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Abstract
Managed retreat is one of the few policy options available to the Australian government to mitigate the risk of sea level rise for coastal communities. A structured withdrawal from areas inundated by rising sea levels may be the only viable option for some jurisdictions and in many cases may be the most cost effective defensive approach. At present, little is known about community opinions on managed retreat options. The authors present a social functionalist framework to analyse the range of personal concerns and understand more about how people may respond to predicted changes to coastal shorelines. The meta-theoretical social functionalist framework suggests people can intuitively act as scientists, economists, prosecutors, theologians and at times as politicians, when subject to situations that require judgment and choice. Qualitative responses to an online survey were used to categorise participants according to their social functionalist decision-making styles. The study compared the decision-making style of three groups of participants: those concerned, unsure and unconcerned (sceptical/rejectionist) about sea level rise risks. The research demonstrated that the majority of participants used more than one social functionalist framework to intuitively assess managed retreat policies. While all risk profile groups tended to express intuitive scientist concerns, the emotive expressions of intuitive theologians and prosecutors were evident and could undermine policy processes and adaptation initiatives. These findings reinforce the need for further public debate on how to respond to sea level rise. They emphasise that different individuals frame the purpose of those debates in distinct ways; to reach the most effective, equitable and socially legitimate or morally appropriate response, which depends upon what is inherently important to each individual. A major advantage of employing a social functionalist framework analysis is the flexibility to identify the range of positions (more than one worldview) that can be held by members in a community and to be cognisant of the importance of firmly entrenched beliefs, and hence the barriers to constructive dialogue.

Keywords
functionalist, level, rise, managed, retreat, policies, australia, framework, understand, responses, projected, social, sea

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Using a Social Functionalist Framework to Understand Responses to Projected Sea Level Rise and Managed Retreat Policies in Australia

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Abstract: Managed retreat is one of the few policy options available to the Australian government to mitigate the risk of sea level rise for coastal communities. A structured withdrawal from areas inundated by rising sea levels may be the only viable option for some jurisdictions and in many cases may be the most cost effective defensive approach. At present, little is known about community opinions on managed retreat options. The authors present a social functionalist framework to analyse the range of personal concerns and understand more about how people may respond to predicted changes to coastal shorelines. The meta-theoretical social functionalist framework suggests people can intuitively act as scientists, economists, prosecutors, theologians and at times as politicians, when subject to situations that require judgment and choice. Qualitative responses to an online survey were used to categorise participants according to their social functionalist decision-making styles. The study compared the decision-making style of three groups of participants: those concerned, unsure and unconcerned (sceptical/rejectionist) about sea level rise risks. The research demonstrated that the majority of participants used more than one social functionalist framework to intuitively assess managed retreat policies. While all risk profile groups tended to express intuitive scientist concerns, the emotive expressions of intuitive theologians and prosecutors were evident and could undermine policy processes and adaptation initiatives. These findings reinforce the need for further public debate on how to respond to sea level rise. They emphasise that different individuals frame the purpose of those debates in distinct ways; to reach the most effective, equitable and socially legitimate or morally appropriate response, which depends upon what is inherently important to each individual. A major advantage of employing a social functionalist framework analysis is the flexibility to identify the range of positions (more than one worldview) that can be held by members in a community and to be cognisant of the importance of firmly entrenched beliefs, and hence the barriers to constructive dialogue.

Keywords: Social Functionalist Frameworks, Climate Adaptation, Coastal Management, Community Engagement

Introduction

THERE IS MOUNTING evidence that Australian coastal communities will be seriously threatened by sea-level rise before the end of the century. At present, climate change adaptation planning and implementation of policy options is still in its infancy (Tang et al. 2010). The three broad types of sea level rise risk mitigation policies discussed in scientific literature are protection, accommodation and retreat (Abel et al. 2011; Bray et al.1997; Few et al. 2007; Klein et al. 2001). Protection policies involve engineering defence structures such as seawalls, gates, levees, artificial headlands, beach nourishment and enhanced ecological protection. Accommodation policies attempt to reduce the sensitivity

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and/or exposure to the impacts of sea level rise, e.g. flood proofing, drainage systems, raising infrastructure. Retreat involves the relocation of homes and infrastructure under threat (Few et al. 2007a). It is possible to have a policy that combines retreat with protection and accommodation; a planned retreat from behind natural ecological defences that buffer infrastructure from the direct threats of the sea. Such a policy requires infrastructure to be removed to make way for protective coastal ecosystems that reside landward as the sea rises (Abel et al. 2011).

