the perspective of the relevant individual actors. The data thus generated are almost equally analyzed through either qualitative approaches such as content analysis or quantitative approaches based on descriptive or inferential statistics (Pitts & Fernandez, 2009, pp. 411-413).

The experimental method, "the most nearly ideal method for scientific explanation […]" (Lijphart, 1971, p. 683), is not featured at all in the review conducted by Pitts & Fernandez (2009). This reflects a longstanding reluctance of social scientists, in general, to embrace experimentation as a reliable method for the establishment of causation (Hood, 2011, p. 325) and has been considered to be the major impediment of social science research since John Stuart Mill's writings in *A System of Logic* (Book 2, Chapter 9). The pioneering social science fields to adopt experimentation have been Psychology, the behavioral trunk of Economics, and Political Science. Their

motivation derives from the ability of the experimental method to provide the grounds for internally valid conclusions about a presumed causal relationship (Campbell & Stanley, 1963). This potential results from the capacity of experiments to control for all known *and* unknown influences that might affect the relationship of interest through the deliberate manipulation of the treatment, the random allocation of subjects to the treatment, and the subsequent measurement of the outcome of interest:

> The experimental method, in its simplest form, uses two equivalent groups, one of which (the experimental group) is exposed to a stimulus while the other (the control group) is not. The two groups are then compared, and any difference can be attributed to the stimulus. Thus one knows the relationship between two variables-with the important assurance that no other variables were involved, because in all respects but one the two groups were alike. Equivalence – that is, the condition that the *cetera* are indeed *paria* – can be achieved by a process of deliberate randomization. (Lijphart, 1971, emphasis in original)

Two years after Pitts and Fernandez' (2009) study, Margetts (2011) evaluated the potential of the experimental method for public management research. She identifies only ten published works that report an experimental study, five of which resulted from a series on experimental design in public management research published by the *Journal of Public Administration Research and Theory* during the 1990s. As far as other journals are concerned, Margetts (2011) found only one published experimental study in *Public Management Review* and none in *Governance* for the time period reviewed. She suggests three barriers that might account for the rare existence of experiments in public management research (Margetts, 2011, p. 195):

1. Public management researchers tend to ignore the individual level of analysis and focus more on organizational issues, which provide a less adequate venue for experimentation.

2. To remain credible to practitioners and policymakers, public management researchers tend to focus on providing insights relevant to local conditions rather than producing generalizations that can travel through space and time. Internal validity and rigor are traded away for "realism" and the perceived need to provide prescriptions for action.

3. Finally, public management researchers face logistical constraints that prevent them from conducting experiments. Such constraints range from difficulties in recruiting personnel from public administration or elected officials as experimental subjects to more practical issues such as limited training in experimentation methodologies.

For the purposes of this chapter, I conducted follow-up research on Margetts' (2011) survey. The analysis revealed seven new public management publications that report insights from experimental studies (Avellaneda, 2013; Jakobsen & Andersen, 2013; James & Moseley, 2014; Van Ryzin, 2013; Van Ryzin & Lavena, 2013; Moynihan, 2013; Nielsen & Baekgaard, 2013). The experiments conducted for this thesis remain among the first in public management research. Overall, this thesis differs from current research in leaving the organizational level and setting the focus at the individual level of behavior; in gathering empirical material from real legislators rather than from university students; in generating data by using eye tracking as a new measurement technique; and in producing results that can claim to be rigorous, given the validity of the causal relationship presumed.

With respect to public management research, in general, the employment of experimentation by this thesis helped to avoid two of the most common and critical threats to the internal validity of public management studies (Konisky & Reenock, 2013): case selection on the treatment variable and case selection on the dependent variable. The first threat refers to the uncomfortable fact that the treatment in public management research is either provided or represents a function of the researcher's case selection. Under this condition, it is not safe to assume from the outset that an observed correlation between the variables of interest results only from what one presumes to be the treatment. For example, it is common in survey research for a significant proportion of the subject sample to not respond. This so-called non-response error is likely to bias the statistics obtained and reduce the quality of the inferences drawn. Participating subjects may share characteristics that produce responses systematically different from those that did not take part in the survey (Groves, 2009). A second threat to internal validity results from the case selection on the dependent variable. This threat results from those instances where the researcher artificially limits the variance in the outcome of interest and thereby induces self-dependence between the independent and dependent variables. The worst case of this type of selection threat occurs when only those cases are explored that have the same effect on the outcome of interest (Konisky & Reenock, 2013, p. 373). The data thus obtained will either lead to the erroneous conclusion that a shared characteristic among these cases is the cause of the outcome or produce the wrong inference that the relationship observed in the sample also holds for the entire population (Geddes, 2003, pp. 89-95).

The methodological contribution of this thesis to the more specific research on legislators' information behavior for allocation issues is two-fold. First, this thesis has introduced an experimental approach to the study of information behavior and has created the possibility of pursuing different types of questions that are precluded by observational approaches. The types of questions that can be explored with observational studies are limited to broad inquiries on the correlation among self-reported information use, aggregated data on budget change, and factors related to information quality or volume, individual competence, organizational culture, and reform context (Moynihan & Pandey, 2010). Existing studies ignore the effects of context and needs, which are fundamental to people's information behavior, and draw conclusions about legislators' search and use of information for allocation issues that are detached from the particularity of the political environment and the information needs it generates. According to Moynihan (2013, pp. 5-6) and "in terms of understanding the behavioral question at the heart of performance budgeting" – how information influences a decision –observational methods rely on simple assumptions about how variation in these dimensions matter. By using experimentation, my thesis has implemented an actor-centered research strategy that allows for analyzing how a legislator's behavior and the influence of information vary if features of the relevant context change and shift people's interest in information.

The second methodological contribution of this thesis consists of highlighting the value of alternatives to self-reporting approaches for examining people's information behavior. The reason for using eye tracking rests on the possibility this method offers to monitor legislators' interest in the given information while it is actually happening during the deliberation of a policy issue, and not as they "recall" it in a survey or interview situation (Nisbett & Wilson, 1977). Eye tracking offers the opportunity to explore people's patterns of attention that govern deliberation and precede their decisions – an empirical inquiry at the micro level called for more than two decades ago (Simon, 1985, p. 302; 1986, p. S211). The "focus of attention is a variable of particular importance for political phenomena," because it can indicate "what values and knowledge are evoked while […] decisions are being reached" (Simon, 1995, p. 60). That these deliberations mediate the behavioral response and are worth capturing is the core assumption in cognitive-behavioral theory, research, and practice (Davison, Vogel, & Coffman, 1997, p. 950). Based on the possibilities eye tracking provides for observing people's attention to any given object, I judge its value for future public management research as comparatively high. This thesis, however, has probably

exploited only a small fraction of what eye-tracking methodology can offer. Nevertheless, it has produced data that provide first-hand insights into how legislators' patterns of interest in available information change while solving policy issues. In sum, actor-centeredness, experimentation, and eye tracking mark a radical shift from existing approaches to legislators' information behavior that focus on self-reported data. As explicated in Article 2 and Article 3, these methods are more likely to reveal lawmakers' views about how competent and legitimate decisions ought to be made than the actual role of information during political deliberation. The methodology developed in my thesis makes it possible to examine the political rationale in legislators' information behavior.

## 1.2 Empirical Contributions

In their review of the state of public management research, Pitts & Fernandez (2009) also evaluate the content of the empirical work of this field, that is, the areas of knowledge production. Their analysis begins with the observation that public management research, driven by reforms under the umbrella of New Public Management and Reinventing Government, is mainly concerned with aspects of performance (Pitts & Fernandez, 2009, pp. 403-404). Just as government bodies have mostly been experimenting with strategic planning, performance metrics, and performance-based compensation, public management research is overwhelmingly engaged with the analysis of the presumed and actual effects of these reforms. Of particular interest to public management practitioners, elected officials, and public management researchers have been initiatives that score government performance to inform decisions on the organization of government, the design and implementation of public policies, and the overall public funding of government activities. The focus of research has been on the implementation aspects of these reforms. Students debate about issues such as the difficulty of measuring performance in the public sector, where organizational goals are not as easy to articulate as in the private sector; the consequences of public agencies' behavior focusing on rather minor, measurable goals that are often irrelevant to the main mission; and, more recently, the value of all the information produced for decision-making purposes. The diffusion of quantitative measures of performance has been considered "one of the most widespread trends in government in the past decades," and it has been "motivated partly by the hope that policymakers will use this data" to make their judgments (Moynihan, 2013, p. 1).

This last aspect has been the theme of this thesis, and all three articles have pointed to the limited empirical basis we have on the use of information for decision-making purposes. Most of the studies that exist focus on *public managers' information behavior* (Pollitt, 2006). Overwhelmingly, they are descriptive or correlational, and analyze how the extent of performance information use relates to the nature of the data, for example, whether it is written text or numbers (Moynihan & Pandey, 2010; Moynihan & Lavertu, 2012). Only recently have empirical works on public managers' information behavior begun to infer conclusions about the drivers of information use. For instance, Kroll (2013) applies a model of "Planned Behavior" that predicts the extent of performance information use by public managers through their attitude toward data (i.e., reported individual enthusiasm about data use) and the existing social norm within an agency (i.e., colleagues' and supervisors' expressed valuation of performance-informed decisions). The literature on managers' performances using information for budgeting is even more limited. Based on existing studies (Moynihan, 2013, pp. 4-5), the public managers' perceived use of information or its influence on budget decisions is reported to be higher if the information is present throughout the budgeting process and if it is part of an agency's decision culture (Melkers & Willoughby, 2005); if management skills to extract what is relevant from the available metrics are high (Lu, 2007); and if the agency's general capacity to measure performance is high (Wang, 2000).

