Behavioral Insights Teams and Policy Change in the EU Energy Policy Domain: The Case of Eco-Labels

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Behavioral Insights Teams (BITs) have gained prominence as policy advisors for governments and are increasingly linked to changes in the way policy instruments are formulated and implemented. Given that governments suffer from a 'status quo bias' and larger policy changes are rare, we pose the question how do BITs affect policy change? And what is the type of change they trigger? This is explored in the continental European context in the field of environmental policy and the implementation of energy savings measures.

1. Introduction

The literature on the use of behavioral insights or nudges in public policy has expanded over the last five years and presents different perspectives on the long-standing phenomenon of using psychological findings in order to achieve public policy goals (Van Deun et al. 2018). There are several research lines being pursued, including the organizational manifestation of nudging in form of Behavioral Insights Teams (BITs) or Nudge Units in government as well as treating nudges as an informal tool of government action. In this paper, we aim to connect these two streams by addressing the competences and capabilities of government towards shaping policy instruments based on behavioral insights. The application of behavioral insights to policymaking depends on the interpretations of scientific findings, and the assumptions used in translating empirical evidence on human decision-making (Kuehnhanss 2019). In other words, responsible government departments and actors require the necessary policy capacity to integrate behavioral insight findings into their functions (Howlett 2015; Wu et al. 2015).

In this context, we identify BITs or nudge units as relevant catalysts of integrating behavioral insights into policy design processes. Here, questions arise about how BITs, as policy advisors, contribute towards policy formulation in order to change existing policies and the strategies they employ in order to gain support from other stakeholders. The literature in recent years has highlighted the complexity of installing BITs in government, emphasizing their distinctive success in promoting behavioral ideas beyond traditional advisory roles. BITs inhabit a unique position within governments' broader policy advisory systems, since these groups are not elected and usually become external partners that galvanize the creation of more behaviorally-informed policies for specific applications. There have been attempts to classify their role in government by identifying them as 'knowledge brokers' (Feitsma 2018). However, the degree of their impact can vary widely and rests heavily on the tendency of BITs to capture politically feasible opportunities for bringing about policy change. Given this duality in the nature of their function, we define BITs as fulfilling the role of *'epistemic entrepreneurs'*, since these largely independent units take on knowledge broker functions by bridging behavioral research and policymaking and also act as policy entrepreneurs by seizing opportunities to insert new behaviorally-based ideas into the policymaking process. The functioning and influence of BITs along both of these activities can

be critical to the way and extent to which the content of policy instruments, such as those designed for energy sustainability are modified based on behavioral insights. There is scholarly agreement regarding the role of policy-oriented learning that can be ushered in by epistemic entrepreneurs such as BITs, in catalyzing policy change (Lindblom 1959; Weiss 1980) as well as the importance of knowledge brokering in order to bridge the gap between research and policy communities (Nutley et al. 2007; Lightowler and Knight 2003). However, what remains rare, are attempts at generalizing the role of BITs as unique policy advisors and theorizing the impact that they can have on the content of policy.

We use the case of eco labelling to critically examine these processes. Eco labelling is a policy tool that is used to make environmental information about a product available to consumers through the product label with the goal of making consumption behavior more sustainable (Truffer et al. 2001; Benerjee and Solomon 2003). The labels qualify as nudges, because they change the decision architecture of individuals (Peters et al. 2007, 2009) and their design affects consumer's perceptions (Heinzle and Wiestenhagen 2012; Teisl et al. 2008; Codagnone et al. 2016). Eco labels further require government involvement due to the importance of consumers perceiving them as legitimate and to reduce information overload based on standardization (Benerjee and Solomon 2003). However, eco labels have traditionally suffered from an 'attitude-action gap' and low market penetration (Rex and Baumann 2007; Codagnone et al. 2016). Green purchasing intentions of consumers are not always translated into actions of buying more sustainable products. And, due to this discrepancy in consumer behavior, companies become less likely to introduce more 'green' products that fall under an eco-label. Based on these challenges, recent debate has focused on effective communication strategies for climate messaging (e.g. Grinstein and Riefler 2015) and the private value of eco-labels (e.g. Kaufman 2014). In this paper, we want to highlight how the involvement of BITs have proffered a third way of looking at this challenge. We emphasize that the low performance of eco labels in supporting more sustainable consumption has to do with limited knowledge in government on their effects as well as the disconnect between the product information system and national and international policies (Rex and Baumann 2007; Rubik and Frankl 2005).

We therefore look specifically at how BITs have offered support for access to behavioral evidence and how that changes the approach of government towards eco labels by introducing evidence-based variations to the consumer. This is done in a comparative setting where EU energy label performance in relation to energy efficiency is looked at across member states. The EU energy labels [Dir 92/75/EEC, Dir 2010/30] provide a rich and comparative context as these have been in place as early as 1992/1993 and their effectiveness on consumers is expected to plateau by 2030, because most of the products will be rated in the highest class. Such a scenario provides an opportunity for policymakers to consider alternative measures as well as a window of opportunity for BITs to adjust energy efficiency measures in the area of eco labelling (EC 2016). The examples were chosen based on the existence of a nudge unit or behavioral insights team that is part of government and not an external party. Here, we distinguish between the application of behavioral insights by government more generally and the installation of a unit or team that is established within a governmental entity and is recognized as part of its organizational structure. In this setting, Afif et al. (2019)

identify three models of integration: Centralized, decentralized and networked. The latter refers to a model where there is a coordinating agency, but each ministry, has its own behavioral unit (e.g. the Netherlands). In a decentralized model, several government departments have their own BIT – allocating funding and projects in that manner (e.g. the UK). And finally, in a centralized set-up, there is one unit that works will all departments – structurally pooling resources and research for designing and implementing interventions (e.g. Germany).

