# What is behavioral in policy studies? How far has the discipline moved beyond traditional utilitarianism?

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**Abstract:**

Most early policy researchers aspired to the hallmarks of social science informed by the theoretical modelling of microeconomic utility. However, many now have come to accept that this kind of rationality may be in short supply in practice and that more careful study of social norms, irrationalities and collective action is required. This realization has led to a behavioural turn in policy theory and practice. Policy design, in particular, now addresses a much wider range of policy tools and is no longer as circumscribed by a priori adherence to utilitarian assumptions about policy behavior as it was in the past. There are two important implications of this behavioral turn: first, given that a large of set of incentives for behavior are not adequately captured by a utilitarian currency, the policy sciences need a more serious consideration of non-price and non-economic incentives. Second, and correspondingly, given this diversity in the types of incentives, there is greater uncertainty about the likelihood of success of policy designs. A move away from the traditional utilitarianism therefore requires a greater acceptance of the agnosticism that accompanies such uncertainty and a willingness to experiment with small scale pilots and other formulation techniques if the actual motivations behind policy compliance and effectiveness are to be understood.

**Overview: The Behavioral Turn in Policy Research**

If policy-making and policy-taking can be thought to be "rational", the policy sciences traditionally assumed that this meant "rationality" in a utilitarian sense, and typically modeled public behaviour as such. However more recent research into policy subjects and policy behaviour more generally has placed the study of informal institutions, norms, irrationalities and the motivations for collective action closer to the center of contemporary public policy research.

The number of behaviorally-oriented articles has been increasing in number and relevance, supporting the idea that there has been a shift of attention towards the design and consideration of behaviourally-inspired policy interventions and thinking. Recent reviews of behaviourally-inspired and oriented research in the policy field have indeed confirmed that a 'turn' towards this direction is well underway, although unevenly distributed across sectors and countries (Leong and Howlett, 2020).

This behavioral turn among not only policy scholars but also economic, administrative and other researchers has combined to break the long-held discursive hegemony notions that all policy behaviour is driven by cost-benefit calculations on the part of both policy-makers and policy takers. However, not all policy research, and not all behaviourally-oriented research, has made this turn and it is the argument of this paper that more, and more careful, research is required in this area in order for behavioural policy research to advance.

The paper sets out this problemat and its origins and suggests a deeper behavioural methodological and theoretical apparatus is needed to overcome the limits of a utilitarian understanding of the motivations of public policy behavior. It argues a wider recognition of non-economic incentives such as the fear of novelty, social norms, various forms of cognitive biases and pressures for conformity in policy behaviour is required if this to happen (Atran &

Norenzayan, 2004; Henrich, 2009; Kraft-Todd et al., 2018; Priest, 2006; Sosis & Alcorta, 2003; Sturgis & Allum, 2004). Second, and more importantly, it also argues such recognition requires greater acceptance of the lack of precision or the greater uncertainty in the use of policy tools, and a concomitant commitment to enhanced monitoring, learning and evaluation of policy efforts and outcomes than presently exists. In short, the behavioural turn highlights that policy-makers and scholars must be more prepared for wrong answers, or simply that there are no right ones, in their research and practices and build into policies the means to learn and correct mistakes (Leong and Howlett 2022).

**Implications of the Behavioral Turn for Policy Research**

The implications of a renewed focus on policy behavior for policy research and practice are many. Surveys have shown, for example, that in countries like the US and the UK and, to a lesser extent, others such as Singapore, Hong Kong and Canada, behavioral labs have become important actors working out public and target-group motivations and the nature of feasible policy interventions and designs (Wellstead et al., 2021). Among other things, many of these labs conduct policy experiments focusing directly on the need to test assumptions of policy responses and have come to form an important link between theory and practice in the policy process in these countries (Olejniczak et al., 2020). They influence policies on the ground everywhere from organ donations to climate change mitigation (Feitsma, 2018a; Gopalan and Pirog, 2017; John, 2013; Leggett, 2014; Sanders, Snijders, and Hallsworth, 2018; Wilkins, 2013).

