



The administrator's dilemma: Closing the gap between climate adaptation justice in theory and practice

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ARTICLE INFO

Keywords:

Justice
Environmental Justice
Climate Change Adaptation
Managed Retreat
Practical Applications
Mental Models

ABSTRACT

Justice theory is intended to guide practical choices, but justice theories struggle to inform many decisions that must be made in climate change adaptation practice. This paper highlights gaps between theory and practice by analyzing the justice dimensions of dilemmas routinely faced by adaptation administrators, using the example of property acquisitions to ground the analysis. Justice theories struggle to assist decision-makers in: prioritizing distribution of resources; distributing programs that cause both harms and benefits; weighing uncertain harms and benefits; identifying participants and resolving conflicts in participatory processes; and redressing historic injustices. Proposals to improve adaptation justice that do not address one or more of the practical dilemmas faced by administrators are unlikely to advance the cause. Absent theoretical or policy guidance, decisions are often shaped by administrators' unconscious heuristics such as views on the role of government and the purpose of buyouts. Tailoring justice-relevant decisions to local contexts may provide greater benefits than a universal approach to justice, but a relative approach is most likely to be just when justice-relevant decisions are transparent and informed by theoretical and empirical work. Transparency is critical for accountability, evaluation, and policy learning. Justice decisions are often constrained by limited authority, resources, and institutional goals, so achieving greater justice in climate adaptation may require changes in the larger governance systems within which adaptation decisions are made. More nuanced evaluations of adaptation justice, more comparative analyses, enabled by greater transparency in practice, and more holistic approaches to adaptation governance are recommended moving forward.

1. Introduction

Climate change adaptation policies have the potential to redress social injustices or create, perpetuate, and exacerbate them (Thomas and Twyman, 2005; Adger et al., 2006; Paavola, 2008). Decisions about where and how to allocate resources for adaptation are inherently decisions about justice: about which communities and people receive support and how those decisions made. Evaluating the justice implications of adaptation, however, is complicated. Personal values and experiences shape what individuals consider 'fair' adaptation (Adger, 2016; Lau et al., 2021), and different perspectives on justice – such as utilitarianism or distribution to those in most need – lead to different allocations (Thaler and Hartmann, 2016; Thaler et al., 2018). What is considered fair at one temporal or spatial scale may be unjust at another (Cooper and McKenna, 2008). The goals of adaptation are contested, and numerous stakeholders define and re-define the goals throughout time, making adaptation a difficult problem to solve, much less to solve

in a just manner, which is why adaptation justice is emerging as a major area of empirical and theoretical research (see, e.g., Bulkeley et al., 2013; Termeer, Dewulf and Biesbroek, 2019; Molenveld, van Buuren and Ellen, 2020).

The analysis herein adopts techniques from legal scholarship to bring theory and practice into conversation by grounding a critical analysis of justice theory in its application to a specific type and practice of climate adaptation. The analysis draws on justice scholarship, published case studies of buyouts and managed retreat, and interviews with practitioners (Siders and Gerber-Chavez, 2021). While there are more theoretical framings of adaptation justice (see, e.g., Malloy and Ashcraft, 2020), many climate mitigation justice discussions are "focused, in part, on the pragmatic question of their applicability to the current dilemmas of both climate change and the limitations of global governance" (Schlosberg and Collins, 2014, p. 365), and this analysis seeks to expand this pragmatic consideration to adaptation justice. Bringing theory and practice into close conversation reveals continuing gaps in the

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applicability of justice theory to adaptation practice: decision points routinely faced by adaptation administrators where existing theory fails to guide decisions. Identifying such gaps is a first step towards improving both theory and practice. Numerous “solutions” for improving adaptation justice have been proposed – such as increasing participation or consideration of equitable distribution – but these proposals are often too high-level to resolve practical dilemmas and therefore fall short of closing the gap. The aim of this paper is to improve future solutions, first, by identifying specific gaps that require resolution; second, by arguing for greater transparency from adaptation administrators in how and why they make justice-relevant decisions and greater specificity from scholars in their proposed solutions; and third, by recommending steps to close the gap between theory and practice, including more nuanced evaluations of adaptation justice, more comparative analyses, and more holistic approaches to adaptation governance. Achieving greater justice in climate adaptation is not likely to be simple, straightforward, or without trade-offs. This does not make it any less critical to pursue.

2. The many justice-relevant decisions within an adaptation

Numerous adaptation actions pose justice challenges for administrators, but the challenges may be seen perhaps most clearly in the case of managed retreat. Managed retreat – also referred to as planned retreat, strategic relocation, or resettlement (Bukvic, 2015) – refers to the purposeful, coordinated, supported movement of people or assets away from highly-hazardous places (Hino et al., 2017; Siders, 2019). Retreat is one of the main categories of adaptation (Doberstein et al., 2019), has occurred throughout history (e.g., McAdam, 2014, 2015a; Donner, 2015), is deployed widely (e.g., Wilmsen and Rogers, 2019; Bower and Weerasinghe, 2021; Forsyth and Peiser, 2021), and has been described as ‘unavoidable’ under certain conditions (Jay et al., 2018). Managed retreat is highly controversial in part because of its potential to create or exacerbate injustices. Some critiques focus on the way retreat is managed: e.g., whether the retreat is coerced (de Vries and Fraser, 2012; Ajibade, 2019), improves well-being (Binder et al., 2020a, 2020b; McMichael and Katonivualiku, 2020; Bergmann, 2021; Koslov et al., 2021), disproportionately affects or overlooks certain populations (Maldonado et al., 2013; Marino, 2018; Siders, 2018; Loughran et al., 2019), or is used as an excuse for governments to displace disenfranchised peoples (Sipe and Vella, 2014; McAdam, 2015b; Ajibade, 2019; Yarina et al., 2019). Others note that even if these pitfalls are avoided, relocation may inherently disrupt place attachment, place-based identity, and community connections (see, e.g., Schlosberg, 2012; Adams, 2016; Anderson, 2019; Binder et al., 2019; Jessee, 2019; See and Wilmsen, 2020). Managed retreat is therefore likely to simultaneously harm and benefit participants and affected communities (Mcnamara et al., 2018). Managed retreat is not the only adaptation strategy that alters the relationship between people and place (see, e.g., Clarke et al., 2018), nor is it the only strategy that involves simultaneous harms and benefits, but it is perhaps the most extreme example of this duality and therefore consideration of it may shed light on the pursuit of just adaptation in other contexts.