The paper is structured as follows: First, a review of the policy formulation literature and knowledge advisory roles in government attempts to classify the function that BITs take on in government processes. Linked to this role definition, we aim to highlight the connection of this role with policy changes happening around the support for the use of psychological. Section three, then looks the design changes around eco labels at EU level as well as in France, Germany, The Netherlands and the UK. The fourth section of the paper links the categorization of their integration with the theoretical insights in order to draw out a pattern of political support for BITs found in the different jurisdictions. In this context, we define BITs as 'epistemic entrepreneurs' and make a conceptual addition to existing frameworks of policy advisory systems.

2. Behavioral Insights Teams (BITs) and Policy Advisory Systems: A New Approach

Until recently, the area of policy formulation has been a conceptually and empirically impoverished one within the policy sciences (Howlett and Mukherjee 2018, 2017). This has changed only recently, inspired to some extent by the development of new studies looking at the different types of actors who are involved in creating and designing policies. Within studies of policy formulation, specifically, these actors have sometimes been described as 'instrument constituencies' or 'coalitions'– who employ political strategies to forward their preferred policy instruments onto government agendas for government action (Voss and Simons 2014; Mann and Simons 2014, Sabatier and Weible 2007), or 'epistemic communities' of scientists and researchers who generate the knowledge and evidence that can be used by government decision-makers for designing policies (Haas 1992, Mukherjee and Howlett 2015). Some policy formulation actors have also been called knowledge or policy brokers who serve as intermediaries and enjoy greater access to government decision-makers than either of the two aforementioned categories, by 'repackaging data and information into usable form' (Howlett 2019, p., 33). However, the research on these different communities falls short when talking about behavioural experts, whose popularity and numbers as policy formulators have surged globally, and yet they remain inadequately explored by current policy formulation theorization.

That Behavioural Insights Teams (BITs) occupy a specialized role in the policy design process, which has been broadly indicated across the discipline of public policy (Strassheim et al. 2015, Oliver 2015) as well as public management (John 2013, 2015). However, attempts to theorize about the structure of the advisory relationship that they have with policymakers and the locus of their impact on the policy design process, remain elusive. Where BITs have been defined as being policy intermediaries their role as boundary spanners and mediators of the traditional science-policy divide has been less emphasized with respect their

own tendency to be "boundary-less and invisible…characterized by role conflict, role ambiguity and a lack of organizational recognition, and a lack of career pathways" (Feitsma 2019).

With an invigorated effort to offer frameworks of analysis for understanding their different structures, motivations and development strategies, contemporary studies of policy advisory systems in policy design have garnered much scholarly interest (Howlett 2019) [1], and provide a helpful starting point for generalizing what is known about BITs. As highlighted by Howlett (2019), the knowledge gaps still existing in the examination of the expertise and politics of policy advice fall into three broad categories, and these are also mirrored by the theoretical questions that have arisen about BITs. Firstly, there is a need to develop more robust models of policy advice that go beyond dichotomous 'insider-outsider' depictions of advisors, to better include a consideration of where and how much impact they elicit. Secondly, questions about the temporal dynamics of how policy advisors strategically develop and achieve influence and support needs to be addressed. Especially to gain a comparative view about how policy advisory groups' strategies and the level of support they receive may change from the time they are conceived (t0) to a future time where their influence has resulted in some degree of observable effect (t1), to thereafter as their influence expands, sometimes even across their jurisdictional origin (t2…n). Closely related to this topic, is the third remaining gap in knowledge about policy advisors, which warrants a better comparative examination of what is the substantive content of advisory influence. That is, deliberation is needed not just about the location of support and strategic dynamics of the influence wielded by policy advisors, but also some thinking pertaining to their "influence over what"? (Howlett 2019, p. 5).

2.1 Location, Dynamics and the Substantive Impact of Policy Advice

Location

In theorizing about the relationship between experts and policy formulators, early scholars of policy formulation acknowledged that there was no automaticity in how much and how quickly policy knowledge is taken up by policymakers. Webber, for instance, pointed out that "if left to policymakers and policy researchers, there is little reason to expect the use of policy research to increase in the future" (Webber 1983, 558). Furthermore, he noted that communities of knowledge suppliers are distinctly heterogenous, because in order to encourage more uptake of policy research, researchers often espouse multiple roles as advisers, lobbyists and brokers in the policy process (Webber 1983; 1986a; 1986b; 1991). Following these findings, the notion of 'policy advisory systems' was introduced in the mid-1990s as a way of capturing the complexity of arrangements that arise from the exchange of policy relevant information between knowledge 'producers' such as scientists and political advisors, and knowledge 'consumers' such as political leaders and decision makers (Halligan 1995, Weaver 2002, MacRae and Whittington 1997).

Knowledge utilization, through the concept of policy advisory systems, in the context of contemporary policy design is now discussed in terms of the interactions between at least three communities of consumers, producers and policy advisors or

[1] See forthcoming special issue on policy advisory systems, Policy Studies, Volume 40, Issue 3. (2019)

knowledge 'brokers' (Halligan 1995; Lindquist 1990). These systems represent "interlocking sets of actors, with a unique configuration in each sector and jurisdiction, who provide information, knowledge and recommendations for action to policymakers" (Craft and Howlett 2012, 80). Their defining function, is to make certain that policy-making remains germane to changing socio-political contexts, by providing accurate and up-to-date knowledge of real world events, salient methods and providing a foundation for policy deliberations and formulation, adoption, implementation and evaluation activities undertaken by governments.