Studies that focus on *politicians' information behavior* are rare, and even more so concerning information behavior for allocation decisions. Therefore, the main empirical contribution of this thesis consists of adding substance to the understanding of this phenomenon. As noted in Article 2, most of the literature on budget reform and the consequences for politicians' information use are not at all empirical. Thought experiments have cemented the conclusion that elected officials do not value available information, do not use it, and hence, suggest that there is no influence to be expected from the provision of information to politicians' allocation decisions. The few empirical results we have from politicians' self-reports are obtained through research designs that allow only for "either-or" conclusions on information use and its relevance for decision-making purposes. There is no elaboration on the degree and nature of information use in different decision contexts. The insights gained from these studies are ambiguous, but the balance is more on the negative side; that is, information is claimed to find little use in politics and therefore is suggested to have a

negligible influence on decision outcomes, in general, not just on allocation judgments.

Besides the two works from Nielsen & Baekgaard (2013) and Moynihan (2013) discussed in Article 2 and Article 3, my thesis is among the first publications to provide more than an "either-or" account of information use. In sum, and thanks to the experimental approach, this thesis provides material for discussing the behavioral question of performance budgeting, that is, whether and how information can influence legislators' decisions. In addition, this treatment provides the first empirical insights on the basic motivation of legislators to consider, search for, and use evidence for decision-making purposes. In the following, I will therefore first highlight both contributions and contrast them with what we already know about legislators' information behavior. Next, I will indicate the potential for further analysis that remains within the data gathered from the research project of my thesis. Finally, I will draw the conclusions that arise from this material on the empirical effect of the More Information Hypothesis, namely, whether the presumed consensual effect of information on legislators' allocation judgments is warranted.

First, this thesis *explicates the specific link between information and legislators' allocation judgments*. In doing so, it differs from Nielsen's & Baekgaard's (2013) work as well as from Moynihan's (2013) in the following ways. Based on a survey experiment, Nielsen & Baekgaard (2013) evaluate how public school funding decisions made by Danish city councilors change in the light of negative or positive performance information. Moynihan (2013) considers how the impact of identical performance information on subjects' funding decisions varies depending on whether this information is accompanied by positive or negative comments, clear or ambiguous goal descriptions, and missed or achieved performance targets. While Nielsen & Baekgaard (2013) test the anticipated effects of performance information ,and Moynihan (2013) specifies and examines the circumstance of performance information provision, this thesis considers and operationalizes how the legislative context, as such, interacts with available evidence and thereby shapes its influence on legislators' decision outcomes. The framework presented in Article 2 claims that the general leverage that information can have on legislators' allocation judgments is dependent upon the fit of the accompanying proposal, the political difficulty of the allocation issue, and whether a legislator is ideologically receptive to what the given information indicates. The exceptionally high proportion of experimental decision variance that could be explained with this simple model ($R^2$ = .74, $F(27, 95) = 10.02$, $p < .001$)

suggests that some of the general factors of the political context responsible for surrounding and defining the information-decision nexus could be identified. In particular, the experimental results imply that information's impact on legislators' judgments about making allocation changes is higher if the corresponding proposal is consistent with what the available information indicates. Consistency, in turn, is shown to matter only if the political predispositions triggered by the allocation question are in line and if legislators are ideologically receptive to what the information indicates. In sum, these results provide additional empirical backing for claims that performance information can make a difference in politicians' decisions; they provide the first empirical support for the notion that a better fit between budget proposals and the corresponding information enhances its potential influence; and lastly, they disconfirm anecdotal evidence for politicians' ignorance of uncongenial information.

The second contribution consists of the provision of empirical data on the *political rationale or interest in considering information for allocation judgments*. Existing studies take it for granted that legislators have a "natural" interest in information. Even the most recent experimental works from Nielsen & Baekgaard (2013), Moynihan (2013), and the decision experiment of my thesis (Article 2) simply presume that information is used just because it is there. The experimental results reported in Article 3 offer the first insights into how political interest in policy information can be evoked. The information behavior model developed, which will be discussed with the theoretical contributions, begins from the fact that the use of information requires cognitive work. The model claims that from a legislator's perspective, the necessity of engaging in this work and considering information for decision-making purposes arises only if the default system for judging policy issues fails to provide a conclusion, that is, if deeply ingrained political intuitions are incapable of providing an orientation. Otherwise, the model suggests, positions are preordained, and reasoning and information gathering are only applied to rationalize post hoc what has already been concluded intuitively. Eye-tracking data on legislators' deployed attention confirms that *interest* in the given information is indeed more intense if political intuitions are in conflict. Furthermore, the experimental results highlight that the information *search* and *use* behaviors differ widely depending on how much the political intuitions agree. If harmonious, the political intuitions were shown to bias legislators' search for information and its use during the deliberation process. In sum, these results provide the first empirical insights into why most information is ignored by politicians; they

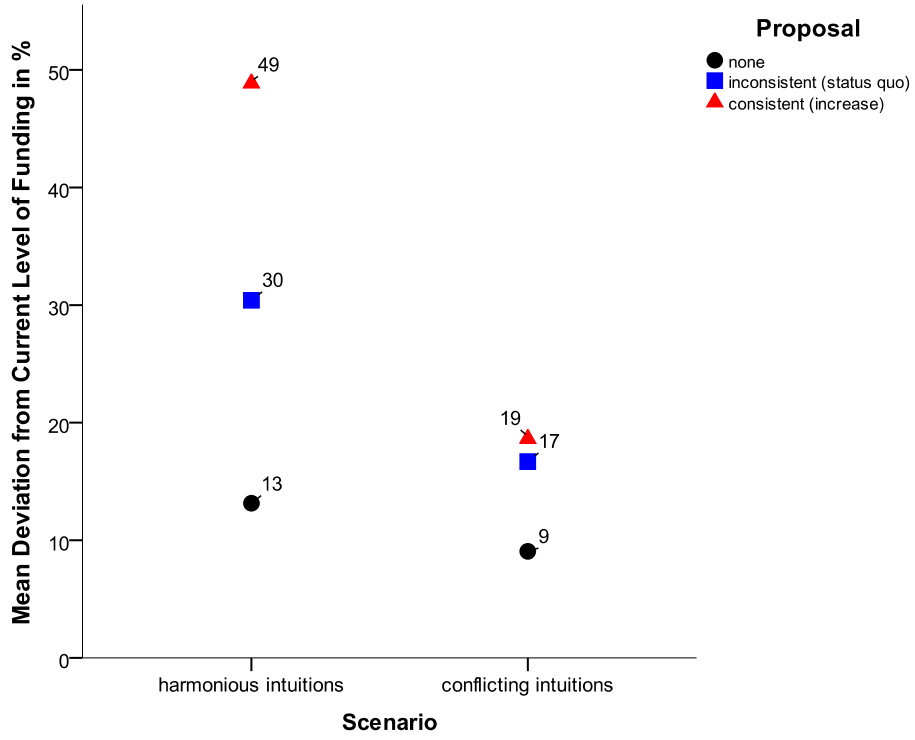
indicate possibilities for increasing interest in available evidence; and lastly, they suggest ways to debias the search and use of information.

There are more potential insights that could be derived from the data generated from this experiment. For example, although the experimental results reported in Article 3 are in line with what the proposed behavioral model predicts, they do not provide sufficient proof of the model's veracity. Article 3 and the eye-tracking data report only on the intensity and biasedness of the legislators' deliberation process, not the final decision outcomes. However, the information behavior model makes claims on both dimensions. Ideally, another article would be devoted to an analysis of the relationship between the eye-tracking indicators on the legislators' interest, search behavior, and use of information, on the one hand, and their final allocation judgments, on the other. For the purpose of this discussion, and to highlight the value of such an analysis, I will contrast the legislators' observed interest in available information reported in Article 3 with their decision outcomes documented in Article 2. The aim is to obtain an understanding of how legislators' deliberations and allocation conclusions relate to each other. Which one comes first, and what does this imply for legislators' search and use of information for budgeting?

A comparison of the results on legislators' decision outcomes and their deployed interest in the available information suggests empirical support for the proposition that deliberation precedes judgment only if intuitions are in conflict (see Figure 11). In Article 2, I speculated that the decision outcomes depicted in Figure 11 were the result of legislators' more or less intense attention to the identical stock of information provided. It was argued that in a decision scenario with political intuitions in conflict, legislators would focus more on the informational basis and try more intensively to draw their own conclusions. Given that the information provided does not change, varying budget proposals from the executive branch that accompany the information should not cause any difference in the legislators' decision outcomes. In contrast, it was concluded that within a non-dilemma scenario, strong and overlapping political predispositions would shift legislators' attention away from available information and redirect it toward the suggestion of the budget initiator. Eye tracking results on legislators' interest in the provided information supports this interpretation. As the results depicted in Figure 11 show, a budget proposal's leverage on decision outcomes is inversely related to the intensity of interest legislators devote to the information on which the proposal is based. If interest is high and the informational stock remains the same, changing budgetary proposals do not cause a difference. By contrast, a low

interest in the available evidence due to preordained conclusions allows varying the budget proposal to cause a difference in decision outcomes, even though the informational basis remains identical.

**Figure 11: Combining Insights from Experiments on Decision-Making and Eye-Tracking**




**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.

In the introduction of this thesis, I illustrated the history and content of major budgeting reform initiatives and claimed that their common denominator consists of altering structures and processes as well as increasing the provision of information to elected officials to foster "more intelligent" allocation decisions. It was argued that negative reform experiences have silenced calls for a mechanistic way of budgeting based on performance. Naïve assumptions that public resources can be allocated based on analysts' optimality calculations no longer exist. However, budget reformers' jargon showed that claims of more informed allocation judgments prevail. Whether explicitly stated or implicitly assumed, public budgeting reforms are fueled by the belief that better or worse allocation decisions exist and that more information can help to make better choices. The More Information Hypothesis and its presumed effect on public policy questions was therefore claimed to also hold for the case of government budgeting.

My thesis reports data on legislators' behavioral fundamentals with respect to the incorporation of specific information into the deliberation process. It provides the first empirical insights into the presumed consensual effect of the More Information Hypothesis for legislators' allocation judgments. The conclusion I would draw in this respect is negative. To begin with, as the eye-tracking experiment shows, interest in information appears to be low if people's political intuitions provide clear advice on how to position themselves with respect to a given allocation question. Paradoxically, this is the condition under which available information appears to have the biggest impact on the final decision outcome. In particular, it is the ideologically receptive legislators that make the more extreme decisions, because the available information and associated consistent proposals better confirm what their political predispositions already tell them is correct. To a lesser extent, information also affects legislators' allocation decisions if political predispositions are in contradiction. Thus, there is empirical support for the assumption that evidence can "make people on the wrong side dig in even deeper" (Krugman, 2013). In the end, the provision of information appears to drive opposing political camps further apart by empowering both those that ideologically agree with the available evidence and those which oppose information's indications.

