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Conditions for Effective Coproduction in Community-Led Disaster Risk Management

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Abstract This paper reports on a case study of collective coproduction in an Australian community-based disaster risk management (CBDRM) project called "Be Ready Warrandyte". The first goal of the case study was to understand what interactions and power-sharing between citizens and government "looked and felt like" in a significant example of community-led CBDRM in an Australian context. Its second, broader goal was to test the extent to which foundational coproduction theory, specifically four conditions proposed by Elinor Ostrom for enabling coproduction that is more effective than either government or citizen production alone, can explain the citizen-government interactions, roles and contributions that enable successful community-led CBDRM. The study confirms that each of the four conditions—complementarity, authority, incentives and credible commitment—also apply to community-led as well as government-led initiatives. It reinforces the central importance of complementarity for avoiding offloading of risk, responsibility and cost to citizens from government, while also suggesting that specific sources of internal and external authority, incentives, and credible commitment are especially important when coproduction is community-led. It identifies leadership and its impacts on government-citizen relationships and power-sharing in coproduction as an important area that needs further research.

Introduction

This paper reports on a case study of collective coproduction in a community-based disaster risk management (CBDRM) project. Called "Be Ready Warrandyte" (hereafter "Be Ready"), the project was undertaken in the community of Warrandyte on the outskirts of metropolitan Melbourne in south eastern Australia. Significantly, the project was an early "proof-of-concept" example of a CBDRM project that was led by community rather than government, as most CBDRM projects have been in Australia the past (Boura 1998; Frandsen et al. 2011).

Community-based approaches in disaster management have slowly moved from the margins to the mainstream over the last 30 years (Maskrey 2011; Scolobig et al. 2015; Shaw 2012). CBDRM is increasingly positioned in both international (UNISDR 2015) and national policies and strategies (Cabinet Office 2011; COAG 2011; FEMA 2011) as a fundamentally important pillar for building community resilience in the face of disaster risk. Compared to the predominantly top-down, command-and-control approaches of the past, CBDRM reorients disaster management around principles of community participation, ownership and capacity-building (Maskrey 2011; Shaw 2012).[1] The rise of

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[1] The practice of CBDRM is more advanced than its conceptualisation due to its origins and development as a field approach used by national and international NGOs as well as governments. One of the most cited definitions of CBDRM, for example, comes from a field practitioner's handbook developed by the Asian Disaster Preparedness Center (Abarquez and Murshed, 2004, p. 9).

CBDRM thus reflects aspects of the broader shift in public governance towards more pluralist and participatory forms (Osborne 2006; Pestoff et al. 2013).

Also in line with broader discourses in public governance research (e.g. Edelenbos and Van Meerkerk 2016), the growing government focus on citizen participation and resilience in disaster management can be framed in both positive and negative terms. On the one hand, it contains potential for activating citizenship, mobilising community resources, networks and leadership, and empowering those who are at risk to reduce their risk and shape how it is collectively managed (e.g. Ireni-Saban 2012; Norris et al. 2008; Scolobig et al. 2015). On the other hand, it also contains a threat that governments will harness the rhetoric of community participation, CBDRM and community resilience to transfer or offload cost, risk and responsibility to the citizens and communities that are exposed to disaster risk, without a corresponding transfer of power (e.g. Cretney and Bond 2014; Welsh 2014).

Considering this, the first goal of this case study was to understand what interactions and power-sharing between citizens and government "looked and felt like" in a significant "proof-of-concept" example of community-led CBDRM in an Australian context. The analysis draws on coproduction theory, which specifically focuses attention on the relationships between public officials who work at the coalface of public service delivery (policemen, teachers, health workers, community safety officers) and their "clients" and partners (community members, school children etc.) through which "synergy between what a government does and what citizens do can occur" (Ostrom 1996, p. 1079). It is notable that successful CBDRM programmes tend to be coproductive in nature (IFRC 2011; Ishiwatari 2012; Maskrey 2011), yet coproduction theories have only been fleetingly applied to study them.