Various mechanisms exist to facilitate the actions of these different kinds of policy advisors and knowledge brokers and/or create multiple alternative paths in which information can flow (James 1993; Knight and Lyall 2013; Phipps and Morton 2013). Overall, brokerage involves all the activities that bring together decision makers and researchers, facilitating their interaction and ultimately influencing each other's work as well as promoting research-based evidence in policy (Lomas 2007; Lightowler and Knight 2013). Brokers engage in three kinds of activities which help translate research into applicable lessons for policy-makers. Those include diffusion of knowledge, which is essentially passive and unplanned, leaving the user to seek out information. A second activity is knowledge dissemination, which is an active process of communication of the findings that involves customizing the evidence for a particular target audience. And a third is knowledge implementation, which is 'a more active process that involves systematic efforts to encourage adoption of the evidence' (Sebba 2013, 396). These activities can also be framed as 'push' and 'pull' efforts, as researchers disseminate or push information out in hope of its usage by other stakeholders or a stakeholder pull, where a demand is created for such information.

Brokers and brokerage activities have gained importance in response to the increased complexity of policy-making, as the amount of information policy makers must absorb and master increases and the fast pace of problems and public demands heighten. Also, 'the decentralization of much delivery and decision-making, and the pressure to devolve delivery and/ or decision-making to local and regional government and to the not-for-profit sector are reducing governments' leverage for outcomes' (Eichbaum 2007, 465) enhances the role brokers play in policy-making.

Temporal Dynamics

Several mechanisms exist that are used to encourage or facilitate brokerage by policy advisors. The main characteristic of such mechanisms is their position in between the worlds of research and policy-making (Ward et al. 2009; Lightowler and Knight 2013). Or, as Meyer (2010) puts it, as "bridging" the gap between the research and policy communities (Nutley et al. 2007; Lightowler and Knight 2013) and the support that is afforded to their by political decisionmakers. The term 'mediation' is sometimes used to highlight the translation function played by these mechanism and acknowledges the facilitative role that policy brokers play, both of which can contribute to the greater use of specific kinds of research in policy-making (Ward et al 2009).

Echoing this point, most BITs originate within the government and usually around a time when the political environment is already supportive of the use of behavioural knowledge for policy redesign (John 2016, Kok 2017). As such, their establishment within the government has usually signalled an escalation of support for the use of psychological findings into policymaking and further

legitimization of randomized controlled trial (RCT) methods for policy design (Haynes et al. 2016). Speaking of the example of the UK in particular, John (2016) highlights that "nudges were first implemented by Labour-controlled local councils such as the London borough of Barnet; but was in 2010, after the coalition government set up the Behavioural Insights Team directed by David Halpern, that behavioural insights started to be used more prominently by UK policy makers" (p. 120).

Policy-making often follows from the advice provided by such "civil servants and others whom they trust or rely upon to consolidate policy alternatives into more or less coherent designs and provide them with expert opinion on the merits and demerits of the proposal" (Howlett 2011, 32). This is true for individual behavioural advisors, while larger advisory committees mostly involve officially selected representatives that sit on temporary or permanent bodies. Howlett, Ramesh and Perl (2009) list the characteristics of this type of knowledge broker as:

- advisory bodies are closer to societal actors than to the formal government;
- they are working with specific focus;
- they engage in dialogues that seek to build consensus, and
- they are not created to develop new knowledge, but are a venue for different interests and framing issues.

Ideally, an effective policy advisory body contains all of these elements by combining in-house advisory service with specialized political units and third-opinion options (Halligan 1995; Howlett and Newman 2010). Policy advisers, for example, take on a brokering position beyond the minister-department relationship to address policy overlap or conflict and resolve differences (Dunn 1997; Maley 2000). Complex issues which span multiple levels of government, require customized advice structures to cope with the mass of information and localized expectations (Howlett and Newman 2010).

This mediation role played by BITs, initially as specialized advisory committees, helps to ramp up uptake of particular scientific knowledge by moving beyond mere access to information to helping defining the problem, challenge existing programmes, expand the public debate based on, for example, public outreach, innovate through policy research and collaborate with various stakeholders (McNutt and Marchildon 2009; Sebba 2013). Research mediators widely 'build on existing networks of users in research designs, improve clarity of communication, gain key contacts, and develop media 'savvy' timeliness which anticipates future policy interests' (Sebba 2013, 405), which ultimately makes them valuable assets in the policy-making process. Their expertise, while centralized into one organization (as BITs often are) can allow them to increasingly take on the role of consultants. As consultants, they are able to expand their repertoire of policy advice across different departments and often across jurisdictions through processes of "'externalization' or the extent to which actors outside of government exercise influence, and 'politicization' or the extent to which partisan or non-technical aspects of policy forms the content of policy advice and thereby favours actors who deal in this kind of information and knowledge (Craft and Howlett 2013).

The mobilization of behavioural expertise, in the form of BITs, as they transcend jurisdictional boundaries takes on a unique form. Domestically, the rising influence of behavioural experts and consultants may manifest itself through a rise in

engagements between members of an existing BIT, with a variety of sectors such as energy (such as through the design of eco-labels), health and welfare. But, domestic and regional successes can also inspire the diffusion of knowledge and the development of similar organizational structures internationally, sometimes simply by example. For example, following the burgeoning of behavioural insights in the policymaking landscape in the UK, "the White House set up its own behavioural policy unit, the Social and Behavioural Sciences Team (SBST), which operates in a similar way to BIT", and similar developments have followed in Australia as well as Singapore and several European governments (John 2016), to indicate a significantly systemic rise of the influence of behavioural thought in policymaking.