## 1.3 Theoretical Contributions

As Article 3 highlighted, current theory on politicians' information use for allocation decisions is eclectic. Explanations usually focus on the particular fractions of

politicians' information behavior and never consider the entire phenomenon with all of its facets. From these perspectives, information use, nonuse, or misuse usually dominate legislators' behavior. Deviations from one of these default modes of behavior are instead considered anomalies rather than as part of a more complex behavioral spectrum. Article 3 claimed that existing explanations for legislators' information behavior are not genuine accounts of human information behavior, but result from different perspectives on how change in public budgets occurs. Current explanations were said to owe their intellectual origins to an incrementalist, rational choice, or institutionalist view of the budgeting process. Although nuanced in the particular account for why legislators use or fail to use information for making allocation judgments, it was claimed that all three perspectives would apply a rationalist conception of human information and decision-making behavior. In this sense, a legislator's use, nonuse, or misuse of information is always considered "intelligent," because it aids the actor in achieving some presumed goal. The basic idea of the rationalist notion of information and decision-making behavior is portrayed in a letter from Benjamin Franklin to a friend of his who asked for advice:

> I cannot, for want of sufficient premises, advise you *what* to determine, but if you please I will tell you *how* […] My way is to divide half a sheet of paper by a line into two columns; writing over the one *Pro*, and over the other *Con*. Then, doing three or four days' consideration, I put down under the different heads short hints of the different motives, that at different times occur to me *for* or *against* the measure. When I have thus got them all together in one view, I endeavor to estimate the respective weights […] [to] find at length where the balance lies […] And, though the weight of reasons cannot be taken with the precision of algebraic quantities, yet, when each is thus considered, separately and comparatively, and the whole matter lies before me, I think I can judge better, and am less liable to make a rash step; and in fact I have found great advantage for this kind of equation […]. (Dawes & Corrigan, 1974, p. 95, emphasis in original)

It was argued in Article 3 that rationalist accounts presume questions of policy or resource allocation represent cognitive problems for legislators, challenges that advise deliberation on how best to exploit an opportunity or avoid some sort of threat, be it for the sake of better policy, improved personal standing within the institution, or an increased probability of reelection. As Benjamin Franklin wrote to his friend, *what* is irrelevant to rationalist accounts. It is *how* people arrive at a conclusion that matters for this view. Article 3 claimed that for this notion to be plausible and to provide triggers strong enough for individual legislators to perform the necessary cognitive

work, the mechanisms of individual accountability as well as political reward and punishment would have to operate effectively in the political world. Because they do not, and because existing accounts leave major observed facts unexplained, my thesis developed an alternative, more comprehensive view on legislators' information behavior when making allocation judgments. The major difference from current perspectives is the model's attempt to provide not only an account of legislators' reasoning processes and the way information is considered or ignored in a particular case, but also an interpretation of the process that generates a legislator's subjective representation of the policy problem.[33] The model developed in this thesis provides for the possibility of characterizing the policy issue not as it appears objectively to the analyst, but as it is comprehended subjectively by the legislator. It suggests considering issues of public policy and resource allocation as representing moral questions to legislators that require moral evaluations. This is a fundamentally different proposition about what the political rationale in legislators' information and decision-making behavior is about – and I consider it to be a more realistic and empirically founded point of departure for understanding why lawmakers do what they do with information than the currently dominating personal, institutional, or electoral imperatives.[34]

Findings from moral decision-making research suggest that moral problems are, by default, solved by quick moral intuitions, that is, by culturally inherited and socially shaped evaluations of good and bad or right and wrong. If moral issues are at stake, our judgment system appears to be incapable of awaiting deliberation before making a conclusion. Moreover, if deliberations come after conclusions have been reached, there is simply no opportunity for personal, institutional, or electoral considerations to intervene and shape the process. By extension, these findings suggest it is legislators' ideological posture that, by default, provides the answers to morally laden questions of resource allocation. Reasoning and the consideration of information follow post hoc. As representatives of societal groups with specific worldviews or ideologies, legislators can be expected to possess exceptionally strong defense motives to maintain coherent beliefs and to warrant loyalty to their political fraction. If intuitions are in line, defense and relatedness motives have been shown to bias every step of people's reasoning and information gathering processes. Legislators can also be

33 See Simon (1986, pp. S210-S212) for this necessary feature of behavioral decision theories.

34 See Gross (2013) for an overview on politicians' rationale.

expected to value available evidence according to whether it makes sense to their a priori beliefs and existing group affiliations, and not to some scientific benchmark. In this sense, I consider legislators' positions that are objectively defined in accordance with personal, institutional, or electoral interests to be a by-product of a properly working intuitive judgment system rather than the result of a consciously performed deliberation process. I believe that this empirically driven account of legislators' decision behaviors provides a better understanding for why legislators use or fail to use information. The intuitionist model of information behavior provides a framework that accounts for the conditions that predispose legislators to make the much observed and documented impulsive conclusions that disregard large parts of the potentially relevant reality:

> From the earliest times it has been seen that human behavior is not always the result of deliberate calculation, even of a boundedly rational kind. [...] People are endowed with very large long-term memories, but with very narrow capacities for simultaneous attention to different pieces of information. At any given moment, only a little information, drawn from the senses and from long-term memory, can be held in the focus of attention. This information is not static; it is continuously being processed and transformed, with one item being replaced by another as new aspects of a stimulus are sensed, new inferences drawn, or new bits of information retrieved from long-term memory. Nevertheless, of all the things we know, or can see or hear around us, only a tiny fraction influences our behavior over any short interval of time. [...] The methodological lesson I would draw is that we need to understand passion and to provide for it in our political models, but we need particularly to provide in those models for the limited span of attention that governs *what* considerations, out of a whole host of possible ones, will actually influence the deliberations that precede action. (Simon, 1985, pp. 301-302, emphasis in original)

I consider the intuitionist model of legislators' information behavior to provide a detailed and yet simple account of how political passion relates to deliberation and how the nature of this relationship determines what and how available policy information is considered. Specifically, the intuitionist model offers three contributions to existing perspectives. First, contrary to rationalist explanations, which either advise that legislators have a general *interest* in policy information (Cohen, 1973) or entirely deny its existence (Bussmann, 1996), the intuitionist model provides a dynamic view on this matter. It suggests that substantial interest in policy evidence emerges due to contradictory political intuitions. Otherwise, there is no need to perform the cognitive work necessary and to sincerely evaluate what the evidence indicates. From the perspective of elected officials, decision difficulty arises only if

political points of reference fail to provide unambiguous cues. Besides defining the circumstances that make information valuable for legislators' deliberations, the intuitionist model also characterizes the kind of information that will be of interest to lawmakers. In sum, the intuitionist model highlights the boundary conditions that define and characterize legislators' interest in policy evidence, something that is difficult to achieve with existing perspectives that leave no room for interest to vary. Raudla's (2012) work on Estonian legislators' use of performance information in budgetary decision-making is exemplary of current studies that choose the appropriate explanation for their findings post hoc by simply taking stock of the observed instances compatible with available theories, leaving the incompatible instances in the balance unexplained or declared an anomaly.

Second, rationalist accounts consider a biased information *search* to be either the result of people's limited ability to perform a thorough analysis of the given policy problem, and therefore as a result of people's bounded rationality (Simon, 1978), or as a purposefully employed strategy to achieve institutional or electoral goals (Schick, 1976). In the former case, current perspectives leave unexplained why biases do not lead to similar conclusions, but differ systematically among opposing political camps (Kahan, 2011). In the latter case, legislators are accused of publicly lying about what they might privately think is true (Kuran, 1995) – which I would not consider a successful dominant strategy for a legislator whose main bargaining capital is personal credibility. In contrast, the intuitionist model draws its explanations for information searches from legislators' subjective representation of the decision problem. In so doing, it is able to provide an account of why biased *and* more neutral search activities can be observed in the political arena, even from the same people. It suggests that open-minded and more extensive information searches will be prevented by politically unproblematic policy issues, that is, by policy questions for which political intuitions provide a clear orientation. This implies that any legislator is prone to a biased search and that the reasons for the bias are to be found in the nature of the policy problems elected representatives must deal with, not in people's personal characteristics (e.g., Askim, 2008). Similarly, we can expect any legislator to look for policy information more openly, the more difficult the policy questions become. If the political intuitions contradict, deliberation can be expected to precede judgment. Under such circumstances, reasoning and information searches will be shielded from the influence of biasing defense and relatedness motives. As soon as positions start to emerge,

however, they will again begin to exert their effect on legislators' deliberation capacity and distort the interpretation of the policy-relevant facts.

Finally, existing perspectives on legislators' information *use* have developed specific categories to describe the way legislators use information. Whiteman (1985), for example, has proposed that legislators use policy information in a strategic, elaborative, or substantive way. Thus far, information use has been differentiated based on the purpose it serves as interpreted by the researcher, not by the legislator. Article 1 concluded that the term "use" is misleading in describing a process that has been characterized by decision-making researchers as an "interplay" between information and a situation-bounded individual (Rein, 1980). Accordingly, the intuitionist model of legislators' information behavior suggests only two categories of information use, which vary according to the degree of ambiguity a legislator faces given a policy problem. If ambiguity is non-existent or low, the model suggests that information enters a problem environment that is highly structured along basic political reference points. Under such circumstances, a legislator's interaction with the information is shaped by prior commitments to this type of policy problem. Because there is no "vacuum" in which information is allowed to float freely, it will constantly be reflected in the available knowledge about how the world works and is likely to only be considered true or valuable if the information *makes sense* relative to what one already knows. Policy questions that provoke high ambiguity, on the other hand, create individual decision environments that are unfamiliar for a legislator. Under such circumstances, there is no vacuum that would allow information to be the sole determinant of the decision outcome. However, under such circumstances, information is valuable to a legislator, because it can help to re-establish an equilibrium among the existing political reference points and loyalties that *feels right*.

