Running Title: Disproportionate Policy Responses

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March, 2016

Word count (all inclusive): 10170

Summary

Disproportionate policy response is understood to be a lack of "fit" or balance between the costs of a public policy and the benefits that are derived from this policy, and between policy ends and means. The study of this phenomenon and its two anchor concepts, namely, policy over- and underreaction, is fairly nascent. The latest developments in the study of disproportionate state activity are conceptual in nature and include a dimensionalization of policy over- and underreaction and an elaboration of the distinction between passive and proactive policy overreaction, the distinction between policy over- and underreaction rhetoric and doctrine, and the embeddedness of disproportionate policy response in context. These issues are fundamental to developing understanding of the formulation, implementation and evaluation of disproportionate policy response. They are also valuable to those who want to understand the processes through which policy over- and underreaction occur, and are of considerable interest to practitioners who want to better understand how to manage disproportionate policy responses more effectively.

Disproportionate policy response is an anomaly which, in addition to its rarity, poses methodological challenges because it is both context-sensitive and has a problematic counterfactual (i.e., proportionate policy response). To probe research questions related to the topic at hand, disproportionate policy response can be measured as individuals' perceptions of what they think about the proportionality of policy. Alternatively, scholars may employ vignette survey experiments. Policy over- and underreaction can also be measured by subjective evaluations over time combined with cost-benefit analysis and by a comparison of policy outcomes with (national or international) standards developed by experts. Scholars may also undertake experimental

manipulation using risk unfolding over time, combined with varying types of warnings.

The study of disproportionate policy response is a gateway to some of the most significant aspects of public policy. Global and domestic threats coupled with relatively skeptical publics about politicians and political institutions, and rising negativity in democratic politics imply that policy overshooting is increasingly required for the public to perceive policy action as sufficient and politicians as competent, at least in the short-term. Not only has disproportionate policy response been a focal point for political actors seeking decisive and swift policy change in times of real or manufactured crisis or no change at all, but such action has time and time again also made a dramatic impact upon the direction and the character of policy and politics. So far the literature on policy change has not responded to the emergence of the stream of research aimed at understanding the phenomenon of disproportionate policy response, but a robust research agenda awaits those answering this article's call for action.

Keywords: policy overreaction, policy underreaction, risk, policy change, context

Introduction

The study of disproportionate policy response and its two anchor concepts, namely, policy over- and underreaction, is fairly nascent. Initial studies have been motivated by the punctuated equilibrium theory which suggests that policy responses will oscillate between periods of underreaction to the flow of information coming from the environment into the system, and overreaction due to disproportionate information processing (Jones and Baumgartner 2005a). Although this intuition appears to be broadly accepted and has generated a large body of research on agenda setting, little advance has been recorded so far with regard to disproportionate state activity and how it affects the public. More recently, however, scholars have begun to pay attention to “too much” and “too soon” patterns of state activity, as well as patterns of “too little” and “too late” (Walker and Malici 2011). Collectively, this work set the boundaries of discussions about public policies in a way that includes the patterns of policy over- and underreaction and the factors that lead to their sustainment over an extended period of time.

In this chapter, I provide a review of research addressing disproportionate policy response, and add some conceptual nuance in describing the distinction between passive and proactive policy overreaction, as well as the embeddedness of disproportionate policy response in context. Disproportionate policy response is understood to be a lack of "fit" or balance between the costs of a public policy and the benefits that are derived from this policy, and between policy ends and means. Whereas proportionality is easily understood as a standard that requires prefect balance between policy costs and benefits, as well as between policy ends and means, disproportionate policy response violates this standard. My aim in this chapter is to introduce the reader to the latest developments in the study of

disproportionate state activity and to do so by being explicit about its two anchor concepts and cognizant of how these concepts compare with related ones, for example, of over- and underinvestment. These developments are conceptual in nature and involve abstraction from reality rather than from other models. So they all connect with, rather than lose sight of reality. They inform the literature with respect to how disproportionate policy response is designed, implemented and evaluated, but also highlight the need for a clear understanding of what we mean when we study disproportionate policy response and when we claim this area is important. These issues are fundamental to developing theoretical and empirical understanding of the formulation, implementation and evaluation of disproportionate policy response. They are also valuable to those who want to understand the processes through which policy over- and underreaction occur, and are of considerable interest to practitioners who want to better understand how to manage disproportionate policy responses more effectively.

The paper begins with an intriguing event that has triggered my interest in conceptualizing policy over- and underreaction. The first section briefly elaborates on the response of Prime Minister Benjamin Netanyahu to the Mount Carmel fire, which highlights a unique type of policy overreaction, namely preemptive policy overreaction. The second section introduces the definitional grounds with regard to policy over- and underreaction. The third section introduces belief-based conceptualizations of policy overreaction, and the fourth discusses a potential preference-based conceptualization and introduces the distinction between a passive and a proactive mode of policy overreaction. The fifth section introduces various types of policy underreaction, and the sixth, the embeddedness of disproportionate policy response in context. The seventh section

focuses on measurement issues, and the final section concludes by proposing directions for future research.