Planned retreat with an ecological barrier is an especially relevant policy for coastal communities built on low-lying coastal locations already protected by an ecological barrier (e.g. mangroves, reefs and wetlands). Abel et al. (2011) note that ecological barriers in low-lying locations reduce the rate of permanent inundation (e.g. coastal erosions, recession of beach and dune systems), while also offering cost-effective protection from the destructive force of temporary inundation (e.g. storm surge events). Managed retreat – the relocation of homes and infrastructure under threat from coastal inundation – is one policy option under consideration by the Australian government to adapt to long-term risks from possible sea level rise. Abel et al. (2011) argue that managed retreat may be the most appropriate policy response for low-lying coastal communities which cannot afford to invest in long-term protection or accommodation strategies to mitigate the risks of accelerated sea level rise. A major draw-back of this strategy is that people are required to forfeit their ownership of coastal front land several years before their property will be inundated by rising seas. It is expected that many coastal residents will be reluctant to relinquish their land to make way for or enhance an ecological barrier (if not part of the original contract), unless they are adequately compensated and feel that the retreat scheme is transparent, fair and just (Few et al. 2007).

In Australia, responsibility for reducing vulnerability and adapting to climate change is largely devolved to local government. Local and State governments are required to identify hazards and develop and implement long term plans to regulate the effects of coastal land use. Hayward (2008, p59) cautions that difficult decisions concerning climate adaptation strategies cannot be made fairly, justly or effectively within small, time and group-bound forums alone. She suggests that, "*local voices must be heard in decision-making*, *but local councils cannot be left to wrestle with difficult temporal*, *spatial and procedural justice questions unaided*". Implementing local policy solutions may simply exacerbate deep community divisions and undermine long-term community resilience (Measham et al. 2011). Gorddard et al. (2011) support this notion as evidenced by their case study in a New South Wales coastal community responding to government sea level rise policy initiatives implemented as interim measures.

A community's overall response to the threat of inundation and stormwater damage will require compliance with coastal adaptation strategies which may include managed retreat policies initiated by local governance institutions. This will necessitate consultation with various communities and stakeholders. Community perceptions of coastal adaptation strategies are comprised of the attitudes, values, beliefs and rights of individuals which are often contested. Hence the design, implementation and acceptance of adaptation policies are proving difficult for government planning institutions in Australia. The choice of strategy, and the details of the design will have significant and widespread implications for the value and security of private property, the ecological values of coastal areas, the safety and resilience of settlements, and the cohesiveness of communities. Consequently, coastal communities are

demanding that policy decisions are informed by the best available science and that the public's interests have been taken into account in forming policies concerned with climate change (Abel et al. 2011; Gorddard et al. 2011; Ryan et al. 2011). Local council managers, policy makers and research scientists involved in informing, planning and communicating about adaptation strategies and climate change policy development need to collaborate prior to communicating risks and adaptation strategies to the public (Alexander et al. 2011).

At present little is known about how the Australian public perceives the prospect of managed retreat as a policy option to mitigate long-term sea level rise risks (Abel et al. 2011; Gurran et al. 2007; McFadden 2010; Norman 2009; Standing Committee on Climate Change Water Environment and the Arts 2009). Gorddard et al. (2011) have described community responses to local government policy on management of urban areas deemed at risk of future flooding events and highlighted the community response. This paper explores a range of different decision-making criteria used by community members in assessing a hypothetical managed retreat option that would require residents to forfeit their land to make way for a natural ecological barrier if the seas rise to a designated point. By distinguishing between the broad positions taken by people when assessing managed retreat schemes, the authors aim to learn more about the motives and concerns of people with different beliefs about the risks of sea level rise. It is important to understand perspectives of key stakeholders, particularly when such a multi-dimensional policy is publically contested and has very high stakes for many residents and local councils and which may dictate the future of many sparsely populated coastal locations