With respect to the presumed consensual effect of the More Information Hypothesis, the intuitionist model of legislators' information behavior also suggests that the provision of information is likely to intensify polarization. However, this thesis offers a different understanding of why opposing political blocks disagree over policy-relevant facts than Kahan and his colleagues' (Kahan, Jenkins-Smith, & Braman, 2011) research program provides. The Cultural Cognition Thesis proposed in Kahan's research holds that beliefs about policy information are shaped through the interaction of information with particular values, and that this interaction is responsible for producing the distorted perception and disagreement on what the overall evidence base suggests:

> Imagine that when individuals consider an issue like climate change they perform what amounts to a mental survey of experts they have observed offering an opinion on this issue. The impact 'scientific consensus' will have on their thinking will thus turn on how readily they can recall instances of experts taking positions one way or the other. The cultural cognition thesis predicts that individuals will more readily recall instances of experts taking the position that is consistent with their cultural predisposition than ones taking positions inconsistent with it. (Kahan, Jenkins-Smith, & Braman, 2011, p. 149, emphasis in original)

Such a view presumes that "the need of all of them [people of opposing cultural outlooks] for expert guidance would cause them to gravitate toward the consensus position among scientists," and ideological predispositions are why people conclude there is more sound evidence in favor of their preferred position. From this perspective, different political camps are pushed apart only because of a distorted balance of available policy evidence. The argument provided in this thesis questions this explanation. The intuitionist model suggests that when moral issues are at stake, people typically cannot be assumed to be "truth-loving." Research on moral decision-making suggests that our judgment machinery is principally designed not for accuracy, but for maintaining a coherent belief system, minimizing disagreement with one's affinity group, and for preventing siding with one's opponents (Chen, Shechter, & Chaiken, 1996; Chen & Chaiken, 1999; Kahneman, 2003). Intuitions thus predispose positions, without prior deliberation. Psychological mechanisms that are known to skew people's judgments are therefore unlikely to be the origin of polarization. Neither is the provision of policy-relevant information the *source* of increased disagreement. In my view, biasing psychological mechanisms and policy information only help effectuate what intuitions preordain. In sum, the core claim of this thesis holds that the origin of polarization results from the moral nature of policy issues and from the different views legislators have and will continue to have on these kinds of questions as long as society is heterogeneous with respect to what is considered good or bad and right or wrong. This distinction from Kahan's research approach is important, because it makes a difference in thinking about ways to promote agreement over policy information.

# 2 Policy And Management Implications

Public management, in its function as an applied field of research, should aim to provide explicit recommendations for policymakers and practitioners (Barzelay &

Thompson, 2009). This, of course, is only one view. Other students have argued that public management research should remain independent in setting its agenda (Thompson, 1956). Practitioners, too, are often skeptical about abstract scientific advice that does not fit with their previous experience. The *theory-practice divide* thus created is well-known in the literature and has been the subject of heated debate (Pitts & Fernandez, 2009, p. 402). However, this issue is not restricted to public management. The theory-practice divide is also present in the fields of policy analysis and policy implementation (Bardach, 2004; O'Toole, 1997), as well as in organizational research (Rousseau, Manning, & Denyer, 2008).

In their review of the state of public management research, Pitts & Fernandez (2009, pp. 413-414) evaluate the theory-practice divide and conclude that the debate does not seem to be settled. In their analysis, Pitts & Fernandez (2009) select only those publications from their sample that appear to reflect practitioners' concerns and analyze whether these treatments develop explicit prescriptions for policymakers and administrators. Their results show that most of the works "demonstrate a strong tendency toward academic or basic research" and that "almost three quarters (70.7%, $N = 133$) did not provide recommendations for practice" (Pitts & Fernandez, 2009, p. 409). According to the authors, this highlights that a large proportion of public management research is not making a strong effort to explicate recommendations for how practitioners can take advantage of scientific findings. Given that most understandings of public management entail an explicit orientation toward prescribing how things can be improved in practice, these results are claimed to reflect an ongoing identity crisis for the field.

Although I do not make a call for joining the evidence-based management movement (Rousseau, 2006), the understanding I have from the field of public management is one of a *craft*, where the role of research consists of providing "explanatory heuristics" so that practitioners can take advantage of basic scientific findings by adjusting and adapting them to their own concrete situation (Lynn, 1996; Bardach, 1998). What the intuitionist model of legislators' information behavior offers is, in the words of Eugene Bardach, a "'conceptual framework' that would prescribe relationships to look for and what uncertainties to calibrate" (Bardach, 2004, p. 207, emphasis in original). In this part, I will focus on extrapolating the intuitionist model's basic mechanisms for handling the provision of information to legislatures in such a way that it promotes consent on what the available evidence "really" says. With due care and the consideration of particularities, however, I see no reason not to extend the application

of the model's mechanisms to other phenomena that are based on a proper understanding of how politicians process policy-relevant information, be it from administrators, internal or external policy advisors, or any other communicating actor aiming to influence elected officials' judgments (Kelman, Thompson, Jones, & Schedler, 2003, p. 19).

From the perspective of policymakers and managers, the question is how to practically tackle the problem of polarization that is promoted by a selective and biased use of policy evidence by legislators. An obvious and rather crude proposition to mitigate polarization among opposing ideological blocks would consist of restricting the provision of ever more sophisticated information. After all, the intuitionist model of legislators' information behavior suggests, first, that in most of the cases, the information will be ignored by the legislators anyway. Second, the model implies that if the available evidence is considered, legislators will only care about politically convenient evidence and will be highly selective in what they use. A policy issue will therefore never be appreciated in all its variety of facets. Finally, as the model indicates, it is not that the evidence considered would make consensus among opposing political fractions more likely. On the contrary, the model suggests that legislators are only encouraged in their view by supporting evidence, and therefore tend to take a more radical attitude on a given issue than they would without the information. So, why not just stop producing and providing all this costly material? According to some commentators, legislators would probably not even notice if information provision was restricted (Friedman, 1979; Government Accounting Standards Board, 1997; Joyce, 1993; Poister & Streib, 1999). In this respect, Ho & Coates (2004) write:

> […] past studies have also found that performance measurement often 'hits a wall' when it leaves the executive branch and comes to the legislative or policy-making process. Many elected officials and citizens seldom pay attention to the results of performance measurement in policy discourse. Despite the widely acclaimed benefits of performance budgeting, performance measures often have limited impact on the budgetary process and do not influence resource-allocation decisions. (Ho & Coates, 2004, p. 31, emphasis in original)

There are at least two obvious factors that necessitate the provision of information to legislators and make the option of severing the communication flow unlikely. First, legislators' increased exposure to information has to do with the separation of powers between the executive and legislative branches of democratic governments. This

separation has adverse effects on legislatures' policy expertise and fortifies the need for additional, independent information.[35] In order to fill the information gap, moderate the information asymmetry, and maintain or regain policy expertise and decision-making capacity vis-à-vis the executive, legislatures have already established their own institutions for information provision (Baron, 2000; Bimber, 1991; Gilligan & Krehbiel, 1989; Jones, 1977; Cohen, 1973). Second, information provision to legislators has increased and is likely to continue to increase as two sets of ideas on how organizations ought best to be designed and controlled have gained practical momentum: the decentralization of authority and structures (Niskanen, 1971) and a shift in the focus of bureaucratic control from inputs to results (Weingast & Moran, 1983). Based on these two ideals, New Public Management reforms have introduced changes within the politico-administrative apparatus that have been accompanied by the establishment of systems that provide continuous flows of information to elected officials (Aucoin, 1990). For both of these reasons, the suggestion to artificially restrict the provision of information comes to nothing.

Yes, the proposed intuitionist model suggests that the provision of information is likely to increase polarization among opposing ideological blocks, but this increase is due to more established policy positions. Assuming the evidence provided accurately informs on the policy issues and consequences of different decisions, that legislators in favor of these consequences are encouraged in their view can be considered a good thing. Thus, in my view, mitigating legislatures' polarization through restrictions in information provision would therefore be inappropriate. It runs contrary to the fundamentals of good decision-making, namely, that intelligent judgments are made with an awareness of the consequences that result from them. Full awareness, of course, is never possible. In his classic, *The Foundations of Statistics*, Leonard J. Savage (1954) coupled the notion of uncertainty about the consequences of a decision to uncertainty about the true "state of the world." This state is subject to the ordinary course of events and is beyond control. An intelligent decision, however, consists of estimating the set of possible alternatives of the state of the world, determining the possible actions that are available to the decision-maker within a particular state of the

35 The further social differentiation and specialization progresses, and the closer this process is mirrored by the executive to acquire the expertise necessary to answer the heterogeneous demands of society and put political provisions into practice (Engi, 2007; Mayntz, 1983) – the more "The 'political master' finds himself in the position of the 'dilettante' who stands opposite the 'expert', facing the trained official who stands within the management of administration" (Weber, 1958, emphasis in original).

world, and evaluating the potential consequences that are likely to result from a specific action, given a particular state of the world. Information that sheds light on these aspects – irrespective of how faint the light is – should be welcomed. Restricting the provision of information to legislators is therefore not an option. Rather, we must think of ways to encourage legislators to consider this information more open-mindedly.