Challenging Incrementalism

Perhaps for too long, the main challenge to incrementalism, which fosters proportionality in public policy when policy problems change gradually (e.g., Lindblom, 1959), came from attempts to explain patterns of attention, measured in terms of the kind of issues politicians and other policy actors focus upon, and budgetary expenditures over time. Most notable is the aforementioned policy oscillation insight (Jones and Baumgartner 2005a). The reasons for the emergence of periods of shifting attention include the bounded nature of human activity (Jones 2003); exogenous shocks (Breuing 2011; Jones and Baumgartner 2012; Jones et al. 2013); the slow build-up of policy problems that require intense attention (Jones and Baumgartner 2005a), and the framing of issues by policy entrepreneurs (Baumgartner and Jones 1993; Jones and Baumgartner 2005a). However perceptive this insight has been, it provides little nuance regarding what the government is actually doing and how it affects the public (Dowding, Hindmoor and Martin 2015).

Insofar as disproportionate state activity is concerned, some studies on British government claim that governments over-respond to crises and create policy disasters (Butler, Adonis and Travers 1994; Moran 2003; Dunleavy 1995; Hood 1994; Finer 1975). Other studies have coined valuable terms. Hogwood and Peters (1985) have devised the terms *over-steering*, which refers to "moving back past the correct path to another set of mistakes in the opposite direction" (p. 83); *over-targeting*, which refers to

"[t]he use of as many instruments as there are objectives" (p. 167), and *overinstrumenting*, which refers to a case in which "many instruments all target the same client group or objective" (pp. 167–8). And Howlett and Achim (2016) have referred to *under-design*, which occurs when sub-optimal designs are adopted, and to *over-design*, which emerge when "the reverse occurs and resources are wasted in 'over engineering' a design vis à vis the significance of the problem" (p. 5). However, no attempt has been made to bring definitional clarity to these terms and integrate them in an analytical framework of disproportionate policy response.

The main reason for the little attention devoted to disproportionate policy response probably lies in an impression among policy scholars that policy over- and underreaction are policy mistakes; policies not carefully thought out; policies not carefully implemented; policies based on strategic misperceptions; policies that are bound to fail; policies that provide inferior solutions to recognized economic, social and other problems, and policies that are derived from policymakers who are driven by cognitive biases and emotions. For example, U.S. Presidents' foreign policy mistakes were categorized into "too much" policy, which occurs following a mistake of commission in the diagnosis stage of decision-making, and policy that is implemented "too soon", which is the result of a mistake of omission in the prescription stage of decision-making (Walker and Malici 2011). Another example is the new policy design paradigm (Howlett 2014), which revolves around the notion of 'adaptive policy-making' (Hoffman 2011) and is premised on the need "[...] to cope with the risk of under-investing and over-investing (or wrongly investing) in future policies" (Walker et al. 2010, 922). Further, the study of disproportionate policy response is considered by many policy scholars as an

academic minefield because it has problematic counterfactual (i.e., proportionate policy response) and because of difficulties involved in measuring proportionality in public policy. It is therefore no surprise that policy scholars have largely ignored the study of this phenomenon.

My interest in this area emerged coincidentally following a puzzling observation ─ the response of Prime Minister Benjamin Netanyahu to the Mount Carmel fire ─ which highlighted the characteristics of preemptive policy overreaction, and gave me an understanding that it may be only one among many types of policy overreactions. Let me briefly describe this event, the insight it generated and the process of theorizing it initiated.

On December 2010, the biggest and deadliest fire in Israel's history broke out on Mount Carmel. Approximately 1500 ill-equipped firefighters were called on to fight the forest fire. Once the government had been informed that there was no firefighting material and equipment, government officials, including Prime Minister Benjamin Netanyahu, called on other countries to help assist in firefighting efforts. Consequently, some 30 firefighting aircraft and three helicopters from 15 countries arrived to aid forces on the ground. Soon afterward, the Israeli government decided to enlist the services of the world's largest fire-fighting aircraft. The "Evergreen" Boeing 747 supertanker, which was brought in from the United States, was hailed by government officials and the Israeli press as the ultimate firefighting measure, even though by the time the supertanker had arrived, three days into the fire, the blaze was already waning (Haaretz Service 2010).

With almost 10,000 acres of forest, farmland, and homes devoured by the fire, and 42 people dead, the Israeli government utilized and encouraged moment-by-moment

news coverage of the supertanker, from its recruitment and arrival to its first day on the job. It seemed to me at that time that there was a concerted attempt by Prime Minister Netanyahu to redirect the public's attention away from the continuing fire and the damage it was causing and towards the spectacular efforts he was making to acquire what was being billed as the ultimate firefighting measure (Ravid 2010; Haaretz Editorial 2011). The supertanker itself was publicized to such a degree that while the aircraft was waiting at Ben Gurion airport after landing, news outlets sent crews to film the Prime Minister visiting the plane and then ran stories that focused the news on the plane itself, rather than on the continuing fire (Katz 2010). Even when news stories began to publicize the exorbitant price estimates for the use of the supertanker, which was suggested to be around $200,000 per hour of operation (Katz 2010), the expense was used to illustrate the Prime Minister's willingness to go to any lengths in order to extinguish the fire quickly and effectively, rather than as an unnecessary and frivolous allocation of public resources.