This diffusion of the BIT organizational structures does not completely mimic what is already known about the externalization of policy advice. Policy advisory actors and knowledge brokers that increasingly work beyond their original jurisdictions, often take the form of independent research institutes or think tanks and BITs are markedly different from this category of policy advisors. As a subset of knowledge brokers, think tanks are defined as 'organizations that have significant autonomy from governmental interests and that synthesize, create, or disseminate information, research, ideas or advice to the public, policy makers, other organizations (both private and governmental), and the press' (Haas 2007, 68; Sebba 2013).

Think tanks are intellectually independent from governments, but their output is geared towards government needs (James 1993). This implies that researchers in think tanks strategize about the timing of their advice and who the recipient is. Second, they undertake public interest and strategic research. Thus, they focus on pressing issues in the public realm, but also take on projects that are financed by certain groups. And finally, most think tanks are politically partisan. This characteristic is common, but manifests itself in varying degrees depending on the political system and the issue at hand (James 1993). Based on these elements of think tank work, think tanks also serve as 'mediators' between research and policy (Worpole 1998; McGann and Johnson 2005; Taylor 2011; Smith, Kay and Torres 2013).

Whereas, for BITs, their influence over the design of individual policy instruments can accrue to eventually bringing about very notable changes to how policy goals are set, and a recasting of policy problems as more behavioural in nature. So, the question remains: do BITs signify the emergence of a new and distinct category of policy advisors? Their development dynamics make it difficult to evaluate their contribution of behavioural knowledge during a specific time period and confuses their roles as 'brokers' viz. 'entrepreneurs', necessitating a long-term view of what exactly their impact on the process of policy design looks like. What remains missing is a way of distinguished between the effects of knowledge brokerage on policy by examining its effect on policy content or output.

2.2 Substantive Impact/Change

In the policy sciences, while it is generally understood that the structure of the relationship between experts and policymakers can vary across policies, sectors as well as jurisdictions, empirical questions remain about the substantive impact of this relationship on the formulation of policy instruments. For example, these include questions about what type of policy changes

do behavioural units work on, whether by creating a new policy instrument (eg. launching a social engagement campaign about reducing food waste), or by tweaking the settings of existing instruments (eg. changing the format of information displayed in energy-efficiency labels). Other remaining questions enquire about how exactly do behavioural units work with governments and what these organizational arrangements mean in terms of the kind and level of policy changes they can bring about (John and Stoker 2019).

Such questions are similar to those found in the existing theories of policy change (Figure 1) that distinguish between different layers of policy change and the compounding influence that minor level changes to instrument settings can have on broader policy goals (Hall 1993, Howlett 2002). Change can thus take place for specific settings, as well as in abstract goals (Cashore and Howlett 2007, Howlett and Cashore 2009, Howlett and Migone 2013), impact means-end relationships between policy focus and policy content components (Howlett and Cashore 2009) and from minor to major (Sabatier and Wieble 2007) alterations of policy belief systems.

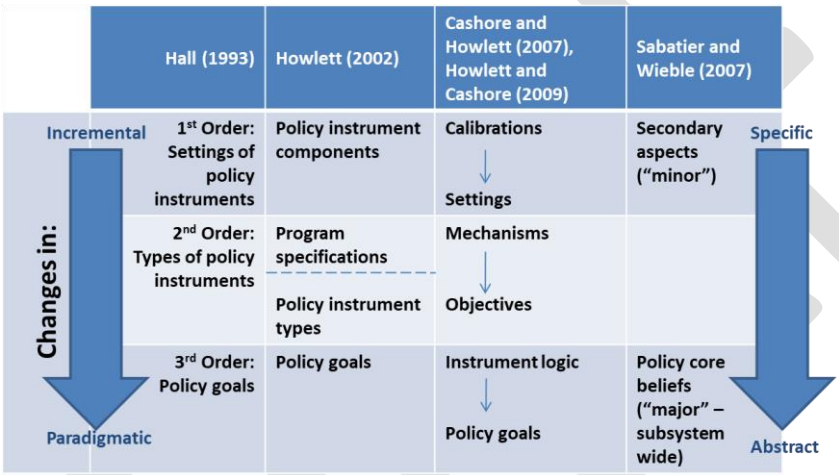

***Figure 1**. Major Theories of Policy Instrument Change.*

Policy instrument components, or secondary aspects, are the most specific, the most observable and the most pliable to the type of learning and knowledge forwarded by BITs. The functioning and influence of BITs can be critical at this stage when policy objectives are revised or re-thought based on science as well as political experience. Historically, this is the stage where BITs have faced the most resistance, in trying to influence members of opposing policy instrument constituencies who to further their policy objectives may strongly resist information that contradicts their core beliefs, and adopt information that supports their standpoint and "despite the partisan nature of most analytical and cognitive limits on rationality - actors desires to realize core values in a world of limited resources provide strong incentives to learn more about the magnitude of salient problems, the factors affecting them, and the consequences of policy alternatives" (Sabatier 1988, 158).

In line with Sabatier's assumption, there is scholarly agreement regarding the role of policy-oriented learning that can be ushered in by epistemic entrepreneurs such as the BITs, in catalyzing incremental, endogenous policy change. In a few exceptional

cases, policy learning from the incorporation of behavioural insights has been attributed to some form of cumulative yet altogether paradigmatic policy change. Through their discussion of incrementalism in policy, Howlett and Migone (2011) point out several empirical instances (such as Coleman, Skogstad and Atkinson 1996) where new knowledge can accumulate to gradually fuel an endogenous transformation of core policy goals and this is very much in line with how the contribution of BITs is developing (John 2016). In these cases, paradigmatic transformation is realized incrementally in a gradual, "neo-homeostatic" model of policy change (Howlett and Migone 2011).