Method

Policy-makers responsible for developing and implementing sea level rise mitigation strategies may greatly benefit from understanding more about the different social functionalist decision-making criteria that community stakeholders use to assess managed retreat policies. A meta-theoretical social functionalist framework from the discipline of psychology has been used to make sense of the broad range of personal concerns expressed in an online survey. Participants were recruited across Australia via advertisement over a three-week period in June and July 2010. A media release was published by coastal newspapers, including the Magnetic Island Times, Gosford Express Advocate, Sunshine Coast Daily, Geelong Independent and Gympie Times. A CSIRO researcher was interviewed on several radio programs including ABC radio in Queensland, New South Wales and Victoria. The survey was publicised through Google Adwords via an advertisement that appeared on the Google search engine when computer users entered property-related or environmentally-related keywords. The survey was also discussed on several blog websites, including sites that present rejectionist opinions about accelerated sea level rise claims (e.g. Andrew Bolt online newspaper articles, joannenova.com.au and agmates.ning.com.). The media recruitment and survey discussion on the blog websites directed participants to the survey website.

The survey consisted of four pages of questions, the first page administered property purchase questions; the second questioned perceptions of sea-level rise and general policy options; the third asked respondents to assess the managed retreat scheme. The fourth page collected demographic information. Details of the online survey are reported by Ryan et al. (2011). While the survey predominately administered closed-ended quantitative questions,

five open-ended questions were used to classify the respondents into social functionalist categories.

It is important to note that respondents were self-selected, hence do not represent the Australian population. The survey gathered a wide range of views from members of the community who were computer-literate and motivated to voice their opinions about sea level rise and managed retreat. The data collection process allows a comparison of respondents who 'reject', 'are unsure' or 'are concerned' about the risks posed by rising sea levels.

The sampling methodology consisted of self-selected respondents rather than those representing a stratified random sample, providing a non-representative sample. Self-selected quasi-experimental designs that do not control for participant recruitment (Campbell and Stanley 1966, Cook and Campbell 1979) do not provide representative samples of attitudes of the general population. This sample did provide a wide range of views about sea level rise and managed retreat options from computer-literate members of the community motivated to voice their opinions about sea level rise policies, thus providing unique insights into the arguments likely to be presented in community engagement forums. The authors suggest that based on many responses that participants rejecting the risk of sea level rise were motivated to participate in the study as part of an organised resistance against science, while other participants decided to complete the online survey through interest. Some comments may have been influenced by attitudes expressed by portal sites directing responses to the survey. Yet community engagement forums are also likely to experience similar effects when organised stakeholder groups angry at the prospect of new policy are in attendance. In total, 524 respondents completed the survey.

Social Functionalist Frameworks

The meta-theoretical social functionalist framework proposes that people can act intuitively as scientists, economists, politicians, theologians and prosecutors when considering a complex topic involving uncertain and contentious issues such as managed retreat policy. Tetlock (2002) outlines five social functionalist frameworks (intuitive scientist, intuitive economist, intuitive politician, intuitive prosecutor and intuitive theologian) that describe behavioural strategies that can be used to functionally cope with various challenges in life. The defining difference between each theoretical position is the underlying driving goal of the individual. In principle, all individuals are capable of acting and thinking in accordance with each functional framework and often do when it is in their benefit to do so (Tetlock et al. 2000, 2007). The flexibility of human decision-making is rarely formally recognised by policy-makers. Mainstream environmental planning and management approaches are based primarily on scientific and economic concerns, which can result in policy-makers struggling to make sense of community reactions other than expected within the science/economic framework, such as outrage, discussions of immorality, taboo and fairness concerns (Hance et al. 1988).

Tetlock (2002) notes that under certain conditions we all act as theologians, prosecutors and politicians, and there are many occasions when such roles will benefit us more than acting with the modernist logic of a scientist or economist. Each of the social functionalist frameworks outlined by Tetlock is proposed to be associated with particular perceptions, cognitions, emotions and behaviour that can be beneficial under certain conditions. The five

frameworks have been described by Alexander et al. (2012) and are summarised in the following section.