Following on from this, the second goal of the case study was to test the extent to which coproduction theory, specifically Ostrom's (1996) four conditions for effective coproduction, can explain the citizen–government interactions, roles and contributions that enable successful *community-led* coproduction. Notably, mainstream coproduction literature has tended to envision and study coproduction that is government-initiated and government-led. In this approach, citizens are "invited in" by government actors to participate in pre-existing, formal governance spaces (see Denters 2016). Yet, coproduction can also occur through "bottom-up" arrangements where citizens or communities initiate and lead public service delivery, creating new collaborative spaces with public officials. This paper thus uses an illustrative case study to reveal strengths and weaknesses of extending Ostrom's foundational coproduction theory to encompass community-led, rather than government-led, collaborative public service delivery in the field of disaster risk management.

Applying Coproduction Theory to Community-Led CBDRM

While the term "coproduction" is defined in diverse ways across research disciplines and settings (Alford 2009, p. 15–29; Brandsen and Honingh 2015), it essentially describes a particular form of citizen participation in the public policy-making process: the direct and active involvement of citizens in the production or execution phase of public policy through the design and delivery of public services at the level of specific programmes (Alford 2014; Ostrom 1996; Sharp 1980; Whitaker 1980). As Bovaird and Loeffler (2016, p. 254) explain, coproduction involves a subset of practices within the wider category of interactive governance, a category that describes forms of public governance involving "active multi-stakeholder negotiation of ways forward, as opposed to simply complying with given structures and processes".

The nature and depth of citizen participation in coproduction, as well as who exactly is involved, and what kinds of outcomes are produced, can vary considerably. This leads to different forms and expressions of coproduction, and different types of relationships between citizens and government. In CBDRM, coproduction is *collective* rather than individual in nature, involving groups of citizens participating as volunteers ("citizen-volunteers") in more ongoing relationships with public officials to produce services that have public value, rather than involving direct service beneficiaries in individual transactions that yield private value (Alford and Yates 2015).

Where CBDRM programmes are community-led they are also examples of another, overlapping category of interactive governance processes, being community or civic-induced initiatives. These are defined by Denters (2016, p.233) as: "an activity (1) initiated by citizens (2) as a group, where this activity is aimed at (3) common interest and where (4) citizens themselves decide both about the aims and means of their project and (5) actively participate in the implementation of their project". Although community initiatives are self-organised, they commonly receive—and need—support and inputs from public officials and governments to be successful (Denters 2016; Van Meerkerk and Edelenbos 2016). They may therefore involve coproductive service delivery. Yet, because of its roots in public administration, mainstream coproduction literature has largely overlooked coproduction that occurs within community initiatives (Brandsen 2016).

The conceptual framework used for this study draws on four core conditions proposed by one of the founders of coproduction theory, Elinor Ostrom, under which coproduction is more likely to be "an improvement over regular government production or citizen production alone" (Ostrom 1996, p. 1082). The four conditions are (1) complementarity, (2) authority, (3) credible commitment and (4) incentives. The *complementarity* condition is met if the contributions of the parties involved are complementary not substitutive (e.g. the contributions of each party adds value rather than replaces the contributions of the other). The *authority* condition is met when all parties are able to influence and change the way the service is produced. *Credible commitment* refers to the need for trust, recognised legitimacy and a sense of mutual obligation to be built amongst participants. The final condition requires that *incentives* are present to encourage people to contribute, for example, through recognition or encouragement and appropriate support from their organisations and networks.

Significantly, these four conditions were proposed by Ostrom at a time when research was focused on coproduction that was individual rather than collective, and led by public officials rather than citizens. More recent research suggests that Ostrom's original four conditions still hold for collective coproduction, although they are somewhat more complex, while also being altered in form and expression. It is somewhat less clear, however, to what extent and in what form these same conditions apply to coproduction that is initiated and led by citizens.

Importantly for the topic of this paper, the *complementarity* condition, also referred to in more recent literature as a "positive-sum approach" (Needham 2008) or "reciprocity" (Alford and Yates 2015), is protective against inappropriate or undesired offloading of cost, risk and responsibility by government to citizens. Like CBDRM and other participatory approaches in disaster management, the coproduction model of public service delivery is criticised as a form of neoliberal "responsibilization" in which "governments offload the delivery of services to the community, to reduce government spending" (Alford 2009, p. 24; see also Pestoff 2014). However, this criticism reflects situations where contributions of citizens are substitutive of government contributions rather than complementary or additional to them. Thus, when the condition of complementarity is met, it reduces the likelihood of government offloading, as ongoing contributions of both citizens and government are recognised as different and necessary for achieving service quality and outcomes.