Research on how to practically handle the polarizing effect of policy information is at an early stage (Kahan, Jenkins-Smith, & Braman, 2011, p. 170). However, there is a more substantiated approach than simply restricting the provision of information that is suggested by Kahan and other proponents of the Cultural Cognition Thesis. To illustrate, Kahan's conclusion on the polarizing effect of policy information rests on the premise that ideological predispositions bias the perception of what *sound* information is and distort conclusions about the extent to which available evidence supports one's preferred side. Advocates of the Cultural Cognition Thesis claim that because congenial evidence is overrepresented and challenging information is underrepresented, people misjudge the issue. Based on this understanding, Kahan, Jenkins-Smith, & Braman (2011, pp. 169-170) propose three communication strategies to reverse the biased perception of what the overall record of policy evidence suggests. *Identity affirmation* suggests that, to be accepted, ideologically threatening policy information should be communicated in support of conclusions that are consistent with people's values. For example, evidence of increasing global temperatures is often dismissed by conservatives because it is associated with constrained commerce, a threatening implication from this ideological perspective. The authors claim that relating the evidence on increasing global temperatures to conclusions that support conservative values (e.g., society should rely more on nuclear power) will lead to a more open-minded consideration of this information. *Pluralistic advocacy* describes a communication strategy that is based on the observation that people dismiss ideologically challenging information if it is put forward by experts whose worldviews they reject and is opposed by those whose values they share. Kahan, Jenkins-Smith, & Braman (2011) suggest that people would attend to such information more open-mindedly if they perceive that it is advocated by experts of various ideological camps and from both sides of a contested issue. Finally, *narrative framing* describes a strategy that aims to evoke narrative templates shared by the particular ideological camp it wants to target. In the authors' view, narrative framing "can help to assure that

the content of the information […] receives considered attention across diverse cultural groups" (Kahan, Jenkins-Smith, & Braman, 2011, p. 170).

If we acknowledge the moral dimension of policy issues, the intuitionist model suggests that legislators' conclusions are preordained by their political intuitions and are not the product of reasoning and information gathering processes. Because they follow post hoc, debiasing the way the overall balance of available information is perceived is not going to solve the problem. Taking stock of the evidence occurs after the conclusion has already been made. In fact, identity affirmation, for example, proposes just another form of biased processing. Relating information on global warming to nuclear power policy rather than to trade would just be an adaptation to conservatives' gusto and a re-modeling of the intuitive nest on which the information is processed. Information on globally increasing temperatures now makes sense from a conservative perspective, because it is employed to support nuclear power as a good source of energy production. This has nothing to do with a more open-minded consideration of what science has to say about global warming. In my view, pluralistic advocacy is a logical solution to the problem of biased processing rather than practically viable advice. That is, if people from opposing ideological camps agree on the implications of policy-relevant information, as pluralistic advocacy suggests, then there really is no issue. How else would you get proponents of opposing blocks to agree on what the evidence "really" says? Finally, I understand narrative framing as a proposition for getting a group's attention to even consider the available evidence. The problem that these groups use the information in a way that suits their predispositions remains. It is therefore unclear to me how narrative framing is supposed to align the ways in which different ideological blocks interpret identical information.

By contrast, the intuitionist model of information behavior suggests that if we want politicians to consider policy information more open-mindedly, we have to create decision situations in which people's judgment machinery is "forced" to deliberate *before* it can produce a conclusion. Given the moral dimension of policy issues, the intuitive judgment system can only be prevented from preordaining conclusions if the policy problem is such that it triggers contradictory political predispositions. The experiment reported in Article 2 and Article 3 was designed based on this logic. It coupled the allocation issue on road network capacity to the level of business taxation. Increased funding for the road network implied raising the taxes of the benefiting businesses, whereas a decrease in road network funding was tied to tax compensations for businesses suffering from worsened accessibility. In the Swiss context, this

tradeoff prompts contradictory political predispositions. This strategy of *adversarial issue bundling*, as I will call it for the purpose of this discussion, is presumably more likely to allow for information's input into legislators' deliberations. Because of the problematic constellation of political intuitions in adversarial issue bundles, legislators can be expected to approach policy-relevant information more neutrally and more seriously consider what the evidence indicates with respect to the issue at hand. This is possible because adversarial issue bundling suspends defense and relatedness motives and offers legislators an opportunity to think through the different options for solving the given policy problem – whether they really do so is a different question. However, these are the conditions under which claims of high quality evidence, improved accessibility to policy information, and approaches to debias people's information processing (Kahan, Jenkins-Smith, & Braman, 2011; Demaj & Summermatter, 2012) become relevant and might promote the constructive use of information.

The problem with adversarial issue bundling is that institutional constraints and behavioral dispositions could prevent its implementation. First, some U.S. state constitutions and Switzerland's federal constitution, for example, stipulate that referenda and parliamentary legislation may deal with only one subject at a time. The "single-subject rule" and the so-called "Grundsatz der Einheit der Materie", as provided in article 34, section 2 of the Federal Constitution of the Swiss Confederation, aim to protect individuals' freedom to form opinions and give genuine expression to their will (Hurst, 2002; Giacometti, 1935). In one of its verdicts, the Federal Supreme Court of Switzerland has outlined the principle of the single-subject rule as follows:

> Der Grundsatz der Einheit der Materie verlangt, dass eine Vorlage grundsätzlich nur einen Sachbereich zum Gegenstand haben darf bzw. dass zwei oder mehrere Sachfragen und Materien nicht in einer Art und Weise miteinander zu einer einzigen Abstimmungsvorlage verbunden werden, die Stimmberechtigten in eine Zwangslage versetzen und ihnen keine freie Wahl zwischen den einzelnen Teilen belassen. Umfasst eine Abstimmungsvorlage mehrere Sachfragen und Materien, ist zur Wahrung der Einheit der Materie erforderlich, dass die einzelnen Teile einen sachlichen inneren Zusammenhang aufweisen und in einer sachlichen Beziehung zueinander stehen und dasselbe Ziel verfolgen; dieser sachliche Zusammenhang darf nicht bloss künstlich, subjektiv oder rein politisch bestehen. (Swiss Federal Supreme Court, 2006, Section 2)

As the verdict highlights, the single-subject rule is designed to avoid distortions in people's political judgments. Based on current insights from decision-making research

and the understanding developed in this thesis, however, the single-subject rule does just the opposite. It prevents legislators from facing hard tradeoffs that force them to think through the problem and consider the relevant evidence on both sides of a contested issue *before* arriving at the conclusion. The conclusions reached under the guidance of the single-subject rule are not based on deliberations, irrespective of how biased. In the light of current decision-making research, policy judgments under the single-subject rule are the result of people's political intuitions. From this perspective, and as the court verdict explicitly holds, the single-subject rule prevents people's judgment systems from facing real decision dilemmas; it is an institutional safeguard against effortful and demanding cognitive work, and essentially, against good decision-making. In the same verdict, however, the Swiss Federal Supreme Court has acknowledged that it is difficult to determine whether a given policy question meets the single-subject rule. It has thereby granted wide autonomy to agenda setting authorities to design policy questions in a way that would allow for adversarial issue bundling:

> Da der Begriff der Einheit der Materie von relativer Natur ist und die Gewichtung einzelner Teile einer Vorlage und ihres Verhältnisses zueinander zudem vorab eine politische Frage ist, kommt den Behörden bei der Ausgestaltung von Abstimmungsvorlagen ein weiter Gestaltungsspielraum zu. (Swiss Federal Supreme Court, 2006, Section 2)

The implementation of adversarial issue bundling might be further limited by legislators' behavioral predispositions to avert or circumvent decision dilemmas. I noticed this tendency while conducting the post-experimental interviews with the participating legislators. While the comprehensive analysis is to be reported in a separate treatment, the preliminary conclusion I would draw for the purpose of this discussion is that legislators are likely to apply any given possibility to alter the elements of an ideologically challenging policy question. One of the most frequent comments made by subjects facing the politically difficult decision scenario was to lament that the proposed tradeoff was not realistic and that such a combination of policy matters would only be viable in an experimental setting. Others noted that the first thing they would propose during the fictional fraction meeting, which was supposed to follow the experiment, would be the proposition of a different financing source to be affected by the allocation decisions on road network capacity. Not surprisingly, the suggestions made by members of the political left and right always

included examples that were unproblematic from their given ideological standpoint, and were often more remotely connected to the issue of road network capacity than to business taxation. In short, even if adversarial issue bundling were to be implemented by policymakers and managers, legislators' immediate consequential behavior may be directed toward the alteration of the designed tradeoff rather than to its effortful and open-minded deliberation.

# 3 Limitations

This thesis is subject to limitations that can be raised along the same dimensions the thesis claimed to make contributions. In the following discussion, I will therefore point to some methodological, empirical, and theoretical caveats. This discussion is not exhaustive, as there are a myriad of limitations to each dimension that could also be discussed. Some of these other limitations have already been presented in Article1, 2, or 3, while others will remain untreated. In this final chapter, I will focus on the dimensions I consider relevant for the interpretation of the results, conclusions, and implications presented in the thesis.

## 3.1 Methodological Limitations or Threats to Internal Validity

The methodological bedrock of this thesis was a randomized controlled experiment. The key claim of this method consists of providing confidence to the experimenter that the causation inferred from the analysis of the data is internally valid, namely, that the manipulated treatment is the cause of the measured outcomes and not some other extraneous factor (Druckman, 2005, p. 59). Threats to internal validity may result from different sources. An easy mnemonic helps in remembering them. THIS MESS (Wortman, 1983, pp. 225-226) describes eight such threats that have been identified by Campbell & Stanley (1963): testing, history, instrumentation, selection, maturation, experimental mortality, statistical regression, and selection-maturation interaction. Most of the threats to internal validity can be prevented by a proper experimental design. In the case of this thesis' experimental setup, history, instrumentation, maturation, and experimental mortality are of no concern. The observations derived from the experiment reported in Article 2 and Article 3 were not affected by these threats, because there was no historical event outside the study that could have affected legislators' attitude toward this issue (i.e., a new or changed political debate on the capacity of road networks, the level of business taxation, or environmental protection

measures); instrumentation to measure the outcomes of interest did not change (i.e., the scale to measure subjects' decision to deviate from the current level of funding in Article 2 and the eye tracking to measure a legislator's information behavior); no other event which could have caused maturation and thereby changed the legislators' behavior took place during the experiment; no participant dropped out during the procedure and biased the interpretation of the data obtained from the remaining subjects; participating legislators were not selected based on extreme scores of some sort, so a "regression toward the mean" is not to be expected; and since maturation was excluded as a threat source, its interaction with the "selection" dimension is also of no concern.