Although there are many types of managed retreat (Hino et al., 2017), the goal of this paper is to consider specific practical dilemmas, so herein the analysis will focus on voluntary property acquisitions (“buyouts”) in the United States. This type of managed retreat occurs within specific legal, policy, and cultural contexts that shape the ways administrators experience the dilemmas described herein, but – as evidenced by the justice concerns noted above – many of the ethical dilemmas they pose arise in other types of managed retreat and adaptation and in global contexts. In fact, many of these justice dilemmas arise anytime decisions are made about where and how to offer resources and whether and how programs benefit and harm communities. Buyouts are therefore a specific case to aid in grounding the analysis, but the questions raised herein should be considered in broader climate adaptation

and decision-making contexts.

In the United States, buyouts are the most common type of managed retreat (Dyckman et al., 2014), with one federal agency alone funding buyouts in over 1100 communities in 49 states for more than three decades (Mach et al., 2019; Elliott et al., 2020). Buyouts may use federal, state, or local funds but are most often administered at the local level, leading to widespread variation in how they are implemented (see, Greer and Binder, 2016; Mach et al., 2019; Siders, 2019). Generally, a local government decides to use buyouts after a disaster, requests federal and state financial support, and offers to purchase damaged or risk-prone homes, usually at pre-disaster market value (see Siders and Gerber-Chavez, 2021, or Greer and Binder, 2016, for details). Property owners decide whether or not to sell (see Dundon and Camp, 2021, for a discussion on the role of renters); if they accept the buyout, the residents relocate, the house is demolished, and the land is retained as open space (see Zavar and Hagelman, 2016, on post-buyout land use). There is potential for injustice at every stage of the process, from which local governments seek and receive support to who benefits from post-buyout land uses. U.S. federal policy on buyouts limits its guidance on what is just to the need for property owners to receive fair compensation, for programs to be cost-effective, and for buyouts to be voluntary (although voluntariness is not required by all federal agencies). Without theoretical or federal policy guidance on how to make just decisions, administrators make decisions to the best of their ability, within their constraints and context, and may come to opposing views. Although one would hope that administrators would learn from others’ experiences, there is little evidence of cross-program learning or improvement over time (Greer and Binder, 2016). Despite more than 150 federal program reviews (FEMA, 2011) and several dozen academic studies (e.g., Greer and Binder, 2016; Siders, 2018; Loughran et al., 2019; Binder et al., 2020a, 2020b; Koslov et al., 2021), no buyout program, to my knowledge, has been evaluated and considered just by all stakeholders. This may indicate that these programs have been unjustly administered. However, it is also an indicator of fundamental disagreement as to what constitutes a just buyout (see, e.g., Siders and Gerber-Chavez, 2021).

For example: to promote justice, should buyouts occur primarily within wealthy communities or less affluent ones? White communities or communities of color? On the one hand, buyout funds present an opportunity to adapt, so if buyouts are disproportionately offered to or accepted by wealthy or white communities, it could represent an unjust allocation of resources by privileging already privileged populations (see Maldonado et al., 2013; Marino, 2018; Beninsca, 2019; Loughran et al., 2019). Rawlsian justice would argue for allocation of resources to those in greatest need. Following this logic, some buyout administrators have therefore expressed the opinion that buyouts should be prioritized in low-income or historically marginalized communities (see Siders and Gerber-Chavez, 2021). They note that less affluent residents are less able to afford home elevations or other privately funded adaptation measures, have fewer resources to support recovery after a disaster, and perhaps need greater assistance to relocate. Black, Indigenous, and people of color (BIPOC) may be dangerously exposed to hazards precisely because they have experienced historical and ongoing injustices such as racism, forced relocation, segregation, displacement, or disinvestment (see, e.g., Martinich et al., 2013; Maldonado et al., 2016; Liévanos, 2020). Offering priority access to buyout funds could be one step towards redressing these historical wrongs.

On the other hand, offering buyouts in low-income communities or BIPOC communities might continue legacies of displacement and disinvestment. Less affluent residents may have difficulty finding safe, affordable replacement housing or may feel financially pressured to accept buyouts even if they do not wish to move (de Vries and Fraser, 2012; Siders, 2018). For communities who are exposed or vulnerable because of historical or ongoing discrimination, disinvestment, or displacement, even offering buyouts may be a form of structural violence that perpetuates injustice (de Vries and Fraser, 2012; Phillips et al., 2012). If an administrator decides not to offer buyouts, or if

residents refuse a buyout offer, there is no guarantee that resources for other types of adaptation will be forthcoming (see, e.g., Koslov et al., 2021). Finite funding requires administrators to prioritize access to buyout funds across and within communities, and there is disagreement on how justice should inform that prioritization. Even if administrators could offer buyouts to all residents in all communities, historical inequities may cause uneven acceptance (although evidence is mixed as to how income and race influence buyout acceptance rates; de Vries and Fraser, 2012; Robinson et al., 2018; Loughran et al., 2019; Elliott et al., 2020), and uneven acceptance can further exacerbate injustices, such as by displacing BIPOC communities or enabling white flight (see Zavar et al., 2015; Loughran et al., 2019; Martin and Nguyen, 2021). Given these considerations, administrators face the dilemma: *what is a just process for deciding how and to whom buyouts should be offered?*