- **Intuitive scientists:** The intuitive scientist is driven by epistemic goals and the need to discover causal relationships in pursuit of truth. Intuitive scientists attempt to avoid inferential errors, and often attempt to protect their self-esteem by ensuring cognitive consistency and affirming a belief in a controllable world (Friedrich 1993, Tetlock 2002). Intuitive scientists are concerned with developing an understanding of future sea level rise scenarios and associated risks.
- **Intuitive economists:** The intuitive economist is driven by goals of maximising the benefits of resource use for themselves and/or the community usually by comparing costs and benefits, with decisions aimed at accruing benefits such as; maximising monetary profit, pleasure, happiness, or welfare (Spash 1993). The intuitive economist aims to choose the most economically optimal option for themselves or their community in relation to sea level rise risks.
- **Intuitive politicians:** Intuitive politicians describe individuals who are attempting to cope with accountability demands from key constituencies in their lives. The intuitive politician needs to establish or preserve a desired social identity and possess a reasonably reliable mental compass for navigating through role–rule structures (Tetlock 2002). Intuitive politicians attempt to reflect a positive image to other people and to escape the possibility of accountability. In the context of sea level rise policy, an intuitive politician may hold a belief that a managed retreat clause is necessary, but may also be pleading for the clause not to affect him/her personally.
- **Intuitive prosecutors:** The goal of the intuitive prosecutor is to enforce social norms by directing accountability demands on those tempted to derive the benefits of collective interdependence without contributing their fair share or without respecting the role–rule regime (Tetlock 2002, Tetlock et al. 2007). The primary concern of the intuitive prosecutor is to protect him/herself or others from exploitation and instances of opportunism, exploitation or norm violation, which will action intuitive prosecutors to put pressure on those responsible to tighten standards of accountability and try to close loopholes (Cosmides and Tooby 1994). There is strong psychological evidence that while most people see themselves as fair-minded with adherence to shared norms of fair play, humans have a tendency to be roused to retributive wrath when others display contempt for these norms (Lerner and Lerner 1978, Miller and Vidmar 1981, Tetlock et al. 2007).
- **Intuitive theologians:** Intuitive theologians try to protect sacred values from secular encroachments. They need to believe that the prevailing accountability and social control regime is not arbitrary but rather flows naturally from an authority that transcends accidents of history or whims of dominant groups (Durkheim 1976, Tetlock 2002). Intuitive theologians will attempt to block inquiry that demystifies objects of veneration and they will fight to protect sacred values from encroachments such as market capitalism, government laws and scientific naturalism. In addition, angry reactions to any areas that are normally considered taboo will likely be evoked (Lichtenstein et al. 2007, Tetlock et al. 2000). An intuitive theologian may feel that the science that supports accelerated sea level rise predictions is immoral or that discussing a law that requires owners in any event to relinquish their property is taboo.

The five functionalist frameworks are not mutually exclusive, as people are sufficiently flexible to combine these frameworks when conceptualising complex problems. When faced with a complex problem where an individual has more than one objective, it can be functional for a person to be flexible in their frame of reference by drawing upon more than one social functionalist framework. For example, a person when assessing a complex topic may act in both an intuitive scientist and an intuitive economist framework if they are attempting to work out the facts of an issue and relate the facts to economic value (e.g. ecological economists often are required to draw upon both frameworks). The intuitive theologian and intuitive prosecutor are also likely to overlap, as people who feel that sacred taboos have been violated are likely to want to protect moral boundaries by prosecuting others.

Results

Social functionalist criteria were used to assess participants' responses, where two researchers independently classified respondents into functionalist categories; the degree of agreement was indicated by the Cohen's kappa statistic. Landis and Koch (1977) argue that Cohen's kappa values < 0 indicate no agreement; 0–.20 indicate slight agreement, .21–.40 fair agreement, .41–.60 moderate agreement, .61–.80 substantial agreement, and .81–1 almost perfect agreement. The inter-classification reliability for each of the functionalist categories was found to have moderate inter-classification reliability, with the exception of the intuitive politician classifications, notably; Intuitive scientist kappa = .62; Intuitive economist kappa = .62; Intuitive politician kappa = .18; Intuitive prosecutor kappa = .70; Intuitive theologian kappa = .65. Where inconsistent classifications arose the researchers conferred and mutually agreed upon a classification decision, see Alexander et al. (2011b) for more detail.

Of the total respondents, 462 (89%) were classified into one (e.g. intuitive scientist) or a combination (e.g. intuitive scientist and intuitive theologian) of the five categories. This reflects the fact that some respondents provided inconsistent responses and so could not be classified into any of the functionalist categories. An exploratory analysis was conducted to examine the prevalence of combined functionalist worldviews. Of the total classified respondents (N = 462), 147 (32%) were classified into only one functionalist worldview, while 315 (68%) participants were classified into more than one worldview.