The issue of testing, however, might be relevant for the interpretation of the eye tracking results reported in Article 3. The experimental procedure included calibrating the eye tracker' to the subjects' position. Therefore, the legislators had to follow a red dot with their eyes that was moving around the corners of the display. In this sense, the legislators were made aware of the fact that the eye-tracking device was going to record whether and where they were looking during the experimental procedure. In experimental psychology, the issue that can arise from this awareness is known as the "demand characteristics argument." It refers to the potential threat that participants might become motivated to behave the way they believe the experimenter wants, because they wish the researcher and his study to be successful and to "contribute to science and perhaps ultimately to human welfare in general" (Orne, 1962, p. 778). Although there is no reason to doubt that the subjects considered the information presented to them more intensively due to the presence of the eye tracker, the purpose of the experiment reported in Article 3 was to test the theoretical proposition that changing constellations of political intuitions cause *different* patterns of information behavior. Because the experiment's objective was not to evaluate information behavior, as such, but the differences therein caused by political intuitions, I consider the threat to internal validity resulting from demand characteristics to be negligible to the relationship of interest (i.e., interest, search behavior, and use of information).

In contrast, selection may represent a more serious source of threat to the internal validity of the decision experiment reported in Article 2. First, while the subjects of the treatment groups were real Swiss state legislators, the participants in the control group were undergraduate students of the International Affairs & Governance program at the University of St. Gallen, Switzerland. Systematic bias in the outcome of interest, that is, in the decision on how the budget for road network capacity ought to be changed,

could have occurred. Compared to the students, the legislators do not need any particular framing to consider the allocation problem from a political perspective. In all likelihood, the allocation problem solved during the experiment was a familiar issue that a member of parliament has thought about and discussed many times. The effect of this familiarity with the decision problem could be a more pronounced reaction, and therefore a more extreme allocation decision by the legislators in comparison to the rather politically "innocent" university students. Because of this possibility, there is a threat that the difference in decision outcomes between the control and treatment groups is not due to the provision of information, but to firmer prior opinions.

## 3.2 Empirical Limitations or Threats to External Validity

While properly designed experiments can provide a high confidence with respect to the presumed causal relationship, they can also reduce the relevance of the findings for the world outside the experimental setting. External validity refers to the generalizability of experimental insights to other, more natural situations (Druckman, 2005, p. 60). The external validity issue arises because of the artificiality of experiments conducted in controlled environments. Berkowitz & Donnerstein (1982) summarized the problem as it is portrayed by critics:

> […] the great majority of psychology's experiments employ a very limited sample of participants (typically, college students) placed in a fairly unique setting (a university laboratory) and usually working on tasks bearing little resemblance to their everyday activities. Given the unrepresentativeness of these subjects and situations, the critics ask, how can the findings be generalized to the 'real world' of ordinary people engaged in their daily lives? (Berkowitz & Donnerstein, 1982, p. 245, emphasis in original)

According to Berkowitz & Donnerstein (1982, pp. 246-249), critics' objections to the external validity of experimental insights based on assumptions, both about the purpose of experiments and about subjects' behavior. Scholars such as Brunswik (1955) and Campbell & Stanley (1963), for example, have equated the external validity of an experiment with the degree to which designs employ a representative sampling of situations and participants. According to this probabilistic view of external validity, researchers ought to pursue "ecological validity" and implement "mundane realism" in their designs to enable making inferences from the research sample to the outside world possible. Other critics object that experiments ignore the nature of

human behavior, which is driven by the need to seek meaning, governed by the social rules it is embedded within, and aimed at fulfilling inherent capacities (Berkowitz & Donnerstein, 1982, p. 246). It is argued that experiments presume an inadequate and oversimplified mechanistic view of participants as stimulus-response machines (Schultz, 1969).

As reported in Article 2 and Article 3 of this thesis, the experiment was designed in such a way as to avert these threats to external validity. Ecological validity, for example, was increased by recruiting real members of the parliament rather than university students; by conducting the experiment in a real setting, namely, the parliamentary building; by applying an experimental scenario that resembles the real budgeting process with respect to its process (i.e., legislators consider their positions before the upcoming meeting of their political fractions) and content (i.e., legislators face an actual allocation question); and by providing the usually available information. In addition, the experiment's design and the theoretical propositions it attempted to test were not based on a robot-like view of the participating legislators. On the contrary, legislators' thought processes were at the center of the research interest. In line with "most influential analyses of human behavior in experimental social psychology," this thesis' experiment and the intuitionist model of legislators' information behavior "assume that he or she is an active seeker after meaning […]" (Berkowitz & Donnerstein, 1982, p. 247). Overall, and compared to naturalistic examinations, the thesis' experiment and the behavioral model are much more precise in evaluating the circumstances under which legislators are thoughtful or intuitive.

Although important to consider, in general, neither aspect represents a fundamental threat to the external validity of experimental insights (Postman, 1955, on the need of experiments to be representative; Kruglanski, 1976, on the human subject in psychology experiments). If a researcher believes that mundane realism and a proper view of human behavior are accounted for by the experiment – as is the case in this thesis – they can be met comparatively easily by the characteristics of the research design. The main question for external validity is whether the experiment "captures the intended essence of the theoretical variables" it aims to investigate (Kruglanski, 1975, p. 106, cited in Berkowitz & Donnerstein, 1982, p. 248). Hence, what is difficult and might pose a more serious threat to the external validity of experimental insights are the operationalization and interpretation of the theoretical constructs by the researcher and experiment's subjects, respectively (Cronbach & Meehl, 1955). I will therefore first report on the meanings I invested in "political intuitions," "allocation judgment,"

and "information behavior" as the variables of theoretical interest, and afterwards discuss how the presumed relationship might change on leaving the experimental environment and moving to the political arena.

In my empirical endeavor, I related politicians' "information behavior" and their "allocation judgments" to "political intuitions." The understanding of political intuitions is based on an interplay of political ideology and interests as explicated by Carol H. Weiss (1983) and as described in Article 1 of this thesis. In short, political intuitions in this study represent a politician's judgmental predispositions toward a given policy issue. These predispositions have been shaped through the politician's membership in a particular societal group, affiliation in the political organization of this group, and function within the party's fraction in some government institution such as the legislature. At the core of political intuitions are moral evaluations of policy options, that is, intuitive reactions of approval or disapproval to specific policy propositions. To evoke political intuitions experimentally, the content of the decision problems was designed according to the salience of political divides in Switzerland. To vary the degree to which political intuitions conflicted, additional reference points such as business taxation and environmental protection were coupled to the consideration of the budget for the state's road network capacity. By connecting current policy questions to long-standing political divides – both defined for the Swiss political landscape – I expected the construct of the political intuitions to be reflected through both decision scenarios and, if valid, to generate different degrees of decision difficulty among the participating legislators (Cronbach & Meehl, 1955, p. 290). The manipulation check reported in Article 2 and Article 3 highlighted that the decision difficulty was significantly different between the experimental decision scenarios, but nevertheless, was a matter of degree. However, the construct of political intuition remains necessarily fuzzy in its experimental application and cannot be fully captured.

I based my understanding of human "information behavior" on T.D. Wilson's seminal works on this phenomenon (Wilson, 1981, 1997, 1999, 2000, 2006b, 2006a) and decomposed the construct into three different aspects of micro-level behavior, that is, a legislator's interest in information, search for information, and use of it. My definition of these sub-constructs was guided by the measurement instrument that was at my disposal, the eye tracker. Based on existing eye-tracking research (Duchowski, 2002; Zhiwei, Shirley, Elisabeth, & Judith, 2006; Rayner, 1998; Duchowski, 2007), I equated interest in information with the *cognitive load* (i.e., fixations) employed by a legislator while looking at what was provided; I defined information search behavior

with the *intensity* and *radius* of legislators' examination of what was made available to them on the computer screen as well as their *effort to integrate* the different pieces of information; finally, I presumed information use to be reflected in the *evolution of the information search*, because I expected the use of information in time $t$ to affect the search in $t + 1$. Besides limiting the legislators' natural wide spectrum of information behavior to what they could observe on the screen before them, this three-pronged operationalization of information behavior provides only quantitative data, and precludes inferences about how the subjects interpreted these response possibilities. While the referenced eye-tracking literature provides support for the operationalization of interest in information and subjects' search behavior, it is a novel approach to infer individual information use from the evolution of people's search patterns. This assessment method's validity, however, rests on the core assumption of cognitive-behavioral theory, research, and practice that behavioral responses are mediated by conscious and unconscious thought processes (Davison, Vogel, & Coffman, 1997; Beck, 1967; Ellis, 1962).

Finally, "allocation judgments" are conceived as individual decisions on questions of government funding. For the presumed relationship among political intuitions, information behavior, and allocation judgments, the absolute amount of money is secondary. It is the legislators' judgment on how the current level of funding ought to change that matters for the framework proposed. Furthermore, the percentage of budget change legislators had to state at the end of the experiment is to be understood as a reflection of their intended stance on the given issue; the larger their deviation from the current level of funding, the more extreme their positioning. Moreover, the experimental situation was modelled as an "individual preparation session," where legislators had to make a judgment about what budget level they would be willing to support in the upcoming meeting of their own party's fraction. The potential threat that might arise from this experimental situation is that participating legislators may have interpreted the response option as an opportunity to combine their own position with a strategic supplement or deduction in the prospective party fraction meeting and the negotiations expected therein.

If we leave the controlled environment and consider the experimental insights' generalizability to the political arena, threats arise from reality's variation along these three dimensions. I will therefore point to some variations I deem important to consider for the proposed relationship among political intuitions, information behavior, and allocation judgments. For example, the *political intuitions'* claimed

effect on legislators' behavior and the effects' magnitude in a political dispute will depend heavily on the content of the policy issues that the legislators face and their experience in dealing with them. Not every real-world policy question is as morally-laden as the intuitionist model of information behavior suggests, and not every bill is designed to affect a particular community in a way that triggers immediate political intuitions (Blondel, 1970; Lowi, 1972). Many policy questions will therefore fall through the cracks of the proposed framework and have a weaker biasing effect on legislators' information behavior than the intuitionist model suggests. By contrast, I assume that because most of the legislators have a wide range of political experience, it will be difficult to model policy problems in a way that is able to create dilemmas among those specialist legislators who are in charge of specifying issue positions and recommending them to their fellow party fraction members. I therefore believe that it will be virtually impossible to create politically difficult tradeoffs and provide conditions that shield defense and relatedness motives from biasing legislators' reasoning and information gathering processes as suggested by the model.