This event immediately turned my attention to the phenomenon of policy overreaction. I soon discovered that economists, psychologists and political scientists have devoted a great deal of attention to the emergence of overreaction. A large body of laboratory research has shown that people do not exhibit the perfect rationality that economists commonly assume (Simon 1982), and that many of their intuitive predictions are governed by heuristics, or rules of thumb (e.g., Tversky and Kahneman 1974). Kahneman and Tversky (1973), for example, have proposed that the *representativeness heuristic,* which refers to judgments based on stereotypes, leads to overreaction. And Sunstein (2002) has suggested that public overreaction to highly politicized, low-

probability risks could be explained by *probability neglect*, which occurs when people focus on the worst possible scenario. The strong emotions that are then triggered lead to the failure to inquire into the probability that the worst case will occur. The finding that overreaction is driven, amongst other things, by cognitive factors, has also surfaced in the political science literature, and more specifically in the agenda setting arena. Jones and Baumgartner (2005a) have argued that bounded rationality leads to disproportionate information-processing whereby "signals are ignored, responses are delayed, and ineffective strategies are deployed" (p. 17). Focusing on selective attention ─ "[…] far and away the most important cognitive limitation that influences political choice" (p. 16) ─ they claimed that "[e]motion is the gateway to selective attention: when emotion is roused, attention follows" (p. 16). Their model of how information is used thus leads to a sequence of delay followed by overreaction. "Once evidence or pressure accumulates indicating that some new dimension observed deserved more attention, the system often overresponds to this in turn" (p. 17).

Focusing on the realm of public policy, the following question was raised: If, as the aforementioned streams have indicated, an assessment of information is not particularly simple, and the path from evidence to public action is by no means direct or smooth (Angell 1996, 1513), why should we assume that there is only one mode of policy overreaction? The fact that the concept of overreaction is defined in terms of another concept ─ action, that is, an authoritative activity that emerges around a policy problem ─ further emphasizes the need to "cover" more thoroughly the terminological and empirical terrain. The concept of overreaction may contain a number of "faces", and deserves therefore an attempt to achieve a higher degree of adequacy (Gerring 2001). I

therefore think that there is a need to move towards concrete, if not actually observational, concept of policy overreaction (and, of course, policy underreaction). But before embarking upon this challenge, definitional clarity has to be obtained.

The Definitional Ground

In an attempt to infuse the concept of policy over- and underreaction with a robust conceptual identity, that is, one that goes beyond the analytical reach of the terms "too much" and "too soon" or "too little" and "too late" (Walker and Malici 2011), a few concepts have recently been introduced. *Policy overreactions* "are policies that impose objective and/or perceived social costs without producing offsetting objective and/or perceived benefits" (Maor 2012, 235). Costs and benefits may be incurred by policymakers, target populations and/or the general public, depending on whose assessment of policy overreaction, or its lack thereof, is sought by the researcher. One manifestation of policy overreaction is the clear-cut concept of *policy overinvestment*, which occurs "when government overinvests in a single policy instrument beyond its instrumental value in achieving a policy goal […] (Jones, Thomas, and Wolfe 2014, 149). A similar distinction applies in the case of *policy underreaction*, which refers to "systematically slow and/or insufficient response by policymakers to increased risk or opportunity, or no response at all" (Maor 2014a, 426). This implies that it is "a policy whose actual net utility […] is smaller than a counterfactual net utility […]" (Maor 2014a, 428). Adapted from Jones, Thomas and Wolfe (2014), *policy underinvestment* occurs when policymakers underinvest in a single policy instrument below its instrumental value in achieving a policy goal. Whereas the definitions of policy over-and

underreaction appeal to considerations of public interest broadly defined, including, for example, economic efficiency, social welfare, social justice, sustainability and individual well-being, the definitions of policy over- and underinvestment, although easily measurable and tractable, often appeals to narrow considerations of economic efficiency.

Examples of policy over- and underreaction can be gauged following a dilemma faced by policymakers regulating a financial system comprised of a diverse set of financial institutions that provide credit and deposit-like services to households and businesses as well as facilitating financial transactions across the financial system (e.g., banks, insurance companies, pension funds, financial companies, and the like). From the perspective of financial stability, policymakers may limit speculation in a particular area (e.g., housing market) by imposing restrictions in that particular area. However, doing so may lead financial institutions to adapt to these regulatory changes by relocating particular financial activities in order to bypass the restrictions. Alternatively, policymakers fearful of a financial crisis quickly spreading from a particular area to others because of interconnections, may apply a systemic policy tool, such as an increase in the interest rate, to maintain the stability of the financial system. Increasing the interest rate, when no evidence exists of salient (known) risk to the stability of the financial system – validated by tools such as an annual stress test for banks – and no financial crisis emerges, falls under the category of policy overreaction. An increase in the interest rate in order to curb rapidly escalating risk falls under the category of proportionate response. Regulatory inaction following rapidly escalating risk which leads to systemic financial crisis falls under the category of policy underreaction.