As the rest of this paper will explore, there may be no single best way to answer this question or several related questions that arise (see Fig. 1). Even a decision not to decide – by not offering buyouts at all or by deferring to the community's decision – has ethical implications. Lacking theoretical or policy guidance, administrators make decisions based on their financial and institutional constraints, their mental models and worldviews, and their best understanding of the local context. This plurality of approaches may allow administrators to tailor programs to their local geographies, histories, and cultures. If decisions were made explicitly and transparently, policymakers and researchers could compare how different policy designs and practices affected participants and could provide evidence to inform administrators on effective ways to tailor justice-relevant decisions. Indeed, this type of explicit transparency would be a major step forward. However, most justice-relevant buyout decisions are not made explicit or transparent, few studies have compared how different decisions affect participant outcomes, and there is a documented lack of learning over time and across programs (Greer and Binder, 2016). Some administrators are well-versed in the justice challenges of buyouts and make decisions based on explicit considerations. However, many buyout administrators implement buyouts part-time, in the aftermath of a disaster, without prior experience with the buyout process, and it would be optimistic to hope that they have the time to consider competing justice theories when making decisions. Rather, the dearth of theoretical and policy guidance creates a scenario in which outcomes such as the likelihood of a resident receiving a buyout offer and the amount of assistance they receive depends to large extent upon the personal views and values of the administrator. These heuristic short-cuts and the ways in which they inform the buyout process are rarely made explicit or transparent, a situation that limits democratic accountability, theoretical evaluation, and policy learning. Although these challenges may seem hypothetical,

the dilemmas presented in the next section (see also Fig. 1) must be answered by buyout administrators every year across the United States. Addressing them is therefore not only a means to advance environmental and justice scholarship but a crucial step in improving the justice of adaptation in practice.

3. Practical dilemmas requiring justice guidance

Theories of justice are intended to guide practical decisions, but current theories and proposed solutions in the climate adaptation literature rarely solve buyout administrator challenges. This section identifies several gaps between justice theory and practice (see Fig. 1) as a first step towards bringing the two into closer conversation and thereby providing greater guidance for adaptation administrators.

There are numerous theories of justice (see, e.g., Marx, 2000; Chatterjee, 2011; Duvert, 2018). This paper will draw primarily on the ideas that just actions should serve either the greatest number of people (Mill, 1863) or those in greatest need (Rawls, 1971) and on several approaches to environmental justice including: equitable *distribution* of benefits, burdens, and opportunities (Bullard, 1994; Dobson, 1998); the ability to *participate* fully in processes that affect one's life (Young and Allen, 2011; van den Berg and Keenan, 2019); the ability to engage in fundamental *capabilities* (Nussbaum, 2011; Holland, 2012; Schlosberg, 2012); *recognition* of the harms caused by mis-, non-, or mal-recognition of people, cultures, and values (Whyte, 2011; Young and Allen, 2011); *recognition* of the processes and social structures that create inequities and efforts to make *reparations* (Buxton, 2019). Justice for the environment itself and for future generations are also considered, although secondarily, as appears common in current practice (Schlosberg and Collins, 2014).

We could begin our analysis of how justice informs buyout decisions with any of these theories, as the questions raised often circle back on one another (see Fig. 2), but we will start with distribution since it is a traditional departure point. Only by explicitly analyzing these decision points and identifying the justice-relevant tensions and trade-offs inherent within them, can the adaptation field work towards more just resolutions.

3.1. How to distribute an offer that is both harm and benefit?

If buyouts were a benefit to individuals and communities, Rawls and most distributive justice theories would guide administrators to preferentially offer buyouts in communities and to individuals who have historically had less access to resources and opportunity (e.g., Paavola, 2008). If buyouts were a harm, then buyouts should not be imposed upon these same people. Utilitarianism would argue for buyouts-as-benefit to be offered to the greatest number of people and for buyout-as-harm to be imposed on the fewest. However, if buyouts cause both harms and benefits, as seems to be true (see McNamara et al., 2018), then theory is less clear on how to allocate offers. Buyouts help people avoid hazards and the financial and emotional stress they can cause; but buyouts simultaneously disrupt connections to place and neighbors (see Koslov et al., 2021). How an individual weighs these trade-offs (e.g., whether reduced stress is more or less important than place attachment) is likely to depend on deeply personal considerations (e.g., how much they like their neighbors, how much stress they experience) as well as the history that led to hazard exposure, the way in which the buyout program is implemented, and where the person moves after the buyout. Individuals in the same buyout program may (and often do) disagree as to whether the harms or benefits were greater. Family members within the same household may disagree (and views may be influenced by age and gender). Perspectives may change over time, as people create new social networks and place attachments or as subsequent disasters in their old neighborhood influence risk tolerance.

A buyout administrator only controls how the program is implemented (and may indirectly influence where people move, as through

- a) Which residents to offer buyouts? How to decide? Who participates in deciding?
- b) If budget is fixed, purchase fewer homes (at higher price) or more homes (lower price)?
- c) Provide less support to more residents or more support to fewer residents? At what point is offering more coercive?
- d) How weigh uncertain costs and benefits? Which stakeholder costs and benefits are included (scale)? How handle disagreements on what to include or prioritize?

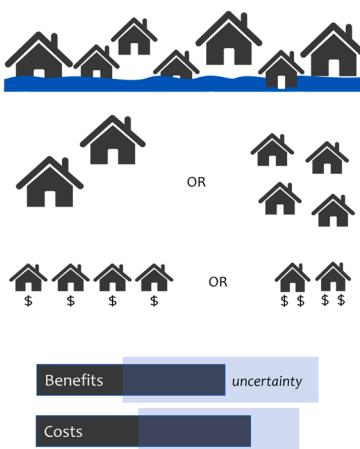


Fig. 1. Buyout administrators are faced with several practical dilemmas. In the absence of policy or theoretical guidance, administrators answer based on heuristic shortcuts informed by personal values and institutional constraints.

