



# Reducing fear to influence policy preferences: An experiment with sharks and beach safety policy options

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## ABSTRACT

This article reports on new research that finds certain messages reduce fear of sharks, key to promoting conservation-minded responses to shark bites. Here it is argued that the sophistication in public feelings toward these highly emotional events has allowed new actors to mobilize and given rise to the ‘Save the Sharks’ movement. In a unique experiment coupling randomly assigned intent-based priming messages with exposure to sharks in a ‘shark tunnel’, a potential path to reduce public fear of sharks and alter policy preferences is investigated. Priming for the absence of intent yielded significant fear extinction effects, providing a viable means of increasing support for non-lethal policy options following shark bite incidents. High levels of pride and low levels of blame for bite incidents are also found. In all, this article provides a step towards improving our understanding of fear and fear reduction in public policy.

## 1. Introduction

Public emotion can mobilize groups to act against elected officials and impose political penalties. This is particularly true for environmental issues. From public outcry in support of whales, to public fear against nuclear power, politics often involves a battle between competing frames, emotional responses, and real-world events. A regulation is a good regulation until something highly emotional occurs or enough people are angered to press for change. Yet, there is more to this story. Feelings can shift; altering the way the public rallies around issues, and their numbers. Messages are analyzed to consider the way they facilitate emotional responses on the issue of sharks and shark bite incidents and how these impact policy preferences.

The occurrence of shark bites on humans and the policy responses that follow are classic ‘something must be done’ moments. There are presumptions of public panic and the need for action from governments around the world. Between 2007 and 2016, there have been 766 shark bite incidents internationally [19]. From Reunion to Recife and Sydney to San Diego these events garner public attention and, increasingly, responses from governments. Here, the emotional competition is between public mobilizations and political penalties that focus on public safety and tourism or shark conservation.

This article argues that the ‘Save the Sharks’ moment has arrived because the public is accepting alternative messages about sharks, that challenge ‘crimes by nature’ framings that blame sharks, and remove the need for lethal responses to shark bites. This article reports on a

unique experiment that coupled randomly assigned intent-based priming messages with exposure to sharks in an aquarium’s ‘shark tunnel’. It finds that priming for the absence of perceived intent reduced respondents’ fear of sharks, which plays a crucial role in support for conservation-minded policies. This experiment is the first to reduce fear of sharks. It successfully demonstrates fear extinction effects, providing a viable means of shaping public policy preferences during high salience periods through the dissemination of information that mitigates emotional responses. This is important because policies aimed at killing sharks are predicated on the fear of sharks. These findings are consistent with new mobilizations of actors working to protect sharks, particularly after shark bite incidents.

The political responses to shark bites in Western Australia stand out as a tipping point that has generated a new social mobilization around the protection of sharks and white shark populations in particular [18,28,29,38]. The Government has established a Serious and Imminent Threat policy to hunt, catch and kill sharks preemptively for swimming by beaches. They also implemented a three-month trial program with approval from the federal government to set a number of baited drumlines off beaches to catch sharks and then draw them to the surface so that rifles could be used to shoot them in the head and release the carcass in the water. The justification for these measures has been that the same shark might be responsible for more than one incident and would return to harm beachgoers. This political discourse is consistent with the fictional movie *Jaws* [33].

These policies resulted in a backlash that launched a new effort to

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stop lethal shark control measures across Australia and led to the founding of a number of new groups [29]. This is consistent and predictable based on Schneider and Ingram's [41] analysis of over-reactions against marginal populations. In this case, the reaction is seen as against those who support sharks and this increases their visibility and resistance.

Established international norms to protect shark species following shark bites are now showing greater resilience with the new mobilization of actors and groups. First, there is new action by scientific shark groups to contest existing policies. The Oceania Chondrichthyan Society (OCS) that is based in Australia has been responsive to the series of shark bites and policy responses in WA and submitted two formal submissions to the WA Environmental Protection Authority (EPA). In addition, an independent review of the WA drumline program by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) for the WA EPA found 'little support' for the belief that shark population patterns were consistent and reliable so that the use of drumlines would not adversely affect the population. As a result, the WA EPA chairman stated, 'In view of these uncertainties, the EPA has adopted a cautious approach by recommending against the proposal' [12]. More broadly, the American Elasmobranch Society has focused on the bad press that sharks and shark bites can trigger and approved a resolution that recommended new categories for the reporting of human-shark interactions to include incidents with no injury such as shark sightings and shark encounters as well as noting shark bite incidents and fatal shark bites [42].