In reality, legislators' *information behavior* is allowed to be reflected in many ways. Contrary to the experimental setting, where subjects were confined by the frame of the computer screen in expressing their interest in obtaining information, their search, and their use behavior, the political arena offers legislators the opportunity to make use of a wide array of information sources (Weiss, 1983, pp. 227-228). Among those channels, the media, conferences and meetings, consultations with policy experts and administration representatives, conversations with party colleagues and political opponents, and discussions with friends and family figure prominently in legislators' real information repertoire. Because these possibilities exceed the extent of information available in the experiment and are much more diverse with regard to content, the effect of information that is formally supplied through official documents is likely to be more limited than the results suggest.

Finally, in the political arena, *allocation outcomes* are not the result of a single individual's judgment. For reasons explicated in all three articles, this thesis was interested in the effect information has on individual decision-making. These positions, however, are only the starting point for the political dispute over the final outcomes. More variables enter the process and shape the final government budget. Among the many influential structural and procedural factors of organizational decision-making within governments (Wilensky, 1967; Simon, 1976; Lindblom, 1980; Allison & Zelikow, 1999), I deem hierarchy, the internal division of labor, the

fragmentation of issues, routines, and the control of resources as the crucial factors that come into play and make contributions to the overall and final allocation of public resources. The degree to which this thesis' experimental insights on information's influence on legislators' allocation judgments can be extended to the real-world government budget outcome is inversely related to the effect of these other factors.

## 3.3 Theoretical Limitations

In this final section, I comment on three more theoretical limitations of the proposed model of legislators' information behavior. These limitations concern the advancement of legislators' moral understanding, the empirical bases for diverging political intuitions, and the ontology of the intuitionist model of information behavior. The essence of the proposed information behavior model is that legislators' policy decisions represent moral judgments, and that these judgments are produced by political intuitions – "fast, effortless, and automatic affective responses" that decision-making research has found to be "the primary source of moral judgments" (Pizarro & Bloom, 2003, p. 193). Reasoning and information are typically employed post hoc and represent ideologically biased justifications for conclusions that have already been reached. Just as for people in general, legislators' political intuitions are generally shaped by the environing cultural context and to some degree, represent the product of the beliefs, interests, and practices of one's ideological camp. In sum, the intuitionist model of legislators' information behavior suggests that the morality of policy issues and legislators' ideologically-driven intuitive responses represent the source of disagreement over policy information.

First, a strict reading of the intuitionist model reveals a rather static view of legislators' potential to advance their moral understanding. There is no mechanism that would explain how changes in moral intuition occur. The general critique of the intuitionist approach to people's moral decision-making put forth by Saltzstein & Kasachkoff (2004), and summarized by Haidt (2004), applies perfectly to the version provided in this thesis:

> In this model, evolution built a bunch of intuitions into people's heads, and when people are confronted with social situations, these intuitions fire off, causing judgments, which cause post hoc reasoning. End of story, except that some other people feel the need to comply with the person's judgment, so they do so, under pressure and without conviction. […] reasoning plays no causal role in the judgment process, we are all

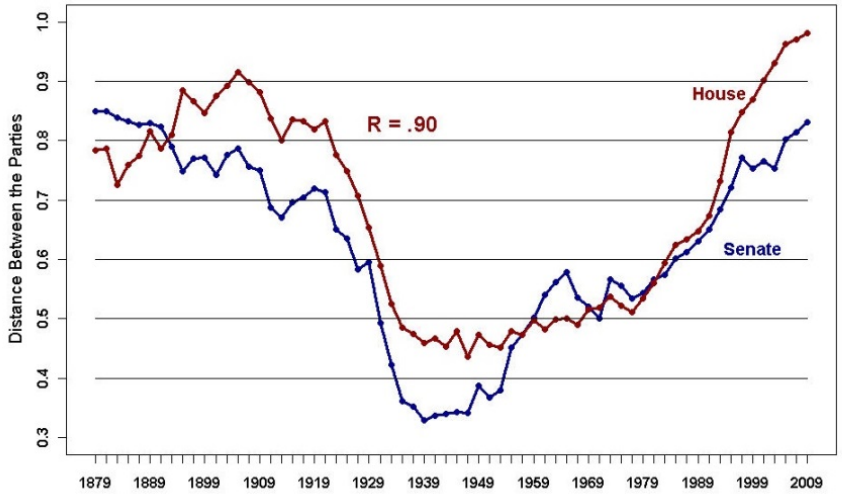
> prisoners of our gut feelings, and it is hard to see how societies advance or individuals change their minds. (Haidt, 2004, p. 283)

This theoretical deficiency poses a serious problem for the understanding of how new policy positions are formed within a given political community. Some of the most important moral issues legislators face today represent new experiences and could not have been anticipated before they actually arose. For example, the debate on stem cell research that prominently featured in the Swiss, EU, and US political landscapes was only made possible through in vitro fertilization and new technological capabilities in deriving stem cells from early stage embryos (Thomson et al., 1998). To defend the intuitionist model of legislators' information behavior as presented in this thesis, one could argue that although such moral issues might be new to mankind, the problems, and therefore the arguments and political intuitions on which elected representatives base their positions, will always refer back to some pre-existing beliefs of a particular ideological camp, for example, about the genesis of life. Such an understanding, however, presumes that moral advancement is bound to some sort of basic innate ideas and that fundamentally new ventures in moral standpoints are not possible (on this matter, see De Waal, 1996; Fiske, 1991). One possibility to do so, however, consists of enabling advancement through interpersonal moral reasoning (Pizarro & Bloom, 2003; Haidt, 2004, 2003). Proponents of this view recall that most of the time, moral reasoning occurs in social settings where people challenge each other's positions and thereby trigger new intuitions. Moral judgment is not bound to individual thinking. It occurs in the social world, where it is changed "as people gossip, argue, and […] reason with each other" (Haidt, 2004, p. 283). This is especially true in the political arena, where moral reasoning is only rarely a private affair and most often a public spectacle. In contrast, the intuitionist model of legislators' information behavior provided in this thesis has no such social component. It sets an exclusive focus on legislators' personal moral judgment process, and thereby excludes the influence of the social world around them. While it captures the cognitive processes that lead to legislators' individual policy positions, a model update will need to provide an understanding of how intra-group moral reasoning that occurs within any political camp shapes individual intuitions.

Second, the intuitionist model of legislators' information behavior as presented in this thesis was employed for establishing, among other things, the polarizing effect of policy information on legislators' positions. The model suggests that the moral dimension of policy issues predisposes legislators' judgments and biases their

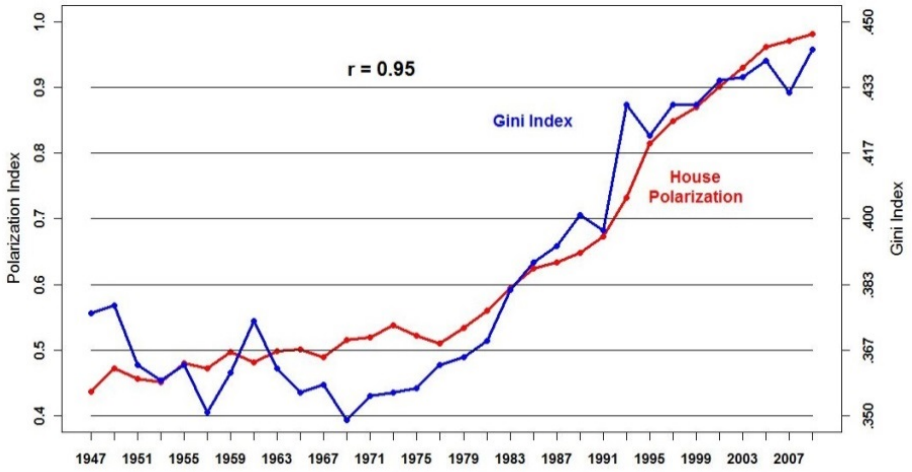
subsequent reasoning and evidence processing. In this post hoc process, legislators were claimed to be subconsciously guided by defense and relatedness motives, which were particularly strong within legislatures to ensure legislators' beliefs and group loyalties are not compromised, and hence, the disagreement over the exact same policy information. The veracity of this account, however, rests on an important empirical requirement that has thus far been ignored. In order for policy information to fortify disagreement, society itself must possess the characteristics necessary for leading people's biases into opposing directions. In other words, for any given policy information to be differentially biased by political intuitions, the political intuitions themselves must diverge. This, in turn, is only possible if society is composed of groups that differ with respect to their beliefs, interests, and practices. Naturally, difference is almost always present within societies. But it is not the mere presence of these differences that matters for the veracity of the intuitionist model's predictions. It is primarily the magnitude of difference in the content and form of existing social differences that provides the conditions for "identity politics" (Heyes, 2012) and for evidence to polarize groups. The U.S. context, for example, provides an insightful case of national identity formation and change (Putnam, 2007), and it illustrates how the struggle for wealth, prestige, power, and policy preferences has been shaped by religious, cultural, racial, and linguistic differences (Citrin, Reingold, & Green, 1990). However, the intensity of this struggle has varied throughout history depending on the cohesiveness of national identity. In "Polarized America: The Dance of Ideology and Unequal Riches," McCarty, Poole, & Rosenthal (2006) document Congress' polarization and its co-variance with the proportion of foreign-born citizens and income inequality (see Figure 12, Figure 13, and Figure 14). Whether social diversity represents an asset (Fogel & Engerman, 1971) or a threat (Fukuyama, 2006) is a different debate. Of interest to this thesis is the fact that the intuitionist model of legislators' information behavior requires an epistemological base that is contingent upon the composition of society over time and space.