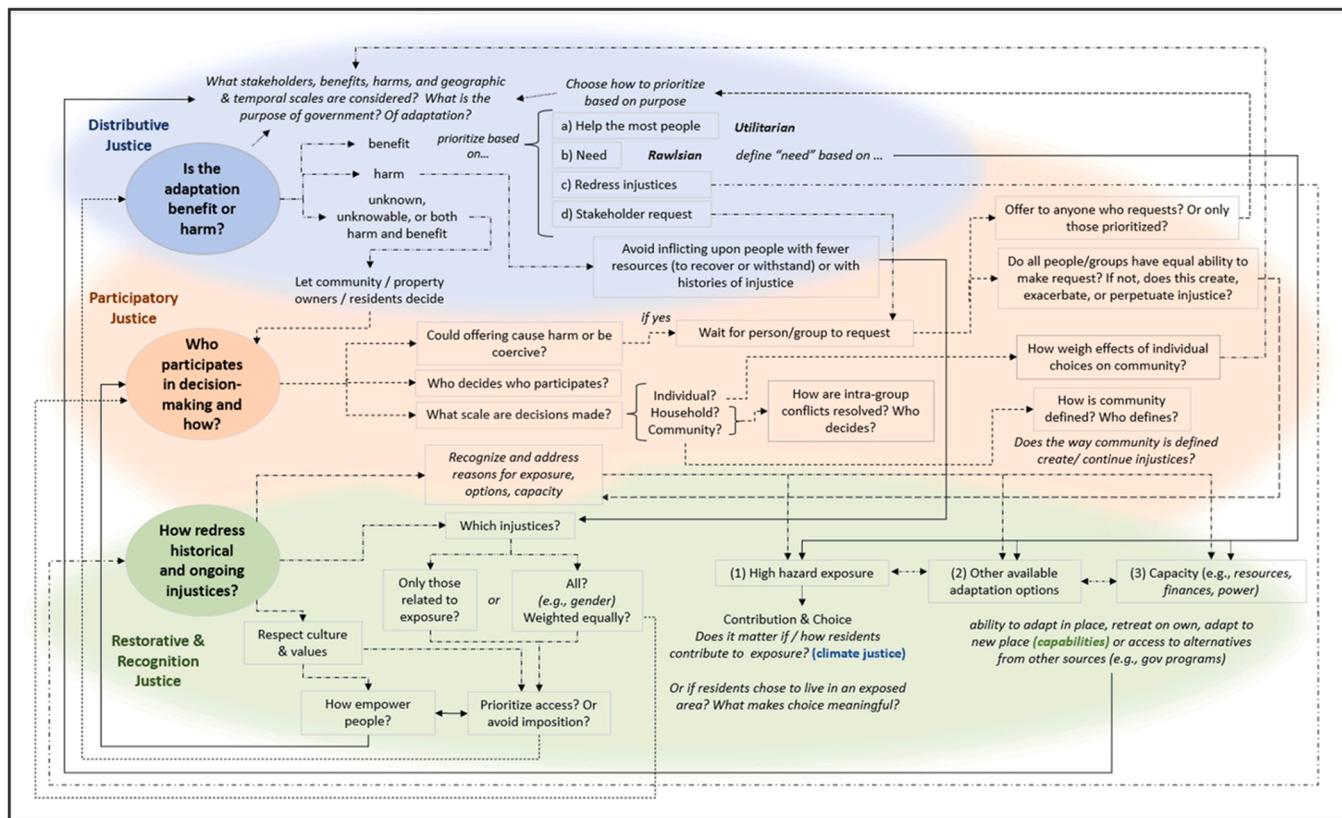


Fig. 2. The complicated decision pathways illustrated in this figure represent some of the questions administrators must consider when deciding where and how to allocate adaptation resources. The intent of the figure is to convey the complexity of the issues involved: only answering the main questions (those in darker circles) is insufficient. One must resolve the subsequent questions to make true progress. To read the diagram, begin with one of the three main questions and follow the arrows as in a decision tree. Most paths eventually create a loop, so you can start at any point.

the price paid). Therefore many of the factors that determine whether a buyout causes more harm than benefit or the reverse, and so whether it should be prioritized or avoided in a community, are beyond the administrator's control (although see a suggestion by [Tubridy et al. \(2022\)](#), that managed retreat programs should exert control over where residents relocate so as to maximize social benefits, a proposal that echoes justice debates about the relative merits of paternalism versus choice: a debate beyond the scope of this paper and whose resolution no doubt depends on cultural views on the relative importance of individual choice and social benefit). Some elements of buyout design that affect participant well-being may not be known or even knowable until after the program is completed (e.g., an individual may not know themselves how they will weigh reduced stress and loss of neighbors until it occurs, and their opinion may change over time). If the administrator cannot know, in advance, whether residents will view or experience buyouts as a harm or benefit, how should the administrator distribute offers? As an example, buyout administrators in several states are mapping socially vulnerable populations in an effort to increase their consideration of distributive justice. However, even as they create these maps, several administrators have raised questions about what social characteristics should be mapped and how the maps should be used: whether buyouts should be prioritized or avoided in a community mapped as highly socially vulnerable. A recommendation for administrators to consider distributive justice is therefore not specific enough to resolve the dilemma. Theory and policy must be more specific as to how information should be used.

3.2. Over what scale should harms and benefits be distributed?

Distributive justice theories and adaptation policies are also largely silent on which harms and benefits, which scales, and which

stakeholders should be considered and how their interests should be weighed (see, e.g., [Cooper and McKenna, 2008](#)). Buyout administrators could consider the benefits and harms that accrue to an individual participant, the community, or region, state, or nation. A utilitarian approach that maximized benefit for the greatest number of people might place great weight on the benefits of the community, even at the expense of individual participants, although few administrators would likely consider this just. Administrators could consider future residents or non-human species (e.g., coastal ecosystems). For example, the continued presence of buildings on eroding shorelines or riverfronts may detrimentally affect ecosystems, result in narrowing beaches and loss of public access to waterfronts, incur community-wide costs to maintain local infrastructure, and even require emergency responders to risk their lives patrolling dangerous waterways (see, e.g., [Caldwell et al., 2015](#); [Reineman et al., 2016](#)). The harms created by not offering buyouts may grow over time as climate change exacerbates hazards, especially if other adaptation alternatives are not technologically, financially, or politically viable (often a decision not within the buyout administrator's control). It is not clear how (or even whether) these long-term and community costs and benefits are being or should be weighed against the interests of the residents who would be asked to relocate.¹ Greater transparency in how harms and benefits are calculated would enable greater accountability. Research that explicitly compares justice at different scales (e.g., [Cooper and McKenna, 2008](#); [Thaler and Hartmann,](#)

¹ This raises the question of whether (and if so, in what circumstances) community benefits might make it fair to *require* relocation, but that question requires an in-depth analysis beyond the scope of this paper, so all buyout offers discussed herein are presumed to be offers that a resident or property owner may voluntarily accept or refuse.

2016) would enable administrators to make more informed decisions about the trade-offs inherent in their approach.