This new behavioral focus has helped undermine some aspects of the existing policy sciences paradigm of policy-maker and policy-taker cost-benefit maximization. Unlike the earlier situation in the policy sciences, in an increasing number of other countries the

fundamental policy design problem for government is now seen not just to be, for example, a matter of calculating the range of prison sentences or fines and subsidies to levy in some policy situation in the effort to increase incentives and/or disincentives for desired behavior and outcomes. Rather the imperative is now to more thoroughly understand the actual behavioural basis on which compliance and expected behavioural outcomes are likely to occur, or not, and incorporate this knowledge into policy (Weaver, 2009). Policy design, in particular, now addresses a much wider range of policy tools than it traditionally did under the old paradigm and is no longer circumscribed as it was in the past by *a priori* adherence to unsubstantiated utilitarian assumptions about policy behavior which tended to promote and prioritize certain options, like subsidies or penalties.

However, many prominent studies and countries or governments remain rooted in older thinking around policy behaviour despite movement in the direction of this newer behavioral orientation (Ariely, 2010; Shafir, 2013). These legacies impede the incorporation of more profoundly behavioural policy theory and behaviourally-informed policy knowledge into policy practice. In fact, rather than acknowledging the greater uncertainty that accompanies the behavioural turn and the need for more careful policy formulation and decision-making, many instead think that the behavioral turn allows a stronger link between policy design and specific outcomes by more precisely specifying the needed policy tools and their calibrations in a given policy-making setting.


*The Utilitarian Roots of Modern Policy Studies*

The immediate aim of most public policy is to invoke in the 'targets' of government efforts the behavioural change needed for them to comply with government aims (Weaver, 2015). This is

done in order to secure better adherence of populations to government aims and ambitions. Examples include the promotion of public safety and security, or the provision of effective healthcare and social welfare.

This activity is inherently behavioural. Compliant target behaviour is expected to be achieved through the knowledge-informed deployment of governing resources in the form of specific combinations of substantive and procedural policy tools aimed at specific kinds of behaviour (Anderson, 1977; Baldwin, 1985). Desired changes can be large or small, and the expectation of compliance can be rapid or gradual. But in all cases, some changes in behaviour in a direction congruent with government aims is expected from the utilization of state resources.

In this sense policy behaviour is an ever-present and ongoing problem for governments because full compliance is neither perfect nor automatic. And why such compliance is, or is not, always forthcoming has always been a key question in the policy sciences (Feeley 1970; Mulford and Etzioni, 1978).

Despite its importance, however, research into the behavioural aspects of instrument deployment and policy-making in general has often been guided less by real world experience and empirics than by *a priori* assumptions about human cognition and decision-making. That is, since its origins in the 1950s much of policy research has been conducted under mainly economistic or utilitarian assumptions and presuppositions about the motivations and behaviour of policy targets and decision-makers (Stover and Brown, 1975). For example, many early works in the policy sciences simply asserted that policies should be designed and implemented by providing specific incentives and disincentives (often through taxes or subsidies or user fees and charges), which were expected to affect the cost and benefit calculations of specific policy actors in predictable ways (Stokey and Zeckhauser, 1978; Grabosky, 1995).

This way of thinking can be termed the *compliance-deterrence model* and it has been the dominant paradigm in policy research for decades. In this model, policy targets are assumed to act as simple rational utility maximizers (Howlett, 2018). The behavioural mechanism through which policy change was expected to operate in this model is hedonic – that is, through the application of psychological pleasure and pain in the form of policy tools providing rewards for preferred behavior and punishment for undesired activities (Nelson, 1977; Banfield, 1977).

In this way of thinking larger issues around motivation and compliance such as legitimation, trust, solidarity and other such issues are often ignored, as are the more micro-nuances of behaviours such as anchoring or biases. Utility calculations on the part of individual policy targets instead are said to be responsible for policy behavior and attention focused on the precise calibration of penalties and fines, with these set at such a level as to discourage or punish those who might seek to save money by evading compliance (Balch, 1980, Braithwaite and Braithwaite, 2001; Doern and Phidd, 1988).