## Figure 12: Political Polarization 1879-2010



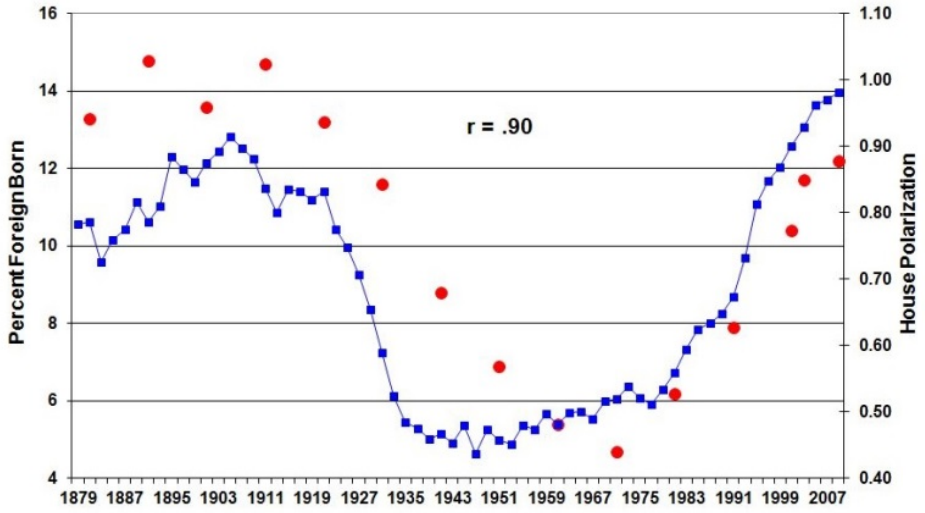

*Source*: McCarty, Poole, & Rosenthal (2006).

## Figure 13: Political Polarization vs. Income Inequality




*Source*: McCarty, Poole, & Rosenthal (2006).

**Figure 14: Political Polarization vs. Percent Foreign Born**



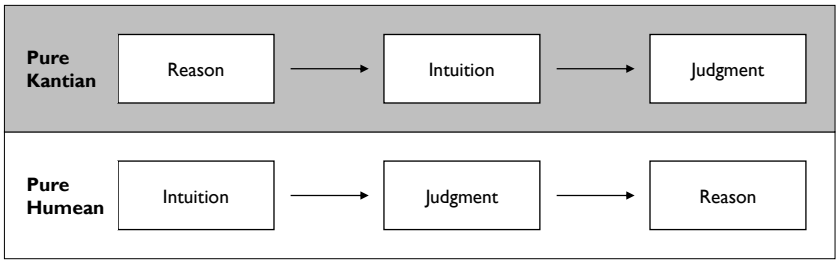

*Source*: McCarty, Poole, & Rosenthal (2006). Dotes represent the percentage of foreign born U.S. citizens.

Finally, the intuitionist model of legislators' information behavior represents an alternative to rationalist perspectives built upon incrementalist, rational choice, and institutionalist accounts of government budgeting. From these perspectives, the value of information as a decision-making aid for legislators is a result of optimality considerations given the claimed characteristics of the public budgeting process. This view was characterized as rationalist, because it presumes legislators' information behavior and allocation judgments are based on *prior* deliberation. By contrast, the intuitionist model of information behavior considers legislators' allocation judgments to be the product of political intuitions, and their reasoning and information gathering activities as after-the-fact processes.[36] In this sense, the intuitionist model represents an anti-rationalist view of legislators' allocation judgments and information behavior (Haidt, 2001, p. 815). In so doing, it takes a stand on a long-lasting debate over the role of reason and intuition in moral decision-making that reaches from Plato to Leibniz, Decartes, Hume, and Kant, and to more modern thinkers such as Hare and Rawls (Huebner, Dwyer, & Hauser, 2009). The differences between the camps might appear subtle to outsiders of the debate, but they are fundamental to its contestants (Figure 15). Decision-making scientists agree that fast and automatic intuitions

36 This is a claim about how judgments are actually made by elected representatives and not how they should be made. See Baron (1998) for the negative consequences of intuitive decision making in public policy.

precede people's moral judgments. They disagree substantively, however, over the question of whether moral intuitions themselves have been informed by prior reasoning. It is interesting to see that both advocates and opponents of "educated intuitions" marshal the same research evidence to substantiate their claims (e.g., refer to the debate among Pizarro & Bloom, 2003; Haidt, 2003; Saltzstein & Kasachkoff, 2004; Haidt, 2004; and Huebner, Dwyer, & Hauser, 2009).

**Figure 15: The Role of Reason and Intuition in Moral Decision-Making**




*Source*: adapted from Huebner, Dwyer, & Hauser (2009, p. 2).

The situation resembles a chicken-and-egg problem. Both sides present reasonable arguments for their point. Yet it appears to me that the question of which perspective of moral decision-making is to be endorsed embodies much more than an analytical conflict over the suitability and convenience of these models to answer empirical questions. I have the impression that the debate itself is driven by diverging value systems and opposing beliefs about how the human mind works. The major limitation of the proposed model of legislators' information behavior arises, therefore, from my own membership in the intuitionist camp of moral decision-making research. From this perspective, the entire argument presented in the different parts of this thesis may be no more than the distorted product of my intuitive choice of the notion I believe makes more sense for understanding what I observed – encouraged by the beliefs of the people around me and driven by the desire to elaborate something new.

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# CURRICULUM VITAE

## Experience in Profession, Research, and Teaching

01/2014 – present **University of St. Gallen, Center for Public Management & Governance**

Public Sector Project Manager, Research and Teaching Associate (St. Gallen, Switzerland)

***Professional Projects for Public Sector Partners, Government Bodies***

- For the IT Department of the State of St. Gallen: Developing a Citizen-Centered E-Government Approach
- For the State Government of St. Gallen: Providing a Model for Policy Planning, Action, and Analysis to Demonstrate Government Program Success

01/2013 – 12/2013 **University of California Berkeley, Goldman School of Public Policy**

Visiting Scholar for Research Methods, Public Budgeting, and Parliamentary Oversight supervised by Professor Eugene Bardach, Professor Eugene Smolensky, and Professor John Ellwood (Berkeley, CA, USA)

11/2012 **Swiss National Science Foundation Award**

Scholarship for the dissertation project on „The Role of Information for Politicians in Making Budgeting Decisions“

02/2010 – 12/2012 **University of St. Gallen, Center for Public Management & Governance**

Research and Teaching Associate (St. Gallen, Switzerland):

***Professional Projects for Public Sector Partners, Government Bodies***

- For the Swiss Federal Department of Finance: Challenges for Performance Budgeting on the Federal Level
- For the Swiss Federal Department of Finance: Revision of the Financial Budget Act and Issues on Governance
- For the States of Aargau and Zurich: Legislators' Information Needs for making Budgeting Decisions
- For the States of Aargau and Zurich: Integrated Financial Plans for State Legislatures
- For the City of St. Gallen: Repositioning the Public Construction Authority
- For the Municipality of Herisau: Developing an Integrated Financial Plan

***Research Associate and Teaching Assistant for the Following Subjects/Courses at the Undergraduate Level, Graduate Level, and Executive Education of the University of St. Gallen***

- Financial Management in Public Institutions
- Public Management and Governance (also lecturer)
- International Public Management
- Public Governance: Management, Law, and Democracy
- Practical Project in Public Management (also lecturer)
- Public and Nonprofit Services
- Managing Defense
- Interdisciplinary Core Course: European Policy Fields, National Sovereignty, European Integration, and Globalization
- Classics in Organizational Studies and Political Philosophy

06/2009 – 08/2009 **Käppeli AG** (Wohlen, Switzerland)

Full-time Construction Worker

07/2008 – 08/2008 **Autokosova** (Pristina, Kosovo)

Internship, Assistant to Key Account Manager

07/2007 – 06/2008 **Microsoft Switzerland GmbH** (Wallisellen, Switzerland)

Internship, Microsoft Lead Student Partner for Academic Outreach

10/2001 – 03/2003 **Media Markt** (Dietikon, Switzerland)

Part-time Commercial Employee, IT Hardware & Software

## Education

02/2010 – present **Ph.D., International Affairs & Political Economy**

University of St. Gallen (St. Gallen, Switzerland)

University of California Berkeley, Goldman School of Public Policy (Berkeley CA, USA)

04/2010 – 09/2010 **Certified Public Financial Officer (PFO-HSG)**

University of St. Gallen (St. Gallen, Switzerland)

| | |
|---|---|
| 09/2008 – 12/2010 | **CEMS Master's in International Management**<br>University of St. Gallen (St. Gallen, Switzerland)<br>Erasmus University (Rotterdam, Netherlands) |
| 09/2007 – 04/2010 | **M.A. HSG in International Affairs & Governance**<br>University of St. Gallen (St. Gallen, Switzerland) |
| 09/2003 – 08/2007 | **B.A. HSG in International Affairs**<br>University of St. Gallen (St. Gallen, Switzerland) |
| 08/1999 – 07/2003 | **Degree in Applied Mathematics and Physics**<br>State College of Higher Education Limmattal (Urdorf, Switzerland) |

## Leadership and Negotiation Skills

| | |
|---|---|
| 09/2008 | **University of St. Gallen**<br>Tutor for Undergraduate Students (St. Gallen, Switzerland) |
| 04/2008 | **Professional Development Training at Zurich Financial Services**<br>„Dealing with Typical Critical Leadership Situations" (Zürich, Switzerland) |
| 03/2008 | **Professional Development Training at Procter & Gamble**<br>„Negotiation Skills" (Geneva, Switzerland) |
| 01/2008 – 05/2009 | **Students' Council International Affairs & Governance at the University of St. Gallen**<br>Founder and 1st President |
| 10/2006 – 11/2008 | **Community of International Politics at the University of St. Gallen**<br>Founder and Executive Member |
| 08/2001 – 07/2003 | **Students' Council State College of Higher Education Limmattal**<br>President |

## Languages

| | |
|---|---|
| German | Mother Tongue |
| Albanian | Second Mother Tongue |
| English | Proficient User (C1), Common European Framework of Reference |
| French | Advanced, HSG Level I |