In order to sketch out the link between the structural integration of BITs and changes in energy consumption instruments regarding energy efficiency and eco labels, the following section describes the processes at EU and member state level. The goal is to highlight the different ways that behavioral insights, and with that organizational adjustments towards BITs, were made and, in a second step, how this changed the labelling and framing of energy efficiency measures.

3. BITs and Energy Consumption Policies

3.1 Tracing the role of BITs: Eco-labelling in the EU context

With a focus on eco-labels in the context of reaching environmental policy goals, this research looks at the promotion of green consumption in connection to eco labelling. Eco labels will, as Daugbjerg et al. (2014) point out, only be effective if they influence consumers' purchasing decisions. In short, buyers must be aware of the labels and understand what they mean. Given these behavioral underpinnings of the eco-label instrument, there is a role for a behavioral perspective. In the EU context, several policies have been revised – including the EU Eco-label one – in order to incorporate a 'green behavior' outlook (EC 2012). Pro-environmental or green behavior is behavior that minimizes harm to the environment as much as possible, or even benefits it (Steg and Vlek 2009; EC 2012). In fact, since 2008, the Commission has been applying behavioral insights to policymaking and has so far conducted behavioral studies in nine policy fields (EC 2016a). The Joint Research Council (JRC) identifies behavioral elements in policies and proposes behavioral levers to increase effectiveness (EC 2016b). The activities of the JRC linked to behavioral insights revolve around four key themes: (1) awareness-raising and training; (2) scientific advice; (3) networking and knowledge sharing between Member States; and (4) behavioral research. Hence, the activities range from in-house scientific research and linking studies that come out of member states to contracting out studies on specific policy issues.

Eco-labels are defined as moral suasion tools that provide consumers with information about the environmental impact of their purchasing decisions. They are generally regarded as un-intrusive policy instruments since there is no obligation for consumers attached. For companies, it depends on the type of scheme being implemented. According to the OECD (2016), there are three types: (1) externally (that is, essentially state) verified, multi-issue schemes (Type I); (2) unverified self-declaratory schemes (Type II); and (3) single-issue schemes (Type III). Whereas Type II schemes are self-governed under EU supervision, the other two sub-types actively involve the state and/or the EU. In 1992, the EU opted for the third party verified scheme ISO 14024 (Type I). "This voluntary ecolabel aims at promoting products and services which have a reduced environmental impact,

thus facilitating producer engagement towards the environment and helping European consumers distinguish more environmentally friendly and healthy products and services" (EC 2019b).

The labels are applied in different areas including personal care products, cleaning, clothing and textile products, do-it-yourself, electronic equipment, coverings, furniture and bed mattresses, gardening, paper products and holiday accommodation. Financial products, food and feed products as well as office buildings are currently under development (EC 2019b). While market dynamics and technical aspects, such as ecological criteria for awarding a label, are constantly being evaluated and revised, the dimension of engaging and impacting consumers has gained less attention. As Prieto-Sandoval et al. (2016) point out, the implementation and management for improving eco labelling has been underdeveloped and urge for new research on ecolabels in the context of environmental regulation and policy.

Energy efficiency labels

As part of the larger eco design context, EU energy labels [Dir 92/75/EEC, Dir 2010/30] indicate the energy efficiency of products at the point of purchase with the goal of clarifying to consumers which options rank higher in terms of monetary savings and emission reduction. These labels provide a rich research context, because they have been in place since 1992/1993 and have been criticized for their limited success. Additionally, their effectiveness on consumers is expected to flatten out by 2030, because most of the products will be rated in the highest class. Such a scenario provides an opportunity for policymakers to consider alternative measures as well as a window of opportunity for BITs to adjust energy efficiency measures in the area of eco labelling (EC 2016).

EU energy labels are categorized as comparative labels, because they rate the energy efficiency of a product in relation to an absolute scale (Harrington and Damnics 2004; Heinzle and Wustenhagen 2012). Currently, 14 product groups are covered by the energy efficiency and labelling rules: dishwashers, washing machines, tumble driers, refrigerators, lamps, televisions, air conditioners, domestic cooking appliances, heaters, water heaters, residential ventilation units, professional refrigeration, local space heaters and solid fuel boilers. Several studies have emerged testing the effectiveness of energy labels on how consumers recognize, perceive, understand and consider the information on the labels in their purchasing decisions (e.g. Heinzle and Wustenhagen 2012). This line of research shows that there are differences in label effect for the type of electronic device as well as per country (e.g. Sammer and Wustenhagen 2006; Shen and Saijo 2009; Ward et al. 2011).

The European Union started out with ranking products along a seven-point A-G scale from most to least efficient. However, "while the original idea was to only have the best products marked with an A rating, this highest energy efficiency class has become a de facto standard on many product categories, to an extent where up to 90% of products, such as refrigerators, dishwashers and washing machines on the European market are now A-labeled" (Heinzle and Wustenhagen 2012, 61; EC 2010). In 2009, three additional classes were introduced to the scale to embrace products 'beyond A'. This led to a scheme where seven classes of energy efficiency were possible: from A+++ to D (ECEEE 2009) (see Figure 2). For this step, going towards an A+++

to D model, a 2012 study, finds that the introduction of categories beyond A reduces the effectiveness of the overall label, because it adds complexity and reduces awareness (Heinzle and Wustenhagen 2012).