3.3. Who decides who participates?

If an administrator decides, in the interests of participatory justice, to defer to the community's decision about whether and where to engage in buyouts (Holland, 2017; Malloy and Ashcraft, 2020; Tubridy et al., 2022), the administrator must still identify "the community" or defer to someone else's definition of "the community." If the administrator gives responsibility for administering the program to a community member, that person then becomes an administrator and faces the same dilemma. Geography, group membership, status, and power dynamics are all likely to shape who participates in a community decision, and these are not uncontroversial criteria. Geographic boundaries are often socially negotiated and therefore are not a straightforward way to determine who is a member of the community. For example, in Oakwood Beach, New York, administrators struggled to identify the borders of the 'Oakwood Beach' neighborhood, since different residents had different mental boundaries of their community (Binder and Greer, 2016). The relocation of Isle de Jean Charles, Louisiana (although not a buyout program), required a decision as to whether community decisions should involve all members of the Isle de Jean Charles band of Biloxi-Chitimacha-Choctaw Tribe (including members not residing on the island), all residents of the island (including one non-tribal resident), or the United Houma Nation (another local tribe with whom some residents identified and who also claimed cultural and historical ties to the island) (Jessee, 2019). Notably, this example illustrates how systemic injustices shape subsequent decisions: the Isle de Jean Charles band of the Biloxi-Chitimacha-Choctaw separated from the United Houma Nation after their petition to be federally recognized as a tribe was denied (Crepelle, 2002). Were they a federally-recognized tribe, they would have been legally empowered to administer the relocation themselves (though they would still have to decide internally who should participate in relocation decision-making).

Beyond geographic boundaries, status and power also shape participation. For example, renters currently do not decide whether their residence is sold; that decision is made by the property owner, even if the renter is a long-term resident and the landlord is not (Dundon and Camp, 2021). Households are treated as homogenous entities, but individual members of the household may disagree about the merits of relocating. Survey data suggest women are more willing to relocate after a disaster (Kirschenbaum, 1996) but men have more geographically-constrained jobs that may constrain relocation options (Benson, 2014). If households are given a single voice, their decision may depend on household gender power dynamics and finances (e.g., whose name is on the deed or whose livelihood is prioritized). Elderly household members and children may be more or less willing to relocate but have less say in household decisions. The seemingly straightforward solution to use participatory processes is therefore not straightforward: it creates additional challenges about determining who participates and how to navigate competing interests among participants. Challenges in deciding who participates are not unique to buyouts but arise in a wide range of community decision-making processes (see Kepe, 1999). The fact that this dilemma arises in so many adaptation and community decision-making contexts makes it even more important for justice theory to provide insight for its resolution.

3.4. How to handle disputes within the community?

Participatory processes in which a community decides whether and where buyouts should be offered must involve a process for handling disputes among individuals within the community. This is an under-researched area of managed retreat and adaptation decision-making. In the United States, individuals are not able to apply for buyout funds from the federal government, so an individual must convince the local or

state government either to fund the buyout or to apply for federal funds on their behalf (FEMA, 2007). Some local governments refuse to support buyouts because they would lose property tax revenue and be required to pay to maintain the land after the buyout (Salvesen et al., 2018; BenDor et al., 2020). If bought out homes are not replaced by new development, it might become more difficult for the local government (and remaining residents) to pay for public services and amenities. If the community – either through a vote or their elected official – decides not to offer a buyout to residents who want one, is this unjust? If individuals accept buyouts, and thereby impose financial and social costs on those who stay, is that unjust? What about costs imposed on neighboring communities (Binder et al., 2020a, 2020b; Martin and Nguyen, 2021)? Refusing to offer buyouts might place residents in a difficult position, where their only options are to reside in a house they feel is unsafe, to pay for expensive protective measures, to abandon their house (a major financial asset), or to sell the house to another family who will face the same limited options. Some residents have expressed the view that selling to another family in these circumstances is unethical (see DeBone, 2021), though others have taken this course without apparent qualms. If the state government intervenes to offer buyouts to residents who want to be bought out, is the state government supporting justice by enabling individual capabilities (e.g., Nussbaum, 2011; Schlosberg, 2012) or contravening justice by opposing the community decision?

The process by which a community makes their decision may disrupt personal and communal relationships (the very harms caused by buyouts). For example, in Ellicott City, Maryland, residents disagreed so strongly about whether to offer buyouts in town that one resident called a former friend 'despicable' for valuing the historic nature of the town over a family's desire to escape emotional trauma (Hersher, 2019). Buyouts that require a unanimous decision by a community may create social pressure on holdouts, while buyouts that enable household-level decisions may divide communities and give too little weight to residents who remain. While administrators may be tempted to let the community decide, doing so may be an abrogation of responsibility and place additional burdens on the community. Without greater insight on these dilemmas, suggestions by adaptation scholars to increase participation in buyouts or to leave decisions to "the community" are insufficient. Future suggestions will need to grapple with one or more of these dilemmas to provide greater insight for practice, and future participatory programs will need to document how they decide who participates and how processes navigate trade-offs among participants to enable accountability and evaluation.

3.5. Does the community have the power to make their will known?

If an administrator offers buyouts only to communities who ask for buyouts, then only communities with the ability to come to a cohesive decision and to make that decision known will receive buyouts. Those communities who are more aware of funding sources, have political power to make their voices heard, or have capacity to apply for funding will be more likely to receive assistance. For example, seven communities in New York petitioned for buyouts after Superstorm Sandy, but not all were funded. Oakwood Beach was reportedly successful because they had residents who knew about the process, petitioned for a buyout, and leveraged personal connections in the state government to support buyouts when the city government refused (Brady, 2015). One of the reasons why buyouts are thought to occur in wealthier, denser counties across the United States is that these counties have the staff and resources to pursue federal funds (Mach et al., 2019; Elliott et al., 2020). The federal government is making efforts to reduce these hurdles and to provide more funding to communities who have historically received less aid (e.g., the Justice 40 initiative), and these steps will need to be combined with state-level initiatives, streamlined bureaucratic processes that reduce burdens on local capacity, and new methods for transparently integrating justice into climate adaptation allocations. Until these hurdles are resolved, calls for buyouts to be used only when

‘the community’ requests buyouts will inherently benefit those communities who are able to make the request.