This way of thinking, of course, *is* behavioural but is also not a very sophisticated or well-informed one, an aspect of the policy sciences which has been recognized for over a half century to be rooted more in ideology than careful empirical analysis (Tribe, 1972). Thus, for example, it has long been recognized that the traditional utilitarian presuppositions behind this model are difficult to sustain in practice (Shafir, Simonson, and Tversky, 1993). Empirical studies of compliance in areas such as taxation for instance, have always found that taxpayer behavior involves a normative component as well as a utilitarian one (May, 2004; Braithwaite, 2003). This component is clear, for example, in cases such as when taxes are withheld for reasons of conscience in times of war, or when they are felt to be unconstitutional or otherwise unethical or

inappropriate.  Nevertheless, such views continue to persist and influence thinking and activities in the discipline and in government.

*The Behavioural Turn: A New Understanding of Incentives*

Once it is recognized that even the most basic activities of governance such as collecting taxes involve  not just hedonic incentives, but also considerations such cognitive biases and the legality and normative appropriateness or legitimacy of government activity and rule enforcement (Hargreaves Heap, 2017; March and Olsen, 1989), then a more sophisticated, profound and practical behavioural public policy can emerge.

   This is what has occurred recently in what has been termed the 'behavioural turn' in the policy sciences (Leong and Howlett 2020). This behavioral turn has been very much concerned with these latter kinds of cases and with better understanding the reasons for the behavior actually evidenced by the targets of policy activity, and by policy-makers, rather than assuming them *ex ante*. This is true both of members of the public who comply as well as those who refuse.

    The recent insights of behavioral economic demonstrations of peoples' deviations from ideal-type models of rational behavior in their actual decision-making behavior have helped manifest this interest, but do so in only a limited way. Studies within the behavioural economics traditions, for example, such as those on risk aversion and various kinds of automatic or less deliberate behavior (System 1) by Kahneman and his colleagues (Kahneman, Knetsch and Thaler, 1991; Tversky and Kahneman, 1986) highlight deviations from pure utilitarian rationality in human decision-making of all kinds. There is no doubt such work has helped undermine the old paradigm of hedonic utilitarianism and usher in more and different kinds of behavioural

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analysis, including the creation of many of the policy labs and the behavioural turn alluded to above (Strassheim, 2021).

However, this way of thinking about public policy compliance and policy implementation remains nested within a generally utilitarian orientation towards policy-making and only goes so far towards undermining it.

This is the case, for example, with notions of policy 'nudging' (Thaler and Sunstein, 2009; Thaler et al., 2010) which, although questioning traditional utilitarian concepts such as the existence of perfect information and risk and benefit valuations in policy analysis and design, still relies on a logic of utilitarian calculation in its orientation towards target behaviour (Oliver 2015; Leggett 2014; Room 2013; John et al. 2009).

In the real policy world however, variation in target structure, motivation and compliance behaviour make policy design a more challenging activity than simply adding nudges to an existing policy mix. Understanding whether a proposed action is likely to trigger behaviour linked to 'affiliation' or 'conformity' with government wishes, or to go the other way instead (ie, non-compliance from outright disobedience to 'boomerang' effects encouraging the action they are aimed at discouraging) remains a critical but not well understood aspect of policy designs and designing (Cialdini and Goldstein 2004; Cialdini et al. 2006). Even behaviourally-inspired 'rules' of "semi-rational" economic calculations are not enough to capture all the considerations of cultural and psychological appropriateness which go into these kinds of behaviour (Knetsch, 2011; Koh, 2011).