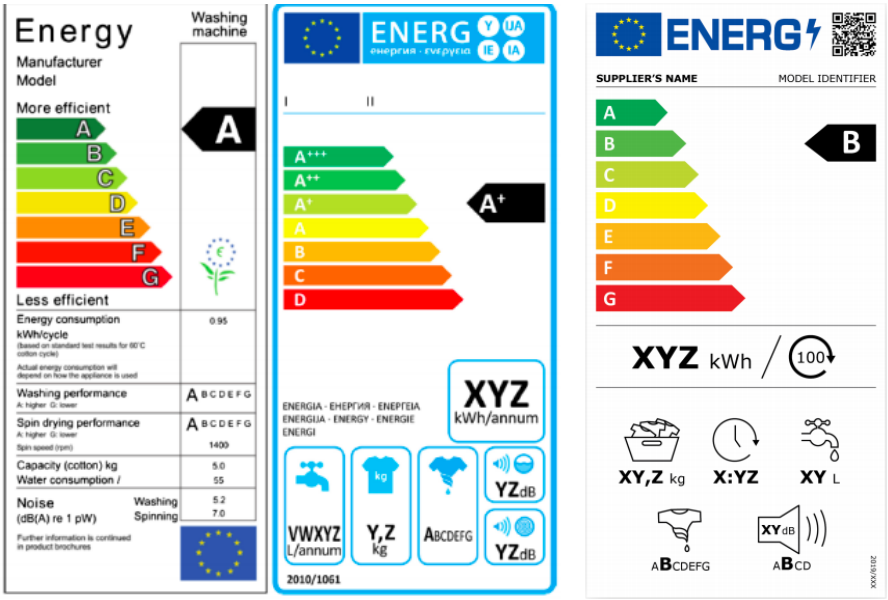

***Figure 2**. Energy efficiency classes, example: Washing machines (A-G, A-plus scale and latest A-G scale) (EC 2019).*

Given these mixed results for the expanding the A category on the label, the European Commission ordered a study carried out by London Economics, which assessed the impact of different energy labels on consumers' understanding and purchasing decisions regarding electric appliances (LE 2014). The experiments showed that consumers are more likely to choose the most energy efficient appliance when the scale uses A to G anchors rather than A+++ to D. In 2015, based on these findings, the European Commission proposed to return to the A-G label scale (see Figure 1). Following this, the EU adopted a revised energy labelling system consisting of:

- A return to the 'A to G' scale or energy efficient products, including a process for rescaling the existing labels.
- A digital database for new energy efficient products, so that all new products placed on the EU market are registered on an online database, allowing greater transparency and easier market surveillance by national authorities.

The labels will be introduced to consumers as of March 1st 2021 (EC 2019a). In this updated version, energy labels will also display other energy and non-energy information, with intuitive pictograms, to compare products and perform a better informed purchase choice: information about water used per washing cycle, storing capacity, noise emitted, etc. (EC 2019a).

In this setting, the documents and reports around eco labels more generally and energy efficiency labels in particular has shifted towards ‘green behavior’, indicating that consumer behavior has a major impact for improving energy efficiency. The labels are now presented as ‘information nudges’, due to the changes in the decision architecture of individuals (Peters et al. 2007, 2009) and their effect on consumers’ perceptions (Heinzle and Wiestenhagen 2012; Teisl et al. 2008; Codagnone et al. 2016). This shift is not only applies to the EU level, but similar developments can be found in individual member states. There are

some member states that go beyond EU regulations on energy efficiency measures and labelling in junction with the establishment of nudge units or behavioral insights teams, as the following sections will show based on the examples from Denmark, France, Germany, The Netherlands and the United Kingdom.

3.2 Member State examples

France

As one on of the first countries to systematically use behavioral insights, France published two reports in 2010 on the usage of behavioral approaches to policy. In 2013, behavioral insights projects were started – mostly with the support of additional organizations. These are run by the Secretariat-General for Government Modernization (SGMAP), part of the Prime Minister's Office. This department supports the French government in reforming government and input for innovative projects – among them re-designing policies based on behavioral insights (SGMAP 2016).

> *SGMAP first developed an interest in nudges due to behavioral insights papers published by France Stratégie, the aim of which was to implement programs that would be transparent and improve a public service without negatively impacting the quality or the values of a public service. SGMAP identified a number of areas where implementation of behavioral sciences could be effective, such as environment, health, and road safety, and worked with other departments, at both the national and local level, to implement projects. (Afif et al. 2019, 64)*

In addition, SGMAP co-founded a nongovernmental organization called 'NudgeFrance' in 2015 together with the consulting firm BVA3 to further promote the use of behavioral insights.

Linked to energy efficiency, there was a local program in Paris where energy efficient practices were tested in an effort to reduce energy bills. Based on these tests, the city of Paris funded a PhD student in order to further evaluate the interventions under the supervision of a behavioral scientist (Afif et al. 2019). Beyond the labelling of smaller electronic devices, France also has a vehicle pollution sticker scheme to rate pollution levels of cars. There are six categories – from a rating of 1 (low polluting vehicle) to a rating of 6 (high pollution levels). This is independent from the European labelling scheme and relates to environmental zones in French cities. In Paris, for example, any car with a Cit'Air Vignette of 4 or higher will be banned out of the city center.

For consumers purchasing a car, there is C02-based bonus-malus system in place since 2008. The buyer either pays a fee (malus) for vehicles emitting above a certain level or receive a rebate (bonus) if C02 emissions are below a certain limit. However, the system had to be adjusted guided by behavioral insights due to car companies designing (and consumers buying) cars that were just below the threshold and would earn a rebate. Therefore, the bonuses that had to be paid by government went up in return for very little C02 emission changes. To tackle this, the French government turned the fee-system into a continuous rather than a step-function in 2017. In this way, the rebate is an uninterrupted incentive to improve vehicle efficiency, rather than buying vehicles just above the threshold for receiving a bonus (Yang 2018).