The condition of *authority* in particular is more complex and multifaceted for coproduction that is collective, and particularly so when it is community-led. Where coproduction aims to produce public rather than private benefits, *both* internal and external authority is needed. Internal authority refers to the original condition proposed by Ostrom (all parties are able to influence and change the way the service is produced). External authority is additional to Ostrom's original condition. It refers to the process, and the participants, being accepted by the wider beneficiaries of the service, and by government, as legitimate.

Internal authority is more ambiguous and potentially fraught when coproduction is collective and community-led (Brandsen 2016; Brandsen et al. 2015; Joshi and Moore 2004). Brandsen et al. (2016, 2015) emphasise that when governments get involved in community-led initiatives, whether they are invited or not, it can raise dilemmas related to freedom, control, independence, and ultimately legitimacy and external authority. For example, there is potential for cooption of community efforts by governments in pursuit of public policy agendas. There is also a risk that government-induced formalisation will challenge the motivations of citizen to participate and undermine egalitarianism and independence, and hence a primary source of the legitimacy, of community initiatives. As Van Meerkerk (2016, p. 470) points out, this means that "civic initiatives often face a central dilemma between: modifying their behaviour to work with the state, thereby increasing their opportunities to receive support (for example funding, political legitimacy); and the freedom of working at a distance from the state without such support".

External authority is complicated by the fact that citizen-volunteers are not elected to represent their communities or social groups. Therefore, it is not necessarily clear how their authority to influence, and indeed lead, service delivery on behalf of others in their communities can be established (Denters 2016; Meijer 2016; Papadopoulos 2016). For public officials, this raises issues of public accountability (Bovaird 2007; Brandsen 2016; Meijer 2016; Podger 2012). As Brandsen (2016, p. 348) explains, concern over public accountability can "easily lead governments to conclude that it is too risky to get involved with, or even to allow, citizens' initiatives in a certain policy domain".

Regarding *incentives* to participate, due to the prevailing focus on government-led coproduction in the literature, there has been very little examination of what motivates and enables citizens to lead collective coproduction of public service delivery (Parker 2015). Research does show that in collective coproduction incentives for citizen-volunteers stem more from altruism, community-mindedness, the building of personal social capital and the public recognition they receive for community service, than they do from expectations of direct personal gain (Bovaird 2007). As for all coproduction, however, these benefits must be seen by citizen-volunteers to outweigh the costs

(e.g. personal time invested) for participation to be desirable (Bovaird 2007).

A particularly important form of incentive for all participants, both public officials and citizen-volunteers, is an initial trigger for a coproductive model to be implemented. The most common of these is an awareness of a short-fall in performance or outcomes under more traditional service delivery models (Parrado et al. 2013). Meanwhile, organisational incentives are especially important in collective coproduction, particularly for public officials. They include facilitative organisational structures, characterised by low centralisation, high connectedness and high flexibility (Schlappa 2013; Tuurnas 2015; Verschuere et al. 2012). In this environment, public officials are more likely to have the autonomy and responsiveness they need to build coproductive relationships (Verschuere et al. 2012). Further incentive is provided by an organisational culture that values the principles, goals and processes of coproduction itself (Verschuere et al. 2012). Regarding organisational incentives for citizen-volunteers, while collective coproduction does not require formal organisation by citizens, formal organisations can "enhance the level of coproduction forthcoming" and "facilitate coordination between residents and public agencies, a factor which may also stimulate coproductive activities" (Brudney and England 1983, p. 63).