3.6. How should past injustices influence the process?

Recognition justice requires additional consideration for historical wrongs and for local context and culture. However, justice theories provide less guidance on what this consideration entails or how to prioritize among historically-wronged communities. For example, gender is one trait that affects how people experience disasters and residential mobility (Magdol, 2002). Yet the discussion of gender in the buyout academic literature, or consideration by practitioners, is severely limited, and practitioners have little guidance on whether or how consideration of gender inequality should inform the way they implement buyouts.

Even if administrators properly consider sources of past injustice and current contexts, it is unclear, for example, how justice theory should have informed the Department of Housing and Urban Development (HUD) decision to the fund the relocation of either the Alaska Native Village of Newtok or the Isle de Jean Charles band of the Biloxi-Chitimacha-Choctaw in Louisiana (Flavelle, 2016). Naturally, decision-makers hope to have funds for all, and one answer is to increase funding so that sufficient resources are available to support all communities. However, most programs lack the authority to increase their budgets, so this is a broader governance challenge that needs to be resolved not at the level of the adaptation administrator but at the governance system level (a recommendation that will be discussed further in the way forward section). Disaster recovery funds, for example (one of the sources of funding most often used for buyouts), are authorized by Congress, so neither buyout administrators nor federal agencies can easily choose to increase the available funding.

Even if funding were infinite, administrators would still face a dilemma: should communities who have experienced historical injustices receive priority access to buyout funds or not have relocations (or even potentially harmful conversations about relocation) imposed upon them? Participatory justice is particularly important in these contexts to empower communities, yet it introduces a new challenge: handling conversations about relocation in ways that do not perpetuate trauma or create community divisions. This may require professional facilitation and additional research into how community conversations are best initiated and conducted (e.g., Lemma et al., 2019). This work has been growing in other fields and insights will need to be transferred to adaptation to improve practice. For justice theory, consideration of the potential dangers of participatory processes and how they can be navigated might yield both theoretical advances and practical insights.

3.7. Prioritize more people or more aid?

With a fixed budget, an administrator can purchase a limited number of homes. If an administrator offers buyouts for lower-value homes, they may be able to purchase more homes, help more families, and create more open space to serve the community. However, lower-value homes are likely located in less affluent neighborhoods, so acquiring buyouts in these areas may disproportionately affect an economic portion of the population. On the one hand, the principles of utilitarianism to help the greatest number and Rawlsian justice to help those in most need might align to argue for buying out the largest number of homes in less affluent neighborhoods. However, as discussed above, procedural, participatory, and recognition justice might question *why* these homes are less valued (e.g., are they devalued because of a history of racism or disinvestment) and whether residents with fewer financial resources might be unduly pressured to accept buyout offers (feeling they have few or no viable alternatives) or struggle to find affordable replacement housing.

An administrator could choose to pay less for each home – one administrator described this as ‘staying lean’ and reducing overhead – and thereby acquire more homes (Siders and Gerber-Chavez, 2021). If

an administrator thinks their responsibility is to use the fewest government resources to help the most people, this may seem like the right answer. Alternatively, the administrator could pay more for each home and provide more services but afford to purchase fewer homes. Providing more aid might better empower the administrator to redress historical injustices (e.g., to pay more for homes in Black neighborhoods that have been systematically devalued, (Perry, 2020)), and it could help residents to find replacement housing that is safe and provides similar community and livelihood opportunities (McGhee et al., 2020). U.S. post-disaster assistance has been criticized for replacing what individuals had before the disaster, so low-income residents receive less than wealthy ones (Lynn, 2017; Howell and Elliott, 2018). Offering additional funds could help redress this disparity. On the other hand, offering additional money might further pressure residents to accept buyouts, and the pressure might be particularly strong for residents who feel unable to afford rebuilding or other adaptation measures (de Vries and Fraser, 2012; Siders, 2018). It is unclear at what point economic incentives cross the line between nudges and coercion (see Mills, 2015), and this may be a fruitful area for empirical and theoretical research on adaptation justice.

Some buyout programs have a consistent source of funding, year after year, so an administrator could decide to purchase fewer homes at higher cost, secure in the knowledge that anyone not bought out this year could receive funds in the future. Programs funded by post-disaster aid, however, might not receive additional funding until after the residents have endured another disaster (and only then if the disaster is severe enough to merit federal assistance). Long delays in waiting for buyouts, and uncertainty about whether buyouts will be offered or not, may cause further financial and psychological harms (Weber and Moore, 2019). Long processes have been shown to harm residents, yet administrators who speed up buyout processes may have less time to engage in participatory processes (if they continue to be administered in a post-disaster context) (see, e.g., Thaler et al. (2020), on the role of timing). Changes in how buyouts are funded therefore also have implications for how buyouts benefit or harm participants and therefore for the justice of how buyouts are offered. Buyout funding may be beyond the purview of a buyout administrator to change, which suggests that larger governance shifts may be necessary to promote justice in buyouts.

4. Justice heuristics – Making justice decisions visible

In the absence of theoretical or policy guidance on how to solve the above dilemmas, buyout administrators make decisions within a space shaped by internal factors (i.e., worldview, mental models, understanding of the local context) and external factors (i.e., institutional context, legal authority, resources) – as do decision-makers in a wide range of environmental contexts (see Clifford et al., 2022). Most often, these decisions are made not as the result of a formal analysis of justice theory but based on a set of heuristics – shortcut criteria such as ‘help the most people,’ ‘keep costs low,’ ‘empower residents,’ or ‘help those who need help the most.’ To the extent that decisions respond to local contexts and participant needs, the resulting plurality of approaches may promote justice. However, without transparency on how these decisions are being made, it is difficult to evaluate decisions or hold decision-makers accountable: core elements of democracy, participation, and evidence-based policy. Justice heuristics are often held unconsciously, and administrators and academics rarely consider how their unconscious views may create trade-offs unless they are specifically prompted to reflect on their views, alternatives, and the implications. An important step in improving adaptation justice, therefore, would be to make visible the invisible justice heuristics that currently inform practice and scholarship.