One of the great challenges in public policy is to understand what the government is actually doing and how it affects the public (Dowding, Hindmoor and Martin 2015). Disproportionate policy response sits squarely within this category and so is the design of disproportionate policy options. A recent advance has distinguished between two types of policy overreaction options, namely, rhetoric and doctrine (Maor 2016a). *Policy overreaction rhetoric* refers to "arguments employed by policymakers to reach and persuade the target populations of the former's commitment to achieve their policy goal no matter what the costs are" (p. 7). *Policy overreaction doctrine* refers to "a coherent set of policy principles, or a rule encapsulated by a set of principles, for guiding policymakers in achieving a policy goal no matter what the costs are" (p. 7). *Policy underreaction rhetoric* refers to "arguments employed by policymakers to reach and persuade the target populations of the former's conditional commitment to respond to a policy problem" (p. 8). *Policy underreaction doctrine* refers to "a coherent set of policy principles or a rule encapsulated by a set of principles, for guiding policymakers in conditionally achieving a policy goal" (p. 8). These generic types of policy options allow researchers to analyze the formulation of off-the-shelf and specifically-designed options which are perceived by policymakers to be disproportionate policy options, and are intended, once implemented, to deliver precisely this type of policy outcome (Maor 2016a; forthcoming).

Different disproportionate policy responses have different social, economic and other substantive effects, as well as varied cognitive and emotional effects. What the government is actually doing affects markets, people, other countries, and so on. A focus on policy over- and underreaction, especially in the run-up and during rare, high-impact events, provides opportunities to assess the formation and implementation of disproportionate policy response. This is because policy responses during such events,

whether real or manufactured, revolve primarily around expectation management. For example, in a policy system already in the throes of a broad panic and public fears – manifested by wholesale withdrawal of deposits that could, absent government intervention, destroy otherwise solvent banks, the "[…] use of overwhelming force to quell panics […]" (Geithner 2014, 397) may be required. But before researchers engage in empirical examination, some form of a conceptual or mental map should be in place.

The approaches that may be employed to advance a better understanding of the formation and implementation of policy over- and underreaction can be categorized based on whether they focus on policymakers' beliefs (e.g., the representativeness heuristics; overconfidence) or on policymakers' preferences. In the next section, I briefly summarize a belief-based conceptualization of policy over-and underreaction.

Belief-Based Conceptualization of Policy Over- and Underreaction

As noted, overreaction is commonly viewed as arising from individual's cognitive and emotional shortcomings. Drawing on robust findings from these fields of research, Maor (2012) has posed a question regarding the likely policy outcomes in situations whereby policy-makers believe that they are more talented and competent than they actually are, have more control over the event at hand than they in fact do, have greater chances of success in solving the policy problems than they genuinely do, and perceive the information that they possess as more precise than it actually is (Kahneman, 2011). Based on two key dimensions of policy overreaction, namely (i) the effects of positive and negative events, and (ii) the effects of overestimation and accurate estimation of

information, Maor (2012) has identified four distinct modes of policy overreaction that reflect differences in the nature of implemented policy.

Pre-emptive overreaction emerges when policymakers overestimate information regarding a negative event (e.g., a misperception that a risk poses an imminent threat). A classic example is the slaughter of around five million animals for precautionary reasons following the Bovine Spongiform Encephalopathy (BSE) crisis in the UK. *Regulatory overreaction* occurs when policy-makers accurately estimate information regarding a negative event (e.g., a realistic recognition of the scope and intensity of a threat, and of the urgent need to gather information regarding the threat). An example is the US government response to 9/11. *"Calibrated" overreaction* emerges when policy-makers overestimate information regarding a positive event (e.g., a misperception that a new policy idea, model or theory precisely mimics some particular parameters of reality). An example is the implementation of radical, far-reaching programs of public management reforms in New Zealand during the late 1980s and 1990s. And *nearly-mandatory overreaction* occurs when policy-makers accurately estimate information regarding a positive event (e.g., a realistic recognition regarding the deeply contested nature of a scientific innovation and the derived implications in terms of the speedy implementation of policy and the aggressive information-gathering in light of a potential public backlash). An example is the school-based human papillomavirus (HPV) vaccination in the UK, Canada and Australia (Maor 2012). Surely there are many other types of policy overreactions, but Maor (2012) has addressed the ones that may be derived from policymakers' overconfidence.

Regarding policy underreaction, the emergence of this phenomenon has attracted scholarly attention from a diverse set of disciplines, including economics, psychology and political science (e.g., Jones and Baumgartner, 2005b; Tversky and Kahneman, 1973; Slovic, 2007, 2010). Studies have further shown that individuals underestimate the cumulative effect of events (Bar-Hillel, 1973, Cohen, Chesnick, and Haran 1972). Surprisingly, there has been little diffusion of this research into the study of public policy. Notable exceptions are Jones and Baumgartner (2005b), Walker and Malici (2011), and Bazerman and Watkins (2008), but these studies do not delve into the nuances of policy underreaction.

The belief-based conceptualization that has provided the most explicit discussion of policy underreaction revolves around two key elements of decision making in situations of risk unfolding over time: (1) policymakers' underestimation and accurate estimation of increased risks and (2) intra- and extra-organizational sources of policy persistence (Maor 2014a). Based on these dimensions, four distinct modes of policy underreaction were identified which reflect differences in the nature of implemented policy.