More recent research has filled out, to some degree, what the condition of *credible commitment* involves in the context of collective coproduction. In particular, it shows that credible commitment tends to be stronger in smaller, more defined groups where participants interact in a democratic, face-to-face fashion and where there is less bureaucracy than compared to larger groups (Pestoff 2014; Verschuere et al. 2012). In such settings, participants are more likely to develop shared understanding and mutual support, and to build a sense of mutual obligation or shared responsibility (e.g. Schlappa 2013). It remains unclear, however, whether any additional factors are needed to underpin credible commitment in the context of community-led coproduction.

As the above discussion shows, Ostrom's original four conditions, updated for collective rather than individual forms of coproduction, provide a simple yet powerful framework for applying coproduction theory to examine citizen–government relationships at the coalface of coproductive CBDRM. However, the extent to which these conditions apply, and in what form, to coproduction that is led by community rather than government, is not yet determined. This will be examined here through the case of Be Ready Warrandyte.

Be Ready Warrandyte

The area that was covered by the Be Ready Warrandyte project includes the localities of North Warrandyte, Warrandyte, South Warrandyte and parts of nearby Park Orchards. This was referred to informally throughout the project as the "Greater Warrandyte area", abbreviated to "Warrandyte" hereafter for brevity. Warrandyte is a small, peri-urban community of approximately 9000 people across 2800 households (ABS 2011, excluding Park Orchards) that straddles the Yarra River on the outer northeast boundary of the city of Melbourne in Victoria, Australia.

Warrandyte has been assessed as having an extreme bushfire (wildfire) risk due to its bushland setting, hilly terrain and limited road access and egress (CFA 2014a). However, the same elements that contribute to such high bushfire risk also contribute to the picturesque, creative and community-minded character of the community. The area has a long, local history of bushfire and there have been a number of small, local fire events in recent years (EMV 2014). Significantly, during the most deadly day of bushfires in Australia's history, the "Black Saturday" bushfires of 9 February 2009 that killed 173 people, destroyed 2029 homes and burnt over 400,000 hectares in Victoria (Teague et al. 2010), the massive and devastating Kilmore East fire complex came within 15 kilometres of the central Warrandyte area (CFA and Department of Sustainability and Environment 2010).

In Australia, fire management is primarily a state government responsibility and the main fire authority in regional and peri-urban areas of Victoria, including Warrandyte, is the Country Fire Authority (CFA). Most CFA fire brigades are volunteer-based, and there are local volunteer brigades in North Warrandyte, Warrandyte and South Warrandyte.[2] The CFA also operates a community-based fire awareness and planning programme called Community Fireguard, in which neighbours work in groups with CFA training and facilitation to increase their own levels of preparedness (Boura 1998; MacDougall et al. 2014). There are several more to less active Fireguard groups in Warrandyte. In addition, other government organisations also have fire management responsibilities, including local governments (Councils) that are responsible for coordinating municipal level emergency management and recovery planning, as well as Police (traffic management) and the Department of Environment, Land Water and Planning (DELWP) (fire risk management on public land). All organisations that have formal emergency management responsibilities are collectively referred to in

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[2] South Warrandyte has since become an integrated station with both paid and volunteer fire fighters.

this paper as emergency management organisations, or EMOs.

Be Ready was described by its participants as "a self-help, community-led project to develop tools and resources to help our community to be safer and more able to deal with the risk of bushfires. The project's primary goal was to have more Warrandyte households with effective bushfire plans" (Be Ready Warrandyte 2015a). The initial impetus for the project came from three local volunteer Community Fireguard leaders who were concerned about the low level of bushfire preparedness in the area following the Black Saturday bushfires, and who felt that the CFA's community safety communications were not penetrating well into the local community. They spearheaded a successful proposal for funding from a state government grant programme for local bushfire safety initiatives called the Fire Ready Communities programme. They approached the Warrandyte Community Association (WCA) to be the lead organisation on the proposal. The WCA is a volunteer-run association that was established in 2001 to "promote community life" and "defend the character and heritage of the township" (WCA, n.d.). The WCA had run several well-attended community meetings following Black Saturday and thus was felt by both the Fireguard leaders and the WCA committee to be an appropriate organised body to lead the project.