Other works associated with the behavioural turn, however, do grapple with these subjects. For example, research on injunctive and descriptive norms (Kraft-Todd et al., 2018; Thomas et al., 2016) and their role in affecting behaviour relating to new and controversial

science - biotechnology in general (Coyle & Fairweather, 2005), genetically modified foods (Chen, 2018), and recycled water (Dolnicar & Schafer, 2009; Savchenko et al., 2019) – all have highlighted the need to better understand public behaviours in light of beliefs and attitudes towards new products and processes rather than within a compliance-deterrence framework.

The findings from these studies often highlight the limits to utilitarianism. For example, despite advantages in cost-effectiveness and energy efficiency, many studies indicate that the public is often sceptical or 'neophobic' about adopting new technologies. For instance, the 'Deficit Model' endorsed by many practitioners (Sturgis & Allum, 2004; Priest, 2006) holds that attitudes towards novel technologies stem largely from individual ignorance about their actual benefits and unfounded fears of possible risks. But in the case of recycled drinking water, for example, its unattractiveness can be attributed to a 'psychological repugnance' or 'profound discomfort', also referred to as the 'yuck factor' (Leong & Lebel, 2020; Marks et al., 2008; Schmidt, 2008), which transcends educational efforts concerning its safety and cleanliness. Many similar studies chronicle similar findings of behavior which does not follow utilitarian precepts in diverse settings such as the marketplace, risk regulation, the justice system, (Kraft-Todd et al., 2018; Majic, 2015; Rachlinski, 2011; Roth and Wang, 2020), public health (Mulderrig, 2017, 2018, 2019; Roth and Wang, 2020; Vannoni, 2019), hygiene (Grover et al., 2018; Tagat and Kapoor, 2018), food consumption (Campbell-Arvai, Arvai, and Kalof, 2014; Kallbekken and Sælen, 2013; Moberg et al., 2019) and environment and energy conservation (Costa and Kahn, 2013; Momsen and Stoer, 2014; Noonan, 2014).

Work in this direction is very promising and reinforces and supplements the findings found in more anecdotal or case study analyses which support more and better behavioural research in the field (Duesberg, Dhubháin, and O'Connor, 2014; Hofmann et al., 2014).

However,the thus far limited understanding of such behaviour means that policy makers will be less certain of outcomes from trying a new policy utilizing a non-utility-based concept than they might be from utilizing an older mode of thinking which, even if incorrect, may have generated a substantial amount of experiential learning. This is an aspect of the behavioural turn which should in itself be the subject of research and a source of caution in its application and pronouncements.


**Conclusion:**

The literature cited above illustrates the manner in which the policy sciences have embraced behavioural research and have begun to move beyond the simple utilitarian notions which have characterized the discipline for decades. At minimum there is ample evidence to show that there exist two analytically distinct types of incentives – economic and non-economic or normative incentives (Sanders et al., 2018) – and studies of policy design and policy effectiveness have begun to take the latter into account, but also to move beyond them into the examinations to subjects such as the cultural origins of policy beliefs and actions.

   While these efforts presage a significant change, and improvement, in policy thinking, several caveats remain concerning these efforts, however. The first is that a more or less purely hedonic compliance-deterrence approach may be still important in some areas of human activity and should not be dispensed with altogether but rather supplemented by more micro and macro behavioral insights.

   Second, it should also be recognized that while alternative perspectives and approaches are emerging only some have been able to move very far beyond more traditional approaches while others, like nudges, remain largely within the old paradigm and approach. Much more work

remains to be done before a more fully-fledged alternative and implementable perspective on policy behaviour can emerge.

And thirdly, both as this new understanding emerges, and even when it does so, it will remain important to approach policy behaviour with a much larger degree of humbleness, humility and caution than was often evidenced in the past. One prominent aspect of the old paradigm was its self-assurance and certainty, often calculated to within two decimal points of precision in terms of the kinds of fines and payments expected to achieve policy ends. In the brave new world of behavioural research, however, this is unlikely ever to be achieved and certainly not without detailed investigation and trials of possible strategies and the tools to achieve them. This will be a difficult transition to make in a discipline which has prided itself on its precision and relevance and may well lead to some legitimation problems of its own, at least in the short-term (Howlett and Jarvis 2021).