Directed underreaction "emerges when policymakers accurately estimate increased risk but are predominantly influenced by intra-organizational sources of policy persistence. The subsequent policy comprises (long/short sequences of) self-initiated small/partial adjustments in the same direction" (Maor 2014a, 426). An example is the 2010 Turkish Mavi Marmara incident outside Israel's territorial waters during the preparation of which there had been an accurate estimation by the Israeli Army Chief of Staff that there would be a violent response from the flotilla passengers, coupled with

disorganized decision making processes in government as well as an organizational culture that accorded great weight to the military as opposed to other response options. *Forced underreaction* "emerges when policymakers accurately estimate increased risk but view the policy at hand as primarily subject to extra-organizational constraints, such as the expected response from other players with a dominant position in the relevant system. The policy implemented revolves around policymakers' giving in to, or being forced to adapt to or comply with external constraints, but still being able to initiate small policy adjustments over the dominant dimension of risk" (Maor 2014a, 426). An example is the Israeli decision not to launch a preemptive attack an hour before the 1973 Yom Kippur War, fearing the U.S. response to such a move which would have denied military and diplomatic support to Israel during the war, and the resulting call-up of the reserves instead. *Symbolic underreaction* "emerges when policymakers underestimate increased risk (i.e., do not recognize the need for a substantial policy change) and are predominantly influenced by intraorganizational sources for policy persistence, such as organizational and cultural imperatives, leading to ''tunnel vision'' and routine modes of thought. The policy implemented involves willingness to express full support for the issue at hand and engagement in a disingenuous or surface-level attempt to change policy" (Maor 2014a, 426). An example is the response of the US Securities and Exchange Commission to the 2007-2008 financial crisis. And *no action* "emerges when policymakers underestimate increased risk and are predominantly influenced by extra-organizational constraints" (Maor 2014a, 426). An example is the Swedish government's underestimation of the risk faced by Swedes who were caught up in the 2004 Asian

tsunami and remained stranded in Thailand and elsewhere, and especially the risk faced by those in need of medical treatment.

Each of the aforementioned types of policy underreaction may be framed in ways that hide its true meaning. For example, "inaction may be framed in ways ranging from 'astute politics' to 'dereliction of responsibilities'" (McConnell, 2012, p. 2). This "presentation strategy" (Hood, 2011) is tied to the fact that it is much harder to blame policymakers for doing nothing than for doing something.

Having brought some clarity to the core constructs of disproportionate policy response from a belief-based perspective, in the next section I bring a bit more breathing room to the same constructs, but from another perspective.

Preference-Based Conceptualization of Policy Over- and Underreaction

Although there are currently no preference-based conceptualizations of policy over- and underreaction, future analytical frameworks may be based on insights generated in the area of behavioral finance. One theory, for example, focuses on reduced risk aversion following earlier gains from investment decisions as the reason underlying investors' decisions to buy an asset more enthusiastically, thereby pushing its price up even further (Thaler and Johnson 1990; Barberis, Huang, and Santos 2001). One could easily think of cases where policymakers' satisfaction with policy outcomes as well as with the derived political benefits, leads them to become less risk averse. Having experienced policy success, they are less concerned about future policy failures because they assume the impact of such failures can be cushioned by the prior policy-specific and political gains. This, in turn, leads them to adopt riskier policies. A case in point is the long period of

profitable growth in banking in the United States since the 1990s and the success of the banks to withstand the bursting of the dotcom bubble. Against this background, universal home ownership was expanded, among others, by banks which purchased subprime residential mortgage-backed securities, and consequently, a crisis-prone financial environment was created. Risk-averse policymakers could have pushed forward regulatory changes – such as a significant increase in capital requirements in the commercial and shadow banking systems coupled with tightening regulatory enforcement, in order to ensure that banks solely securitized mortgages that involved creditworthy borrowers – in order to avert the 2007-2008 financial crisis. However, the policy response chosen was no action.

However insightful the aforementioned conceptualization may be when fully developed, the idea in this section is not to construct a new conceptualization but rather to add some nuances to potential preference-based conceptualization. Focusing on the deliberate design of policy options which are perceived by policymakers as disproportionate, the need emerges to distinguish amongst different types of this phenomenon in order to increase analytical sharpness. A useful distinction with regard to the design of policy overreaction options can be drawn between passive and proactive use of overwhelming government force (Maor 2016a; Maor forthcoming). The balance between passive and proactive use of government force is a major concern for policymakers wishing to overreact, for example, in order to quell public fears and panic during a real or manufactured crisis requiring drastic measures or in order to cognitively and emotionally overwhelm target populations. Let me elaborate on each of the aforementioned modes.

In a *passive mode of policy overreaction*, the government provides "resources in the window" for individuals and institutions in need. In a systemic banking crisis, for example, the government may lend freely to banks in distress and to other weak financial institutions. In financial terms, the government may follow Bagehot's (1873) rule that in a crisis the central bank should lend freely, at a high rate, and on good collateral. During the 2007-2008 financial crisis, for example, the Federal Reserve followed Bagehot's rule (Bernanke 2014a, b), and so did the Bank of England (King 2010) and the European Central Bank (Draghi 2013). In the passive mode, therefore, the government relies on individuals and/or institutions in dire need to come forward and seek assistance, and operates by every possible means and modes to provide this assistance.