The project officially began in mid-2012. It was overseen by a management committee, established as a sub-committee of the WCA. It was chaired by the WCA's president, and initial volunteer committee members included WCA members, the Community Fireguard leaders, and two volunteer CFA fire brigade captains. Public officials who were invited to be on the committee as part of their paid role with an EMO included staff from the emergency management departments of two Councils, community safety personnel from two CFA District offices and a representative from the Department of Planning and Community Development (DPCD) that granted the initial state government funding. Committee composition and size varied over time, with a minimum of 12 members, approximately half being volunteers. The committee also quickly contracted part time, professional project managers who were also local residents actively involved in community groups. In addition, other volunteers were recruited for project or event specific roles as required, predominantly from within the local community. A summary of key categories of project participants, including committee members and other supporters, is provided in Table 1.

Research Methods

This study used a qualitative case study design. Case and data selection was informed by participant observation by the author who was invited by the Community Fireguard leaders that first instigated the Be Ready project to assist with the initial proposal for government funding. Her personal involvement was on a pro bono basis and involved two activities: providing feedback on drafts of the funding application, and then analysing and reporting on a community survey undertaken by the committee in the first months of the project (McLennan, Whittaker, & Handmer 2013). As part of this involvement, she attended the majority of the committee meetings over the project's first 6 months and remained in contact with the committee throughout its duration. As such, she was able to observe the formation of the committee and the interactions amongst its members during this time. This has informed the research questions, conceptual framework and the design of the interview guide used for this study.

The main method of data collection was semi-structured key informant interviews conducted by the author in two rounds. Participants were selected based on their depth of knowledge of the relationships and interactions between citizen-volunteers and public officials. Representatives of each of the key categories of committee members that participated in the project, as outlined in Table 1, were also sought.

In the first round, ten in-depth (1–1.5 h long), exploratory interviews were undertaken in late 2014 and early 2015 predominantly with the longest standing committee members. In the second round, a further six follow-up interviews (30–40 min long) were undertaken in 2017 with additional interviewees to test the initial conclusions made with new data. These interviews predominantly involved people with more limited involvement in particular stages of the project, ranging across its inception to its final days. Table 1 provides an overview of the interviews conducted.

In each round, the interviews followed a loose interview guide that focused predominantly on governance and decision-making; project outcomes and strengths; challenges, risks and limitations; the roles and contributions of citizen-volunteers and public officials, and the relationships between them. All interviews were audio-recorded, transcribed and returned to each participant for checking. Interview data was then coded and thematically organised according to: (a) predetermined descriptive and analytical themes and (b) key emergent (unanticipated) themes pertinent to the research questions (e.g. Cope 2010). Quotes from interviews used in this paper are attributed to interviewees through participant IDs comprising a randomly assigned number followed by a V (for citizen-Volunteer), P

Table 1 Be Ready Warrandyte participant categories and interviewees *Source*: Final project report (Be Ready Warrandyte 2015a). Note that some of these participants had more limited or time specific involvement while others were involved throughout the duration of the project

Participant category	Type of coproducer	No. involved in project	Round 1 interviewees	Round 2 interviewees
Committee members				
Community fireguard leaders	Citizen-volunteers	3	1	1
WCA members	Citizen-volunteers	11	3	0
Local CFA brigade captains	Citizen-volunteers	2	1	1
Local project managers (also WCA members)	Project managers/citizen-volunteers[a]	3	1	1
Local government	Public officials	7	1	2
CFA community education staff	Public officials	5	2	0
DPCD staff	Public officials	3	0	0
Subtotal		33	9	5
Other (shorter-term, project specific)				
Advisors on specific projects	Mixed[b]	8	1	0
Heatwave project volunteers	Citizen-volunteers	5	0	0
Other advisors, volunteers, and supporters	Mixed	22	0	1
Subtotal		35	1	1
Total			10	6

[a] While project managers had paid roles on the project, they contributed as both paid staff and citizen-volunteers as WCA members

[b] Seven of these advisors were volunteers, 5 were Warrandyte community members, and 3 were from outside the local community, including the author

(for Public official), or M (project Managers) to indicate which type of coproducer they were.[3]

A variety of relevant secondary sources were also drawn on. These included Country Fire Authority (CFA) and Warrandyte Community Association (WCA) reports, minutes of committee meetings and other documentation from the Be Ready project, media coverage of the project and the project's website.