**Bibliography**

Alvin, E.R. & Wang, S.W. (2020). Popular repugnance contrasts with legal bans on controversial markets. *PNAS*, 117 (33). www.pnas.org/cgi/doi/10.1073/pnas.2005828117.

Anderson, Charles W. *Statecraft: An Introduction to Political Choice and Judgment*. New York: John Wiley and Sons, 1977.

Atran, S., & Norenzayan, A. (2004). Religion's evolutionary landscape: Counterintuition, commitment, compassion, communion. *Behavioral and Brain Sciences*, (27), 713–770.

Ariely, Dan. *Predictably Irrational, Revised and Expanded Edition: The Hidden Forces That Shape Our Decisions*. New York: Harper Perennial, 2010.

Balch, G.I. "The Stick, the Carrot, and Other Strategies: A Theoretical Analysis of Governmental Intervention." *Law and Policy Quarterly* 2, no. 1 (1980): 35–60.

Baldwin D (1985) *Economic Statecraft*. Princeton: Princeton University Press.

Banfield E (1977) Policy Science as Metaphysical Madness. In: Goldwin R (ed.) *Statesmanship and Bureaucracy*. Washington DC: American Enterprise Institute for Public Policy, pp. 1–35.

Braithwaite V and Braithwaite J (2001) An evolving compliance model for tax enforcement. In: Shover N and Wright J (eds) *Crimes of Privilege*. New York and Oxford: Oxford University Press, pp. 405–419.Braithwaite, V.A., ed. *Taxing Democracy: Understanding Tax Avoidance and Evasion*. Aldershot, Hants, England ; Burlington, VT, USA: Ashgate Pub Ltd, 2003.

Campbell-Arvai V, Arvai J and Kalof L (2014) Motivating Sustainable Food Choices: The Role of Nudges, Value Orientation, and Information Provision. *Environment and Behavior* 46(4): 453–475.

Chen, M.F. (2018). Social representations of genetically modified foods and public willingness to consume such foods in Taiwan. *Journal of the Science of Food and Agriculture* 98, 5428-5434. https://doi.org/10.1002/jsfa.9086

Cialdini, R. B., Demaine, L. J., Sagarin, B. J., Barrett, D. W., Rhoads, K., & Winter, P. L. (2006). Managing social norms for persuasive impact. *Social influence*, *1*(1), 3-15.

Cialdini, Robert B. and Noah J. Goldstein. "Social Influence: Compliance and Conformity." *Annual Review of Psychology*, 55, no. 1 (2004): 591–621.

Costa DL and Kahn ME (2013) Energy Conservation "Nudges" and Environmentalist Ideology: Evidence from a Randomized Residential Electricity Field Experiment. *Journal of the European Economic Association* 11(3): 680–702.

Coyle, F., & Fairweather, J. (2005). Space, time and nature: exploring the public reception of biotechnology in New Zealand. *Public Understanding of Science* 14,143–61. https://doi.org/10.1177/0963662505050110

Doern, G. Bruce, and Richard W. Phidd. 1988. Canadian Public Policy: Ideas, Structure, Process. Toronto, ON: Nelson.

Dolnicar, S,. & Schafer, A. (2009). Desalinated versus recycled water — public perceptions and profiles of the accepters. *Journal of Environmental Management* 90 (2), 888–900. https://doi.org/10.1016/j.jenvman.2008.02.003

Duesberg, Stefanie, Áine Ní Dhubháin and Deirdre O'Connor. "Assessing Policy Tools for Encouraging Farm Afforestation in Ireland." *Land Use Policy*, 38 (May 2014): 194–203.

Feeley, Malcolm. "Coercion and Compliance: A New Look at an Old Problem." *Law & Society Review*, 4, no. 4 (1 May 1970): 505–519.

Feitsma J (2018a) 'Rationalized incrementalism'. How behavior experts in government negotiate institutional logics. *Critical Policy Studies*.