Germany

Germany established a behavioral and social science team within the Federal Chancellery's Directorate General for Political Planning, Innovation and Digital Policy in 2015. 'The team serves as a service unit for the German Federal Ministries to integrate insights and methods from behavioral and social sciences in developing and empirically testing processes and alternative policies' (Afif et al. 2019, 73). In this capacity, the team investigated the effect of a label indicating the lifespan of electronic products based on a sample of 10,444 consumers (Artinger et al. 2017). The group designed two labels based on behavioral insights – one showing the estimated lifespan in a clear and easy-to-understand manner and another one with the average costs per year. The findings show that the life span label is not able to prevail over price in purchasing decisions (Artinger et al. 2017).

Germany also created one of the oldest eco-labels, the 'Blue Angel' in 1978. The appearance of the label has remained the same since then, however the criteria for receiving the label and the communication about it has changed. 'A recent study on environmental awareness held by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in 2014 showed that 92% of the surveyed respondents were aware of the Blue Angel and 37% named this eco-label as an influencing factor on their purchasing decision-making Based on these findings' (Rochikashvili and Bongaerts 2018, 5). However, previous studies point towards an age gap related to awareness as well as a decreasing visibility of the Blue Angel eco label (Grunenberg and Kuckatz 2003). These findings have led to changes in the communication strategy of the German government concerning the label. Recent efforts are targeting consumers of electronic devices, such as notebooks, tablets, laptops and smart phones through new communication channels and the presentation of the message. For example, using social media to work with slogans and visuals to show long-lasting consequences of buying unsustainable electronics linked to the Blue Angel eco label. The underlying strategy is the differentiation of consumer groups paired with the most effective message type and communication channel (Hirschnitz-Garbers and Langsdo 2015). The Federal Environmental Agency assigned the organic Marken-Kommunikation GmbH and the Institute for Ecological Economy Research (IOEW) as a subcontractor to develop first ideas.

The Netherlands

The Netherlands has, since around 2014, the Behavioral Insights Network (BIN NL), which is a team of representatives from all ministries with the goal of applying behavioral insights to policymaking, implementation, supervision and communication. Before the formal establishment of this network, there have been earlier attempts to integrate behavioral insights into policymaking, which date back to 2009 at Ministry and Department level (Afif et al. 2019). Thereby, advice is shared through various communication channels, including more informal ones (over a cup of coffee) and in a more structured way through offering a problem analysis and matching this with a behavioral tool. BIN NL also actively engages with policymaking through writing internal memos.

As part of this push towards behaviorally-driven policies, a nudge was implemented to increase energy efficiency among companies by the Netherlands Enterprise Agency (RVO). This was done through modifying an email sent to high energy consumption companies committing to achieving an energy saving of 30% in the period 2005-2020. This includes around 1,100 companies that have to report annually to RVO on their progress. RVO then prepares an individual company report on the basis of the data provided and gives feedback on how energy savings can be achieved. However, a limited number of companies actually download the report. In order to tackle this, three interventions were tested: (1) making the e-mail and the downloading clearer and easier; (2) making the communication more personal; and (3) emphasizing the sector comparison.

> *The most important result of the experiment was that the new e-mail to companies increased the number of downloads of progress reports by a factor of 3.5. Of the companies that received the modified e-mail with the sector comparison, 51% downloaded the report, compared to 14% of the companies that received the control e-mail. (Rijksoverheid 2017, 29)*

This is one example of a wider policy change. The Information Council (Voorlichtingsraad), which formulates the joint communication policy of the central government for the Prime Minister and the ministries, started a trial government-wide behavior lab for communication in 2017. Behavioral insights have also been incorporated into the government Integral Assessment Framework for Policy and Regulations, published by the Ministry of Justice and Security, to guide policy makers on instruments and guidelines to formulate policies and regulations (Afif et al. 2019).

United Kingdom

In 2010, the UK established the first formal and systematic application of behavioral insights in form of the Behavioral Insights Team (BIT). David Cameron helped set up the team at the center of government, encouraging them to innovate and create policy initiatives based on behavioral insights. The specific aims of the organization include:

- Making public services more cost-effective and easier for citizens to use.
- Improving outcomes by introducing a more realistic model of human behavior to policy; and wherever possible,
- Enabling people to make 'better choices for themselves'.

These goals have been applied in a variety of projects. In fact, BIT itself has become an international brand, with offices in 31 countries and 750 projects (BIT 2019; CPI 2016).

For the energy domain specifically, the establishment of BIT had immediate effects, as energy efficiency more generally and energy labelling specifically were re-framed in terms of consumer behavior in 2011 (Thomas et al. 2014). Two years later, BIT and the UK Department of Energy and Climate Change (DECC) conducted a randomized controlled trial with British retailer John Lewis in order to test label information on washing machines, washer dryers and tumble dryers.

> *Alongside the standard EU mandated energy rating labels, separate labels displayed the average lifetime running cost for each appliance. The aim of the trial was to test whether providing this information at the point of sale changed purchasing behavior, resulting in consumers buying appliances that use less energy. (BIT 2014)*

In the evaluation of the trial, the DECC (2014) concludes that there is robust evidence to use lifetime running cost labels on white good appliances, specifically washer dryers. A change in the label is seen as a low-cost improvement to address information barriers in the energy efficiency domain and to provide salient information to consumers. However, the British government is not legislating any changes to the labels; instead the report encourages retailers and consumer groups to make life time running costs more visible.