4.1. Internal factors – Worldviews and imperfect knowledge

Administrators and academics hold different worldviews as to what

they see as the role of government and the purpose of buyouts. Individuals who see a limited role for government may make different ethical choices than those who see a more paternalistic role for government and value community cohesion over individual independence. For example, in a recent workshop on how a coastal state should allocate adaptation resources, participants held different views on whether the role of government was primarily to protect residential property or to protect the economy, and these implicit, unvoiced views led people to hold different opinions on how resources should be allocated. Similarly, stakeholders who view buyouts as an entitlement evaluate programs differently than those who see buyouts as humanitarian assistance (Tubridy and Lennon, 2021). These types of differences in worldview could explain why some buyout administrators are willing to purchase expensive homes from wealthy residents, either because they see buyouts as an entitlement (to which any citizen is, presumably, entitled) or because they see buyouts as a benefit to the community rather than the individual, while others purposefully avoid purchasing homes from wealthy residents because they see buyouts as a form of assistance intended to benefit residents in need (see Siders and Gerber-Chavez, 2021). Research focused on the intersection of mental models, justice, and policy decisions will be needed to explore how personal values and worldviews shape decisions and outcomes and how explicit discussion of these underlying views may improve participatory and governance processes.

Administrators also make decisions based on their understanding of local context (in their decision-making framework, Clifford et al., 2022 describe this as understanding the ecosystem, but we can draw parallels to understanding the social system). When deciding where and how to offer buyouts, administrators consider factors such as availability of affordable housing, the likelihood and timing of future flood events, and the community's interest in receiving buyouts (see, e.g., GOSR, 2015; HCFCD, 2017; Siders and Gerber-Chavez, 2021). Of course, administrator knowledge of these factors is imperfect. Perceptions of community interest are likely to be shaped by the most vocal community members, and an administrator's understanding of complex and deeply personal issues such as mental stress will necessarily be general (see Koslov et al., 2021). Further research to understand how administrators learn about their social environments, how accurate their perceptions are, and how effectively those insights shape their actions, will be needed to help future administrators effectively tailor their decisions to true local contexts (rather than administrator perceptions of the local context).

Adaptation programs need to address and redress the historical and ongoing injustices that have exposed people to risk. Some administrators take this a step further and ask whether future programs should support individuals who choose to live in risk-prone areas, such as property owners who knowingly build homes in the floodplain in 2022 or beyond. This raises questions, of course, about what level of knowledge carries responsibility (actual, specific knowledge or a reasonable expectation that someone should know), which raises further questions about flood risk disclosure laws and what property buyers 'know' when they acquire a home (most of which are beyond the administrator's control) (see, e.g., Weber and Moore, 2019). Even if residents know about risk, they may face severely constrained choices (e.g., only flood-prone homes are affordable) that would make withholding buyout resources unjust. Deciding when a 'choice' is so constrained as to be no longer meaningful has been the focus of discussion in other fields such as choice architecture, law, and medical ethics (Rendtorff, 2008; Bernal, 2014; Mills, 2015), and adaptation research could benefit from those insights. As the United States continues to build infrastructure in flood-prone areas and as the effects of climate change become more severe, the degree to which local governments, developers, and residents knew about risks and assumed those risks may become a larger part of the buyout administrator's worldview. Similar questions arise as to whether an administrator should buy someone out more than once (i.e., if a person relocates to another flood-prone home after the first buyout), and whether the buyout administrator should be able to incentivize, nudge, or require

residents to move outside of the floodplain (see, e.g., Tubridy et al., 2022).

4.2. External factors – Governance constraints

Administrator decisions are often constrained by external factors such as limited finances and time, laws, and institutional norms, guidelines, and goals. Many of the dilemmas above are posed as binary alternatives, even though alternative strategies may exist, because those options are often beyond the authority of the buyout administrator. Buyout administrators, for example, rarely have the authority to increase their own funding, approve funding for alternative adaptation actions, influence where new housing is built in the community or at what price, or require flood risk to be disclosed during property sales (though a new Biden Administration proposal to require flood risk disclosure for renters, and its effect on property values, will also have justice implications). This, and a lack of holistic planning, perhaps partially explain why so much new housing is built in floodplains, even in communities that are also using buyouts (Pinter, 2005; Shi and Varuzzo, 2020).

Administrators are usually part of organizations or receive funding from organizations with goals and guidelines that shape their actions. For example, the Federal Emergency Management Agency (FEMA) is legally obligated by the Stafford Act to pursue cost-effective projects. HUD's Community Development Block Grants are legally obligated to benefit low- or moderate-income households, prevent or eradicate slums, or address an urgent public safety need. The guidelines these agencies provide to buyout administrators with their funding may therefore promote the acquisition of less costly homes in lower-income neighborhoods, even if the administrator personally believes this will lead to an unjust distribution of buyouts. Cost-effectiveness requirements may also constrain the administrator's ability to provide additional resources to residents, even if the administrator believes additional resources are necessary based on recognition or restorative justice.

By their national nature, federal agencies often craft policies that apply across a diverse set of U.S. communities: small, rural towns; historic African American communities; Native American tribes; dense white urban neighborhoods; affluent vacation towns. Government policies are often designed to treat people equally, even though equal programs administered in communities with unequal histories will not and cannot result in equal or just outcomes. Designing a single national policy may make it difficult or even impossible to recognize the historical and ongoing injustices that shape where people live, what choices they have, what resources are available, and what power or voice they have to participate in processes, which is an important aspect of justice for individuals and communities who have suffered from colonialism, lack of political voice, and discrimination (see Fraser, 1996; Kompridis, 2007; Schlosberg, 2012). As a result, administrative tailoring of programs to local contexts may be far better positioned to promote justice. However, as argued above, this local tailoring is most likely to promote justice when such tailoring occurs explicitly and transparently, to enable evaluation and accountability. The external constraints placed on buyout administrators may mean that it is, in fact, impossible for a buyout administrator to implement a just buyout within the current governance system. However, that statement itself suggests a solution: change the governance system. Buyouts are often used as post-disaster response, but funding and timing both argue for buyouts to be considered as long-term risk prevention and land use measures, separated from post-disaster funding sources (Binder et al., 2020a, 2020b). This could involve greater coordination with other adaptation and development plans across agencies and silos (e.g., coordination between buyouts and housing or transportation development). An alternative governance system could also embrace more flexible policies enabling greater tailoring to local contexts and histories (e.g., to allow different compensation mechanisms such as replacement value or reparations

that would enable administrators to address historic injustices leading to variations in home value).