Gopalan M and Pirog MA (2017) Applying Behavioral Insights in Policy Analysis: Recent Trends in the United States. *Policy Studies Journal* 45(S1): S82–S114.Grabosky, P. N. "Regulation by Reward: On the Use of Incentives as Regulatory Instruments." *Law Policy* 17, no. 3 (1995): 257–82.

Grover E, Hossain MK, Uddin S, et al. (2018) Comparing the behavioural impact of a nudge-based handwashing intervention to high-intensity hygiene education: a cluster-randomised

trial in rural Bangladesh. *Tropical medicine & international health: TM & IH* 23(1): 10–
25.

Hargreaves Heap S (2017) Behavioural public policy: the constitutional approach. *Behavioural Public Policy* 1(2): 252–265.

Henrich, J. (2009). The evolution of costly displays, cooperation and religion: Credibility enhancing displays and their implications for cultural evolution. *Evolution and human behavior*, 30(4), 244-260.

Hofmann E, Gangl K, Kirchler E, et al. (2014) Enhancing Tax Compliance through Coercive and Legitimate Power of Tax Authorities by Concurrently Diminishing or Facilitating Trust in Tax Authorities. *Law & Policy* 36(3): 290–313.

Howlett M (2018) Matching policy tools and their targets: beyond nudges and utility maximisation in policy design. *Policy and Politics* 46(1): 101–124.

Howlett, Michael, M. Ramesh, and Giliberto Capano. "Policy-Makers, Policy-Takers and Policy Tools: Dealing with Behavioural Issues in Policy Design." *Journal of Comparative Policy Analysis: Research and Practice* 22, no. 6 (November 1, 2020): 487–97.

Howlett, Michael, and Darryl Jarvis. "Policy Science beyond Self-Congratulatory Virtue Signalling: Matching Supply and Demand in the Scholarship, Pedagogy and Purpose of the Policy Enterprise." In *The Future of the Policy Sciences*, edited by Anis Brik and Leslie Pal, 51–69. Edward Elgar Publishing, 2021.

John, Peter, Graham Smith, and Gerry Stoker. "Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour." *The Political Quarterly* 80, no. 3 (July 1, 2009): 361–70.

John, Peter. "All Tools Are Informational Now: How Information and Persuasion Define the Tools of Government." *Policy & Politics* 41, no. 4 (October 1, 2013): 605–20.

Kahneman D, Knetsch JL and Thaler RH (1991) Anomalies: The Endowment Effect, Loss

   Aversion, and Status Quo Bias. *Journal of Economic Perspectives* 5(1): 193–206.

Kallbekken S and Sælen H (2013) 'Nudging' hotel guests to reduce food waste as a win–win

   environmental measure. *Economics Letters* 119(3): 325–327.

Knetsch, Jack. "Behavioural Economics, Policy Analysis and the Design of Regulatory Reform"

   in *Behavioural Economics and Policy Design*, edited by Donald Low, 161–182. Co-

   Published with Civil Service College Singapore, 2011.

Koh, Tsin Yen. "Key Ideas in Behavioural Economics – and What They Mean for Policy

   Design" in *Behavioural Economics and Policy Design*, edited by Donald Low, 17–34. Co-

   Published with Civil Service College Singapore, 2011.

Kraft-Todd, G. T., Bollinger, B., Gillingham, K., Lamp, S., & Rand, D. G. (2018). Credibility-

   enhancing displays promote the provision of non-normative public goods. *Nature*,

   563(7730), 245-248.

Leggett W (2014) The politics of behaviour change: nudge, neoliberalism and the state. *Policy

   and Politics* 42(1): 3–19.

Leong, C., & Howlett, M. (2020). Theorizing the behavioral state: Resolving the theory-practice

   paradox of policy sciences. *Public Policy and Administration*,

Leong, Ching, and Michael Howlett. "Policy Learning and the Mitigation of Policy Risks: Re-

   Thinking the Lessons of Policy Success and Failure." *Administration & Society*,

   forthcoming (2022).