An integral aspect of the passive use of overwhelming government force is the public visibility of this strategy. In March 2014, for example, depositors in the city of Yancheng began to line up at the doors of the Jiangsu Sheyang Rural Commercial Bank after rumors spread that the bank had failed to honor a demand for a 200,000 yuan withdrawal (Chang 2014). Soon the panic had spread to branches of the bank in at least three other localities and to the nearby bank. Chinese policymakers stopped the panic by stacking cash high behind teller windows to instill confidence, keeping branches open around the clock to permit withdrawals, and by detaining the "rumor-monger" thought to have triggered the three-day panic (Chang 2014). These measures provided assurance for depositors that their money was safe.

To facilitate the passive use of overwhelming government force, government may also delay the eligibility test of those seeking assistance until the crisis is over (e.g., relief to families affected by natural and manmade disasters) and/or suppress information

regarding the identities of weak individuals or institutions seeking government assistance in order to overcome their reluctance to do so because of fears that others will view this as a sign of weakness. During the 2007-2008 financial crisis, for example, a mechanism (the Term Auction Facility) aimed at assisting the major banks was designed in the U.S. specifically for the purpose of avoiding stigma by using auctions, thereby making loans in secret, without publicly revealing borrowers' identities (Geithner 2014; Gorton 2014).

A more *proactive mode of policy overreaction* includes the design of more complex programs or methods which allow policymakers to be selective in the use of overwhelming policy response. Selectivity is gained by designing a mechanism that separates the fundamentally healthy institutions or individuals from the terminally ill or weak, that is transparent in its assumptions and methods, that reveals the information sought, thus reducing uncertainty about the true situation of the relevant individual or institution, and that is accompanied by a government commitment to make resources available through a designated program, to any individual or institution unable to meet their needs independently.

Whether or not this type of response falls under the category of proportionate response or is an overreaction depends on whether the threshold separating the fundamentally healthy institutions or individuals from the terminally ill or weak is constructed with relatively narrow margins of safety, or, on the other hand, with large or very large margins of safety. It is reasonable to suggest that during a crisis involving panic and public fears, the government will deliberately select a threshold with large or very large margins of safety so that all those in need and those that are border cases will

be assisted. To increase the perceived credibility of this move, the government will be disinclined to publicize the threshold or any other information regarding it.

A case in point is the stress tests of the 19 largest bank holding companies which were innovatively designed and introduced in the U.S. during the financial crisis of 2007-2008. According to Timothy Geithner (2014), who served as president of the Federal Reserve Bank of New York (and Vice Chairman of the Federal Open Market Committee of the Federal Reserve System) and then as U.S. Treasury Secretary,

> [T]he stress test would provide a form of triage, separating the fundamentally healthy [banks] from the terminally ill (p. 12). […] if an unhealthy firm couldn't raise enough [capital] from private investors, government would forcibly inject the missing capital (p. 11). The plan aimed to impose transparency on opaque financial institutions and their opaque assets in order to reduce the uncertainty that was driving the panic" (p. 286).

According to Gorton (2014, 15), the process was as follows:

> The banks were instructed to calculate losses, profits, and loan loss reserves over the next nine quarters under a baseline scenario and under a more adverse (i.e., stress)[…]. The regulators independently made their own such projections under each scenario. Comparing a bank's capital projection to that of the regulators produced the "capital gap." If there was a significant gap, compared to required capital, then the gaps were required to be filled with capital plans filed by the banks, privately-produced capital and if that could not be done then through the [U.S. Treasury's] Capital Assistance Program (CAP).

Interestingly, although the results of these stress tests were made public, the model or process employed by the Fed in order to achieve the results was not.[1] A substantial reason for this strategy may be the attempt by policymakers to hide the size of the safety margin employed by the mechanism at hand in order to limit public information regarding the scale of the crisis.

In sum, the behavioral finance literature highlights theories that are based either on investors' beliefs or preferences. Potential conceptualizations of policy overreaction could draw on this insightful demarcation. The relevance of two additional types of policy overreaction, passive and proactive ones, was also highlighted here. This demarcation emphasizes that policymakers wishing to overreact in pursuit of policy goals and/or political benefits should carefully weigh the balance between the two. It also directs scholarly attention to the policy processes during which the balance between these two modes is considered as part of the calculus of policy overreaction, to the actors involved and to the interactions amongst these actors.

Attempts to produce systematic knowledge related to policy over- or underreaction require close attention to context and contextual effects. A substantial reason for this is that valid answers regarding these phenomena depend on the context within which policymakers unintentionally or deliberately over- or underreact. Attention now turns to an elaboration and illustration of this point.

The Embeddedness of Disproportional Policy Response in Context

Recognizing contextual effects facilitates an understanding of the full spectrum of causes leading to disproportionate policy response. I refer here especially to the underestimation

of context as a contributing factor in the emergence of policy under- and overreaction. Specifically, modes of disproportional policy response require an awareness of the policy problem at hand, and its severity. This awareness may be tied to contextual factors. Take, for example, the emergence of the Ebola outbreak in Hong Kong. The peculiarities of this context, especially a population distrustful of government and more inclined to seek out traditional healers, have caused a delayed response by government. According to Dr. Margaret Chan, WHO Director-General of the World Health Organization and formerly director of health in Hong Kong:

> With the benefit of hindsight, the mistrust is a major problem […] Instead of sending patients to a treatment center as early as possible, people in the community kept their loved ones at home and nursed them. It was like a peat fire spreading underground […] Information was not flowing up. That is a big problem. You cannot manage what you don't see and what you don't know. I think all of us underestimated the context […] An old disease in a new context gave us surprises [quoted in *Science*, 30 October 350(6260), 495].