5. A way forward – Governance transparency and practically grounded theory

Numerous justice theories and academic proposals have been developed with the intent to guide practical decisions, but, as illustrated in the sections above, those theories and proposals fall short of answering many of the dilemmas faced by adaptation administrators. This paper used the narrow example of home buyouts to illustrate several gaps between justice theory and practice, but few of the issues raised are unique to buyouts or to managed retreat. For example, describing ‘just’ managed retreat is often complicated by relocation’s dual nature as both harm and benefit (Mcnamara et al., 2018; Tubridy et al., 2022), but although the harms and benefits of managed retreat, and other types of human mobility, have received significant attention (see, e.g., De Sherbinin et al., 2011; Sipe and Vella, 2014; De Dominicis et al., 2015; McAdam, 2015a; Ajibade, 2019), managed retreat is not unique in this respect. Many adaptation strategies involve both harms and benefits. Resistance measures like seawalls may enable people to remain in place but cut them off from waterfronts, changing their sense of place and potentially altering livelihoods or recreation (see Clarke et al., 2018; Anderson, 2019). Seawalls also raise equity concerns about who is protected and who is not. Accommodation measures such as elevating homes may enable residents to remain but alter community cohesion and place attachment and place burdens on people with limited mobility who must pay for expensive ramps or elevators or be unable to visit neighbors (Flavelle, 2018). A wide range of transformative adaptations – ones that cause nonlinear change in the fundamental features of a system (Kates et al., 2012) – are likely to involve both harms and benefits (see IPCC, 2022). Therefore, future justice theories and proposals need to enable administrators to address distribution and participatory processes that have no ideal outcomes but that create trade-offs within and among stakeholders. Similarly, a wide range of environmental and community decisions, beyond adaptation, require administrators to answer questions about defining community, addressing historical injustices, and resolving stakeholder conflicts. Justice theories and proposals that develop to resolve these challenges will be stronger for being grounded in practice.

Bridging the gap between theory and practice will be difficult. It will require additional theorizing in justice and adaptation scholarship. As a first step, academic proposals on how to increase justice in adaptation should address one or more of the dilemmas identified herein. For example, it is insufficient to propose greater participation as a solution without considering nuances such as who participates, who decides who participates, and how disputes are resolved. Academia is unlikely to develop a single best solution, but even developing a menu of solutions would provide real support for administrators and residents. To do this, adaptation scholarship and practice will need to incorporate insights from other fields who are considering similar challenges: such as how to define meaningful choice and when a government ‘nudge’ to incentivize socially-desirable behavior becomes coercive. Additional research bridging behavioral sciences, philosophy, public policy, and sociology could elucidate how personal values, worldviews, and institutional constraints shape administrative decisions.

Evaluations of adaptation justice that focus on specific decisions and outcomes could provide an improved evidentiary base for future work. Whether managed retreat, mobility, or any type of adaptation is ‘just’ is not a question that can be answered at a theoretical level; evaluations must be grounded in context and judged relative to alternatives. As justice scholar Amartya Sen writes, “A theory of justice must have something to say about the choices that are actually on offer, and not just keep us engrossed in an imagined and implausible world of unbeatable magnificence” (Sen, 2009, p. 106). This will require more empirical work that evaluates alternatives and compares outcomes across

contexts. Buyout programs, like other adaptation actions, are the result of one or more administrators making numerous justice-relevant decisions, and those decisions interact in currently unknown ways. Whereas evaluations currently tend to view policy design as a single unit, and to label the black box as just or unjust, future work will need to unpack individual decisions, the outcomes they create, and the alternatives that could have been pursued. This will require a larger set of evaluation criteria – ones that address not only the people who relocate but the surrounding community (e.g., Binder et al., 2020a, 2020b; Koslov et al., 2021), coastal ecosystems, and public access – and longitudinal studies to understand how values change over time (e.g. Tobin, 1992; Schnell and Haddock, 2004; Binder et al., 2019). Similar lines of research will be needed (and are emerging) for other types of adaptation as well (e.g., how seawalls shape sense of place) to enable comparisons across types of adaptation as well as within buyout programs. Understanding how administrators use justice theory, heuristics, and proposals in their decision-making processes will help academics to develop more targeted solutions.

Administrators and programs that document how they answer the myriad dilemmas they encounter would provide greater accountability to the public and enable further research on how these decisions and motives affect outcomes for residents. Transparency in decision-making is a cornerstone of accountable governance (Erkkilä, 2020), and although increased transparency alone may be insufficient to achieve greater equity and justice in climate policies (Ciplet et al., 2013), it is an important element in enabling accountability, evaluation, and participation. Without transparency as to how and why adaptation decisions are made, residents and participants have limited ability to hold decision-makers accountable or to advocate for changes in those decision-making processes and rationales.

Greater transparency would also provide insight into how justice-relevant decisions are constrained by institutional, legal, or logistical rules or limits. This, in turn, might provide evidence and support for reforming the adaptation governance system. After all, if all options available to a decision-maker within a governance context lead to injustice, then achieving justice might require changing the governance context. Decisions about where to offer buyouts are often pursued in isolation, but a changed governance system could support integration of buyouts – and other adaptation strategies – into larger conversations and decisions about the future of a community and its economic, social, and cultural development. It is challenging for adaptation administrators to answer the narrow question of where and how buyouts should be offered in a just manner, and administrators who escape the constraints of that question and consider larger issues of affordable housing, natural hazard mitigation, and ecosystem management, will have more opportunities to improve their community and pursue justice.

Author Statement

As sole author, A.R.S. is responsible for the content of this paper, including all opinions and errors.

Declaration of Competing Interest

The authors declare that there are no competing interests.

Data Availability

No data was used for the research described in the article.

Acknowledgements

Portions of this work were funded by the Stanford Morgridge Family Fellowship for Interdisciplinary Research, the National Science Foundation, Humans, Disasters, and the Built Environment (Grant 2034239), and the University of Delaware Research Foundation. Early versions

were presented at the EnJust Conference in Kiel, Germany, and the Managed Retreat Conference at Columbia University, USA, and I am grateful for the comments and feedback received at both venues. Thanks also to E. Bower, A.E. Cravens, P. Jackson, R. Nelson, N. Ulibarri and members of the Adaptation Lab for feedback. All opinions and errors remain those of the author.

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