Leong, C., Jarvis, D., Howlett, M., Migone, A. (2011). Controversial science-based technology

   public attitude formation and regulation in comparative perspective: The state construction

of policy alternatives in Asia. *Technology in society* 33, 128-136.

https://doi.org/10.1016/j.techsoc.2011.03.007

Leong, C., Lebel, L. (2020). Can conformity overcome the yuck factor? Explaining the choice
for recycled drinking water. *Journal of Cleaner Production* 242.

https://doi.org/10.1016/j.jclepro.2019.118196.

Majic S (2015) Implementing 'new' norms? Examining 'john school' policies in the United
States. *Critical Policy Studies* 9(3): 278–296.

March JG and Olsen JP (1989) *Rediscovering Institutions: The Organizational Basis of Politics*.
Free Press.

March, J. G., and J. P. Olsen. "The Logic of Appropriateness." Oslo: ARENA Working Paper,
2004.

Marks, J., Martin, B., & Zadoroznyj, M. (2008). How Australians order acceptance of recycled
water: national baseline data. *Journal of Sociology* 44 (1), 83-99.

https://doi.org/10.1177/1440783307085844

Martins, I.B.A., Oliveira, D., Rosenthal, A., Ares,G., & Deliza,R. (2019). Brazilian consumer's
perception of food processing technologies: A case study with fruit juice. *Food Research
International* 125. https://doi.org/10.1016/j.foodres.2019.108555.

May PJ (2004) Compliance Motivations: Affirmative and Negative Bases. *Law & Society
Review* 38(1): 41–68.

Moberg KR, Aall C, Dorner F, et al. (2019) Mobility, food and housing: responsibility individual
consumption and demand-side policies in European deep decarbonization pathways.
*Energy Efficiency* 12(2): 497–519.

Momsen K and Stoerk T (2014) From intention to action: Can nudges help consumers to choose renewable energy? *Energy Policy* 74(C): 376–382.

Mulderrig J (2017) Reframing obesity: a critical discourse analysis of the UK's first social marketing campaign. *Critical Policy Studies* 11(4): 455–476.

Mulderrig J (2018) Multimodal strategies of emotional governance: a critical analysis of 'nudge' tactics in health policy. *Critical Discourse Studies* 15(1): 39–67.

Mulderrig J (2019) The language of 'nudge' in health policy: pre-empting working class obesity through 'biopedagogy'. *Critical Policy Studies* 13(1): 101–121.

Mulford, C.L. and A. Etzioni. "Why They Don't Even When They Ought to: Implications of Compliance Theory for Policymakers" in *Policy Research*, edited by A. Etzioni, 47–62. Leiden: E.J. Brill, 1978.

Nelson, R. *The Moon and the Ghetto: An Assay on Public Policy Analysis*. Chicago: WW Norton, 1977.

Noonan DS (2014) Smoggy with a Chance of Altruism: The Effects of Ozone Alerts on Outdoor Recreation and Driving in Atlanta. *Policy Studies Journal* 42(1): 122–145.

Olejniczak, Karol, Sylwia Borkowska-Waszak, Anna Domaradzka-Widła, and Yaerin Park. "Policy Labs: The next Frontier of Policy Design and Evaluation?" *Policy & Politics* 48, no. 1 (January 1, 2020): 89–110.

Oliver, Adam. "Nudging, Shoving, and Budging: Behavioural Economic-Informed Policy." *Public Administration*, 2015

Priest, H.S. (2006). The public opinion climate for gene technologies in Canada and the United States: competing voices, contrasting frames. *Public Understanding of Science* 15, 55–71. https://doi.org/10.1177/0963662506052889

Rachlinski JJ (2011) The Psychological Foundations of Behavioral Law and Economics. *University of Illinois Law Review* 5: 1675–1696.

Room, Graham. "Agile Policy on Complex Terrains – Nudge or Nuzzle?" 2 October 2013. http://www.horizons.gc.ca/eng/content/agile-policy-complex-terrains-%E2%80%93-nudge-or-nuzzle (accessed 10 January 2019).