Responses to four statements formed a scale measuring perceptions of sea level rise risk which had a high level of internal consistency (Cronbach's α of .95). The scale distribution was bimodal, with a large number of respondents either very concerned or not at all concerned about the risks of sea level rise. Participants were classified into three sea level rise risk groups; (i) rejecting the notions of risk - "rejectionist" (n=264), (ii) unsure about the notions of risk - "unsure" (n=81) and concerned about the notions of risk - "concerned" (n=177). Pearson's chi-square (χ^2) tests were used to compare the expected and observed frequencies of classifications of intuitive worldviews for each of the sea level rise risk groups. As respondents could be classified into multiple worldviews it is not possible, however, to use a χ^2 test to compare expected and observed frequencies of risk groups across the five worldview classifications as this would violate the assumption of independence (i.e. respondent must not belong to more than one cell). Table 1 indicates the predominant worldviews expressed by participants and the likelihood of rejecting sea level rise risks, being unsure or being very concerned about sea level risk risks.

Table 1: Predominant Social Functionalist Worldviews for Different Sea Level Rise Risk Groups Assessing Managed Retreat Policy

	Reject Sea Level Rise Risks	Unsure about Sea Level Rise Risks	Concerned about Sea Level Rise Risks
Intuitive scientist	√	√	√
Intuitive economist	X	√	√
Intuitive politician	X	X	X
Intuitive theologian	√	X	X
Intuitive prosecutor	√	√	X

- **Intuitive scientists**

More than half the respondents from each of the sea level rise risk profile groups were classified as intuitive scientists. The three sea level rise risk groups did not differ significantly in their frequency of intuitive scientist classifications ($\chi^2 = 2.52$, df = 2, $p > .05$), suggesting that all three sea level rise risk groups were equally likely to discuss scientific evidence, past or forecasted sea level rise trends, theoretical causation or discuss their personal experience.

- **Intuitive economists**

A significant difference was found between the frequency of intuitive economists classifications for the three sea level rise risk groups ($\chi^2 = 74.85$, df = 2, $p < .001$). The "rejectionists" group were much less likely to discuss economics than the other two sea level rise risk groups. It is possible that many of the respondents rejecting sea level rise found it difficult to discuss economics as they did not consider climate change to be a risk. On the other hand, intuitive economists who were "concerned" or "unsure" about climate change were more likely to express concerns about compensation and economic details of retreat contracts.

- **Intuitive politicians**

Few respondents were classified as intuitive politicians with four "rejectionists", seven "unsure" and seven "concerned" respondents classified as politically driven. Possibly respondents are not inclined to justify their personal risk perceptions towards sea level rise to a legitimate authority at this point in time.

- **Intuitive theologians**

A significant difference was found between the frequency of intuitive theologian classifications for the three sea level rise risk groups ($\chi^2 = 138.93$, df = 2, $p < .001$). "Concerned" and "rejectionist" respondents were much more likely to be classified as intuitive theologians than those in the "unsure" group. Indications of a theological mindset were angry responses from respondents. A number of "rejectionists" believed it was morally wrong to publicly discuss the contributions of humans to climate change, that the sea levels might be rising, or that humans should be attempting to reduce their impact on the environment. "Rejection-

ists" appeared morally outraged at the prospect of a retreat scheme or the need for retreat. Conversely, several "concerned" respondents demonstrated intuitive theologian logic by arguing that they considered it morally wrong to further develop land near the coast or that it may be wrong to deny sea level rise is occurring.

- **Intuitive prosecutors**

A significant difference was found between the frequency of intuitive prosecutor classifications for the three sea level rise risk groups ($\chi^2 = 111.27$, df = 2, $p < .001$), with many reasons why respondents were attempting to make other parties accountable in the sea level rise policy debate. A general distrust in government was expressed, and examples of government interference were cited as well as concerns over denial of liability by local government. Others questioned whether a sea level rise retreat policy would affect or hurt individuals and whether the retreat policy would violate land rights or benefit opportunistic or dishonest business people. The sea level rise science and scientific institutions providing supporting evidence were also challenged. "Concerned" respondents reflecting an intuitive prosecutory worldview mentioned other issues such as whether the government would stop coastal development or whether current owners would accept responsibility if land title arrangements changed.