4. Discussion and Concluding Remarks

The examples above show that there are variety of ways of engaging with behavioral insights after a BIT or nudge unit has been established within government. Of those countries that have formalized behavioral input in a centralized, decentralized and networked way, changes in the area of eco labels and energy efficiency were made at level of the label itself as well as at the policy level – either to the design or the communication about it. The initiatives described fall into one of three categories:

- New labels were tested/ implemented;
- Existing labels or other energy efficiency initiatives were re-designed/ communicated differently;
- Spillover impacts occurred for broader policy goals

These changes were initiated either in collaboration with or directly by the BIT Unit. This was followed by policy changes or financial allocations – for example by hiring an external party to implement or test those changes.

The pattern of political support for BITs found in the different jurisdictions broadly indicate their transformational nature as policy advisors and the wide range of effects that they can have on the content of policy. Their origins, development and influence over the process of policy design allude to the unique duality of their role as subject matter experts as well as political negotiators. The visible impact that BITs have on the content of policy instruments, the level of political support that they are able to garner and the cooperation they can elicit from different political departments, all set them apart from typical policy brokers in policy advisory systems connecting the science-policy divide (see Figure 3)

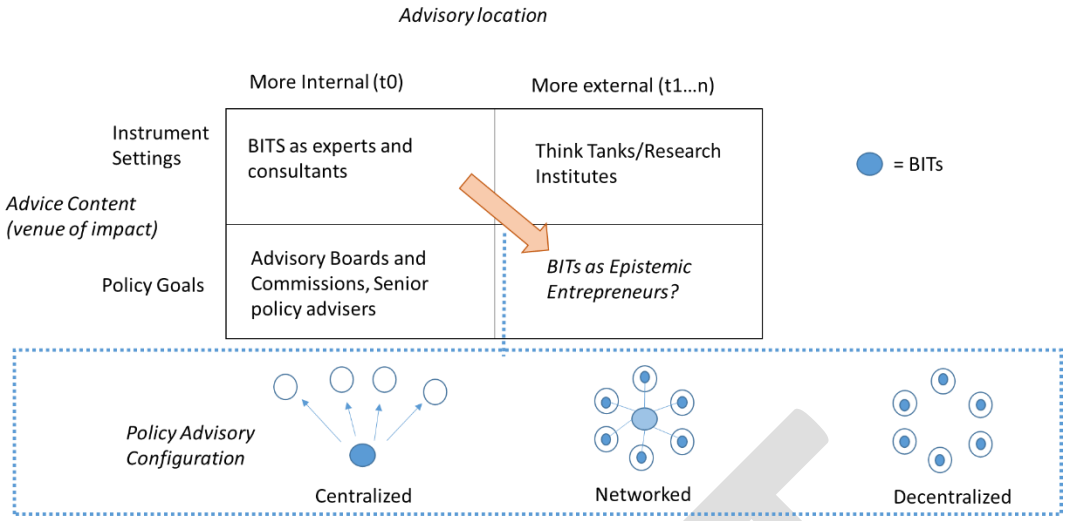

Figure 3. *Behavioral Insights Teams (BITs) in Policy Advisory Systems.*

The examples above allude to a scenario in which BITs are integrated in various formats, in a centralized, networked or decentralized way, however seem to have similar effects on policy making in the area of energy efficiency. Their integration in government is further rather dynamic in the sense that some remain centralized while a corporate counter-part is created to, for example, do behavioral research (France) while others started out as loose networks and have formed a central unit for collaboration and coordination within government (The Netherlands). This flexibility allows BITs to insert expertise into ongoing discussions and seize windows of opportunities in policymaking.

Focusing on the level of sway that BITs have on instrument level-change, eco-labels, as information-based instruments represent a class of policies that have a strong behavioral component and have been around far longer than nudges. While policy design is currently facing a behavioral 'turn', instruments like eco-labels provide a rich evidence base of BITs successfully refining or making the behavioral components of existing nodality-based tools more prominent. For example, this was the case in Germany, with the proposed modification of two energy labels. Furthermore, as the work of these behavioral experts expand beyond first-order changes to existing instruments, so does their cross-sectoral and cross-jurisdictional organizational reach. This expansion of the behavioral 'movement' has resulted in a reframing of broader policy goals affecting all-of-government administration (such as in the Netherlands and Germany), as well as the international branding of BITS over time as policy advisors who are able to influence policymaking even outside their jurisdiction of origin (as in the UK).

Within the theoretical discussion of what is known about policy advisory systems, BITs thus provide an interesting perspective. A conceptual addition to existing frameworks of policy advisory systems can be proposed (Figure 3) based on (1) the *content* of policy advice –whether at the level of minor modifications to the settings of existing instruments or at the policy level with a realignment of broader policy goals – and (2) the *location* of policy advice or the enabling environment of political support that it occupies– whether originating through the internal cooperation of government departments or progressively gaining outward mobility, not just as advisors but also as champions of the behavioral movement.

This exploration of policy advisory systems using the increasingly visible case of BITs points to several future research questions that can advance the theorization of what is known about the role of policy advice in policy design, especially from an agency perspective. Broadly, these fall into three categories. Firstly, there is a need to examine the major patterns of political support for BITs in different modes of governance to generally understand whether BITs signify a new form of policy advisory system within the policy making process. Secondly, a more empirical exploration is needed on the structure of BIT interactions with relevant departments (whether as consultants, stand-alone coordinating divisions or as specialists within every department) as depicted in Figure 3. And thirdly, and more conceptually, what does the emergence of BITs signal for policy advisory systems to be understood as independent variables of policy level change.

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