This example clearly shows that society might matter. Policymakers have to equip themselves with rich societal knowledge in order to effectively take account of how it might actually matter to the knowledge and awareness of the policy problem and its enormity.

Other aspects of different contexts in which public policy occurs, such as psychology, culture, history, demography, technology and so on, might also matter. One of the insights of social psychology, for example, points to the power of the social situations and social structures to overwhelm individual dispositions, to the point of

committing extraordinary, demonic acts of harm and evil (e.g., Milgram 1974; Lifton 1986). Erecting death camps and devising and executing genocide are perhaps extreme examples but they underline the technical and political state capacity (Hupe and Hill 2014) to overreact. Relatedly, certain contexts characterized by the existence of a large ethnic minority may manifest a salient ethnic category, thus strengthening ethnic identity (e.g., Mullen, Brown, and Smith 1992). Once ethnic identity is more pronounced, aspects of public policy addressing this target population may reflect ingroup bias (i.e., positive reactions to the ingroup relative to the outgroup) thereby triggering disproportionate policy response. Similarly, culture bias in the form of "social construction of reality" (Berger and Luckman 1967) falls squarely under the environmental factors that may generate and maintain disproportionate policy response for an extended period of time.

Blame culture and the derived consequence of presidents and prime ministers being subject to enormous and intense political pressure to do something in order not to be blamed for doing nothing may also play a critical role in disproportionate policy response. For example, during the SARS epidemic, Canada and Asia used mass fever screening. They screened hundreds of thousands of passengers and did not detect even one confirmed case. Similarly, during the Ebola outbreak, the U.S. government decided to screen travelers from three West African countries at five airports for signs of Ebola. Other than giving President Obama a lot of political coverage, the screening did not detect one confirmed case (U.S. Center for Disease Control and Prevention 2014). The dynamics of place ─ for example, its violent logic (Therborn 2006, 523) ─ may also be of importance. The US Clinton administration fatally neglected Rwanda and opted instead

to concentrate military intervention in the Balkans. This policy underreaction made the genocide of the Tutsi by the Hutu possible (Therborn 2006, 523).

Ideational aspects of the environment may also shape disproportionate policy choices. But ideas must be seen in the context of other factors shaping policy choices and outcomes. Germany's deflationary policy adopted in 1930-2 provides a classic example. A majority of German economists rejected the view that the Great Depression could be ameliorated by government generated demand. A substantial reason for this was their support of the idea that the market economy tends toward optimal equilibria rather than getting stuck in a stable underuse of resources. Bureaucrats held a similar view regarding deficit financing and fear of panic following the injection of a large quantity of money into the local financial system. However,

> The most important factors shaping the policy […] were political. This was driven by the fear of returning to the rampant inflation that had characterized the first years after the First World War. Following the collapse of Imperial Germany, a coalition of labor, business, and government responded to the threat of chaos and political instability with inflationary policies that eventually resulted in the "hyperinflation" of 1922-3. It was this negative policy legacy that was the strongest factor leading to the deflationary policy adopted in 1930-2 (Rueschemeyer 2006, 241; based on James 1989).

This policy overreaction undermined most groups in German society, led to the collapse of the banking system in 1931, and made Hitler's promises to defeat unemployment and stabilize prices attractive to many segments of German society. It was this policy overreaction in the early 1930s that brought Hitler to power.

The discussion so far indicates that a commitment to utilize the concepts of policy over- and underreaction, especially when a comparative perspective undergirds the research in question, should pull researchers towards greater respect for identifying and describing the particular and the unique. Significant differences between contexts should become the starting point of detailed comparative research into disproportionate policy response.

Measurement

A fundamental component of good research is that of sound measurement. Good measures advance theory development and testing, and clarify the evaluation of (dis)proportionality in public policy. Although the concept of proportionality has been extensively studied by legal and philosophy scholars, little empirical knowledge is available about proportionality in public policy and the ways it informs and shapes the calculus of policy choice. To probe research questions related to the topic at hand, the concept can be measured as individuals' perceptions of what they think about the proportionality of policy. “Individuals” may refer to policymakers and members of target populations and the general public. Opting for this strategy implies that, in terms of the breadth of this measure, proportionality is measured on the basis of an overall assessment of a given policy. Respondent perceptions are aggregated ex post into what one may call "meta-proportionality." Respondents may furthermore be clustered into homogenous groups for reporting and further statistical analysis. An overall assessment of proportionality presents an easier task for respondents. If they are also asked to compare the similarity of proportionality across policies within the same policy sector or across

sectors, statistical routines could be used to gauge the dimensions of judgment that differentiate amongst policies with regard to their level of proportionality. Measuring changes in the proportionality of policy may be undertaken by using this methodology.