Sanders M, Snijders V and Hallsworth M (2018) Behavioural science and policy: where are we now and where are we going? *Behavioural Public Policy* 2(2): 144–167.

Savchenko, O.M., Kecinski, M., Li, T., & Messer, K.D. (2019). Reclaimed water and food production: Cautionary tales from consumer research. *Environmental Research* 170, 320-331, https://doi.org/10.1016/j.envres.2018.12.051.

Schmidt, C.W. (2008). The yuck factor: when disgust meets discovery. *Environmental Health Perspectives*116 (12), 525-527. https://doi.org/10.1289/ehp.116-a524

Shafir E, Simonson I and Tversky A (1993) Reason-based choice. *Cognition* 49(1): 11–36.

Shafir, Eldar, ed. *The Behavioral Foundations of Public Policy*. Princeton: Princeton University Press, 2013.

Sosis, R., & Alcorta, C. (2003). Signaling, solidarity, and the sacred: The evolution of religious behavior. *Evolutionary Anthropology*, 12(6), 264–274.

Stokey, E., and R. Zeckhauser. *A Primer for Policy Analysis*. New York: W.W. Norton, 1978.

Stover, Robert V. and Don W. Brown, "Understanding Compliance and Noncompliance with Law: The Contributions of Utility Theory." *Social Science Quarterly*, 56, no. 3 (1 December 1975): 363–375.

Straßheim, Holger. "Who Are Behavioural Public Policy Experts and How Are They Organised Globally?" *Policy & Politics* 49, no. 1 (January 1, 2021): 69–86.

Sturgis, P., & Allum, N. (2004). Science in society: re-evaluating the deficit model of public attitudes. *Public Understanding of Science* 13(1), 55–74. https://doi.org/10.1177/0963662504042690

Tagat A and Kapoor H (2018) "Sacred nudging" and sanitation decisions in India. *India Review* 17(3): 301–319.

Thaler RH and Sunstein CR (2009) *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Nudge: Improving decisions about health, wealth, and happiness. New Haven, CT, US: Yale University Press.

Thaler, Richard H., Cass R. Sunstein, and John P. Balz. "Choice Architecture." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, April 2, 2010. http://papers.ssrn.com/abstract=1583509.

Thomas AS, Milfont TL and Gavin MC (2016) A New Approach to Identifying the Drivers of Regulation Compliance Using Multivariate Behavioural Models. *PLOS ONE* 11(10):e0163868.

Tribe LH (1972) Policy Science: Analysis or Ideology? *Philosophy and Public Affairs* 2(1): 66–110.

Tversky A and Kahneman D (1986) Rational Choice and the Framing of Decisions. *The Journal of Business* 59(4): 251–278.

Vannoni M (2019) A Behavioral Theory of Policy Feedback in Tobacco Control: Evidence From a Difference-In-Difference-In-Difference Study. *Policy Studies Journal* 47(2): 353–371.

Weaver, Kent. "Target Compliance: The Final Frontier of Policy Implementation." Washington DC: Brookings Institution, 2009. http://www.brookings.edu/research/papers/2009/09/30-compliance-weaver.

Weaver, R. Kent. "Getting People to Behave: Research Lessons for Policy Makers." *Public Administration Review*, 2015

Wellstead, Adam M., Anat Gofen, and Angie Carter. "Policy Innovation Lab Scholarship: Past, Present, and the Future – Introduction to the Special Issue on Policy Innovation Labs." *Policy Design and Practice* 4, no. 2 (April 3, 2021): 193–211.

Wilkins A (2013) Libertarian paternalism: policy and everyday translations of the rational and the emotional. *Critical Policy Studies* 7(4): 395–406.

Woo, J. J., M. Ramesh, and M. Howlett. "Legitimation Capacity: System-Level Resources and Political Skills in Public Policy." *Policy and Society*, 2015.