Secondly, there is a growing consensus among international scientists to speak out. There are two examples which stand out as efforts to influence the WA policy measures. First, in 2013, a joint petition to the WA Government was signed by 100 scientists, who spoke out against the potential for a cull policy [43]. And again in 2014, 301 scientists signed a joint statement to the WA EPA against the proposal for greater use of drumlines [31]. Thirdly, non-governmental organizations and the University sector are noting the presence of alternatives to lethal measures. Conservation groups such as Sea Shepherd, Support Our Sharks, Humane Society International, and NoSharkCull are advocating for non-lethal methods of shark bite prevention as well as engaging in direct action campaigns against culling practices. Public actions include organizing public protests around Australia and the world to raise awareness (ABC [2]). The University of WA is also looking for scientific innovations and alternatives to lethal measures (UWA [45]). The attention to shark bite policies has included social media campaigns that involve celebrities in advocating for sharks. Comedian Ricky Gervais and Olympic diver Tom Daley were photographed holding up signs for Twitter posts that read, 'To the West Australian Government: listen to the facts, listen to science and listen to reason and stop the shark cull', tweeted out to their nearly 10 million followers. Underpinning this mobilization is the acceptance of new messages, less fear towards sharks, and conservation-minded policy preferences following shark bites [38].

This research has three chief implications for environmental policymaking. First, while policy responses to shark bites are emblematic of emotional knee-jerk policymaking, there is more to this process. Neff [34] argues that politicians utilize discourses of emotionality to frighten the public about a given issue and assume that they stand a good chance of changing a policy if they pick the right inflammatory language, about the right marginalized target, to mobilize enough people, and place political pressure on those in power. However, while stirring public emotion may lead to quick policy enactments it can also energize new communities of opposition-based actors to engage [41]. The central question is how the emotionality around an issue shapes the mobilization of actors and informs the policy process.

Secondly, this research identifies a new trend toward 'crimes by nature' policymaking. Features of nature are increasingly being anthropomorphized, demonized, politicized, and securitized. In the past, environmental policies responded primarily to the ways in which

humans meddled with and degraded nature. The poisoning of the natural environment with pesticides [6], the destruction of animal habitats through deforestation [27], and the hunting of animal species to extinction [40] gained attention because humans were doing things that should not be done, in places people did not belong. In short, man was the enemy of nature. However, a more recent trend of international policymaking suggests that man is the referent object that needs to be secured and nature is the threat. Nature has a wrath [26]. Storms have fury [17]. And animals get a taste for human flesh [9]. Such rhetorical framing devices influence public perceptions of nature, which in turn shapes both the tolerable thresholds for their occurrence and the types of policies enacted to counter the perceived threat to humans. Indeed, the reversal of the referent object to man as threatened and nature as the threat has had devastating effects on policy outcomes as extermination of the source of the threat becomes increasingly favoured.

Thirdly, policy measures have global implications when they target internationally protected species. The IUCN Red List lists great white sharks (*Carcharodon carcharias*) as 'Vulnerable' and notes that, 'Threats to the species include targeted commercial and sports fisheries for jaws, fins, game records and for aquarium display; protective beach meshing; [and] media-fanned campaigns to kill Great White Sharks after a biting incident occurs' [15]. The occurrence of shark bites has already been used as a rationale to delist species from protected status, violating international treaties and agreements [20,21]. This is particularly critical as [13] notes 'endangered species protection effectively constituted the first category of global environmental policy-making'.

This article moves ahead by looking at emotional policy processes and then examine how priming messages about shark behavior influences levels of fear and policy preferences. This analysis addresses the changes in emotions by looking at fear extinction effects. Here, the article investigates the relationships between fear, perceived intentionality, attitudes to and perceptions of sharks and shark behavior, and policy preferences. First, the potential for intent-based messaging to reduce fear of sharks is reviewed. Secondly, the effects of fear and fear extinction on policy preferences regarding shark bite prevention are examined. Finally, the relationship between priming messages and policy preferences are assessed.

## 2. Literature review

Research of this nature faces many challenges, and much of the existing literature relies on indirect triggering of fear responses with no actual exposure to sharks [37,44,5]. The paucity of research in this area can probably be attributed to the difficulties of conducting experimental analyses relating to high affect stimuli, as highlighted by [39] call for 'future research combining questionnaires with pictures or videos of predators'. Such studies will no doubt provide important insights into the psychological processes at play; however, the unique contribution of this study is that it pairs priming messages and policy preferences with live exposure to sharks.

Political science has long noted the influence of 'something must be done' moments.

Understanding seemingly knee-jerk policymaking is a valuable element of policy analysis because this type of short-term issue governance is common and can have lasting effects. Increased access to traditional and social media in a 24/7 news cycle means more people can receive emotional stimuli, from more sources, more often. Indeed, emotions play a key role because public feelings of dread from a perceived threat can place immediate pressures and penalties on elected officials to act. Several leading theories include the literature on punctuated equilibrium [3], moral panics [7] and focusing events [4]. In addition, Neff [34] argues that political actors anticipate public responses to emotional events and construct informal and formal thresholds for specific policy issues to help mitigate against immediate penalties. The emotionality of the issue and the strength of the policy threshold are the two key measures. Moreover, Neff [34] categorizes highly emotional events

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