Alternatively, scholars may employ vignette survey experiments, for example, using experts and laypersons or other samples. Respondents may be randomly assigned one of numerous descriptions of a public policy which differ with regard to policy goals, policy tools and policy outcomes, and then asked to evaluate the proportionality of the aforementioned aspects. Numerous experimental conditions could be designed, each combining one of the policy goals, policy tools, and policy outcomes. This methodology has been widely used in social sciences and its findings have been found to have strong external validity in predicting behavior of both citizens (Hainmueller, Hangartner, and Yamamoto 2015) and professionals (Peabody et al. 2004).

Relatedly, scholars may also undertake experimental manipulation using risk unfolding over time, combined with varying types of warnings. Warnings may be classified, for example, as tactical or strategic (Davis 2009, p. 173), as a point estimate or a range, or as qualitative or quantitative (Bulkley and Herrerias 2005, p. 604), and according to their level of credibility. The idea is to use an experimental design framework within which escalating repeated warnings and their outcomes are manipulated in order to ascertain policy responses by participants or preferably, by policymakers.

Based on the definitions provided here, policy over- and underinvestment may be assessed by cost-benefit analysis, and policy over- and underreaction by subjective evaluations (i.e., perceptions) by policymakers, target populations, policy experts and the

general public over time combined with cost-benefit analysis. Policy over- and underreaction may also be measured by a comparison of policy outcomes with (national or international) standards developed by experts. For example, a government air quality policy may be compared with the World Health Organization's recommendations for air quality standards which were developed by an international group of experts (e.g., Tosun 2013).

Conclusion

Policy response is complex, and many different models are necessary to capture the richness of observed policy response across many different settings. However, policy process models have so far left out modes of disproportionate policy response. This deficiency is sufficiently jarring to warrant asking whether we miss something deeper about the significance of such response if we confine our attention too narrowly to routine policy processes or if we limit our measures to statistical scorecards of attention. Throughout this chapter, I have tried to show that the study of disproportionate policy response is a gateway to some of the most significant aspects of public policy. Not only has it been a focal point for political actors seeking decisive change or no change at all, but such action has time and time again also made a dramatic impact upon the direction, the character of policy and politics (e.g., Maor 2015b; 2016a; forthcoming; Maor and Gross 2015c).

Although significant advances have been made in defining policy over- and underreaction, much work still needs to be done in dimensionalizing these concepts in specific policy sectors. The idea is to gauge the dimensions which are the most important

in accounting for a change of opinion from policy underreaction to proportionate response and to policy overreaction. Research that empirically addresses this question will be theoretically and practically valuable. Part and parcel with dimensionalizing policy over- and underreaction in specific policy sectors, more work is needed to understand the underlying behavioral antecedents: How are policy over- and underreaction created? What are the underlying processes that allow it to create or destroy (perceived) value for policymakers? Are arrangements that prevent disproportionate policy response accidental? Such research will be useful for increasing our understanding of how the perceived value of a given policy is created or destroyed, and thus to manage it more effectively. Readers have to recognize that policy over- and underreaction may be poorly calibrated policies but also, intentional ones. As noted earlier, policymakers may deliberately formulate off-the-shelf and specially-designed policy overreaction strategies as "last-resort" options, emergency options, and as an attempt to signal target populations that policymakers "may go mad" if they encounter certain behavior of the target populations (Maor 2016a; forthcoming). In this regard, policy scholars must pay greater heed to issues of temporality, both in the short and long term. To build better theories of time and temporal progression, the area of disproportionate policy response would also benefit greatly from field semi-experimentation (e.g., Grant and Wall 2009) that systematically tests the emergence of policy over- and underreaction, for example, under escalating repeated warnings. Finally, scholars have begun to explore processes of sustained policy over-and underreaction propelled by self-reinforcing forces (Jones, Thomas and Wolfe 2014; Maor 2014b, 2016b). More work is needed to fully understand these processes. To date, much of this

research has been qualitative, offering the benefits of inductive theorizing (e.g., Maor 2016c). Going forward, research in this area would also benefit greatly from quantitative analyses.

Finally, there is mounting criticism that revolves around the lack of empirical research addressing disproportionate policy response. Undoubtedly, students of disproportionate policy responses face more daunting challenges for empirical analysis than students of other aspects of policy dynamics. Yet it is hard to argue that disproportionate policy response is less amenable to theory. Indeed, given the difficulties associated with empirical work, theory arguably plays an at least as useful, if not more useful, role. It can guide scholars as to what sorts of data they should be collecting from government documents and other sources. It can identify institutional incentives, thereby enabling researchers to distinguish these incentives from personal tendencies (e.g., overconfidence) or other factors. And when data are classified or otherwise unavailable, theory can still provide insight. The area of disproportionate policy response is still in its infancy, and the lack of empirical investigation clearly reflects this fact. It is hoped that the theoretically meaningful constructs established so far will offer guidance that facilitate future empirical inquiry

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[1] TARP stabilized banking and rescued the auto industries, provided loan guarantees, and helped stave off mortgage foreclosures (Blinder 2013). Once the banking sector and the economy had stabilized, calibration of the disproportionate policy response took place. Although Congress initially authorized $700 billion for TARP, that authority was reduced to $475 billion by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act).