Discussion

This research reveals that people commonly use more than one decision-making framework when assessing a managed retreat policy. People intuitively act as scientists, economists, prosecutors and theologians when considering the many complex issues surrounding a managed retreat policy in response to risks of inundation. Government policy frameworks that are based largely on science and economic concerns may not be compatible with the prosecutor and theological perspectives of some actors. Policy-makers should be acutely aware that angry responses, which are the hallmarks of intuitive prosecutor and intuitive theological frameworks, are not necessarily indicative of people who are irrational or ill-informed. Anger espoused in response to policy implementation can be a functional and effective means to achieving individuals' goals such as the abandonment of the proposed retreat policy or achieving group cohesion when threatened by circumstances seen as a moral threat.

Those rejecting sea level rise risks or "rejectionists" had a tendency to mention basic or more sophisticated scientific principles and technical details to develop their worldviews, as did many "unsure" and "concerned" individuals. What differentiated the rejectionist group was a greater reliance on construing issues with an intuitive theological framework. By doing so, they were able to discount the possibility of future negative economic and social consequences if the risks of accelerated sea level rise were to be simply ignored. The "rejectionist" group was extremely selective in what they considered to be science and few "rejectionists" were willing to acknowledge the legitimacy of any scientific evidence that was consistent with accelerated sea level rise. Few of the "rejectionist" group discussed science or economic criteria alone, being more concerned with emphasising morality or honesty issues.

Many respondents insisted that sea level rise be dropped from the policy and funding agenda. Interestingly, few "rejectionists" were willing to even contemplate a managed retreat scheme. Pursuing such a sea level rise policy will potentially draw policymakers into direct

conflict with a "rejectionist" group. Effective engagement with people over sea level rise will require recognition or acknowledgement of their "rejectionist" views, their sacred norms, and awareness that discussing sea level rise risks may continue as a taboo topic and therefore communications should acknowledge their strongly held views to then present more moderate paradigms.

All groups drew on different social functionalist frameworks when discussing planned retreat policy. Most "concerned" respondents referred to science and/or economics when expressing their opinions, thereby expressing a "solution orientation" to managed retreat policies. Engagement with the "concerned" group would require discussions about the various risks posed by sea level rise, potential solutions and the economics of the retreat options. Respondents who are "unsure" about sea level rise would require information about potential sea level rise threats and links between science and economics. The "unsure" group would also require establishment of fair and transparent rules that would reduce benefits for unethical opportunists and development of inappropriate and inequitable outcomes. Engagement with the "unsure" group should include mention of the economic and scientific consequences associated with sea level rise risks whilst emphasising the fairness and transparency of the policy, in order to appease any prosecutory concerns and ensure a successful dialogue.

In many circumstances community engagement on the topic of managed retreat will involve a mixture of people who reject, are unsure about or are concerned about the risks of sea level rise. Hence, it is likely that a broad range of topics will be raised, such as interest in learning more about sea level rise predictions, sceptical critiques of sea level rise predictions, concerns about housing values and the general effect on the community, alternative options to mitigate the risk of sea level rise, requests for information on the finer details of managed retreat policy and concerns about being cheated or treated unfairly through the enactment of new policy. It is also likely that issues of morality and the values of the community will be hotly debated. This means the processes, organisational structures and institutions needs to accommodate and allow for this to occur.

Conclusion

Using the social functionalist framework to understand more about responses from individuals in communities considering a managed retreat policy can assist environmental planners and managers to anticipate some of the conflicts which may arise and design better ways to engage with coastal communities. A framework has been developed to complement small-scale, deliberative processes that have been used to engage with coastal communities to date in Australia. The framework is useful in formulating discussions and planning for adaptation to the possible future impacts of climate change. A key strength of the functionalist frameworks analysis presented in this paper has been to identify the range of positions (more than one worldview) that can be held by actors. This framework emphasizes the importance of firmly entrenched beliefs, and how to engage communities in planned changes in response to actions to protect against coastal inundation. While it may not be possible to avoid conflict over complex issues involving long-term risks, it may be possible to understand more about the many concerns that can arise during an engagement process that encompasses pluralistic worldview preferences. Social functionalist frameworks indicate that communities will require economic and scientific information, and consideration of issues of fairness and equity,

transparency of process and recognition of social normative behaviour while maintaining moral integrity when managed retreat policies are introduced.

Above all, the framework can assist environmental planners and managers to understand and anticipate some of the interests, strategies and conflicts which may arise during an engagement process and to address the conundrum by approaching concerns with a greater understanding of what may be driving the protest and what may be required to inform and appease special interest groups, when planners and managers are developing policies that may affect different segments of the community.

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