Impacts of Be Ready Warrandyte

Over 3 years Be Ready developed a "toolbox" of locally tailored and targeted activities, events and resources (see Box 1 and also Be Ready Warrandyte 2015a). While the project's funded activities formally ended in June 2015, the Be Ready project remains active, and the WCA has ongoing collaborations with Councils to promote and support local bushfire preparedness (e.g. Bushfire Scenario Planning events, a demonstration "fire garden", a winter clean-up campaign), and liaises with various state and

national emergency management networks and organisations.

While it was not the purpose of this study to formally evaluate the outcomes of the project, all interviewees were asked to describe its main achievements. All indicated that the project had increased the level of bushfire risk awareness in the Greater Warrandyte area, and most felt it had contributed to an improvement in the level of household bushfire planning and action in response to bushfire risk. There is also some quantitative evidence to support this view (CFA 2014b; McLennan et al. 2013).

It was evident that the Community Fireguard leaders that first initiated the project had different expectations for it compared to the other participant categories, which in turn led to more critical assessments by them of its impact. As one explained: "It's certainly a great project […] It just wasn't quite what we envisioned" (15V). Their original idea was for it to be more hard-hitting ("Sometimes people need to be scared into reality") and to provide more guidance on practical measures that people need to take to not only make decisions about how to act when a fire occurred but to prepare their properties beforehand and to cope after the event (03V). Despite this, they agreed that the project had raised awareness of bushfire risk within the

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[3] Note that interviewee's participant categories, from Table 1, are not included to maintain participant anonymity.

Box 1 Be Ready Warrandyte key project activities and outputs

A baseline survey to assess the level of community awareness and knowledge in regard to bushfire safety preparedness (McLennan et al. 2013)

A web page to communicate with the local community and to collate and share locally relevant preparedness resources and information (see http://warrandyte.org.au/fire/)

Interactive, pro-forma fire plan templates for four different household scenarios

Created a "light-hearted video on bushfire planning with a serious message" produced with the Warrandyte Theatre Company (see http://warrandyte.org.au/be-ready/video-living-with-bushfire-risk/)

Three interactive Bushfire Scenario Planning workshops with EMO participation to enable residents to apply their households fire plans to a realistic scenario

A sustained awareness-raising public media campaign supported by the development of a range of information and communications products

Two activities focused on the issue of private fire bunkers: a public forum and two tours of local private fire bunkers

Direct engagement with other community groups, residents and the local business association to raise local risk awareness
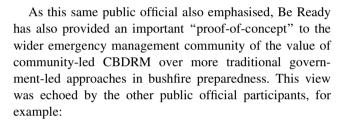
Local and state government liaison on community fire issues, including participation in government workshops and speaking by invitation at emergency management conferences

A pilot study to assess the effect of heat wave on vulnerable residents and to examine possible conflicts between government messaging around responding to heat wave and bushfire (Be Ready Warrandyte 2015b)

community and, as one concluded, "at the end of the day, it got awareness out in the community—this is a good thing" (15V). By contrast, awareness-raising was the primary outcome that the other participants sought. S one citizen-volunteer summed up: "Be Ready was about raising the awareness bar. It wasn't about the solution. Fireguard groups were about practical solutions" (11V).

In wider emergency management circles, Be Ready was regarded to be a very successful CBDRM project. It received three state-level "Fire Awareness Awards" and was highly commended at the 2013 Resilient Australia Awards (Be Ready Warrandyte 2015a). It has also been described by a state government policy maker as "emblematic of the type of behavioural change that the idea of resilience captures" (Duckworth 2015, p. 109). Within Australian emergency management, the idea of community resilience is associated with four characteristics: "functioning well under stress, successfully adapting to change, being self-reliant, and having social capacity and support systems" (COAG 2011, p.5). Building community responsibility or, to use the language of CBDRM, ownership, capacity and empowerment is therefore central to approaches for enhancing community resilience, and it was recognised by a number of interviewees as an important additional outcome of the Be Ready project:

> Prior to Be Ready Warrandyte the responsibility of fire safety for the Warrandyte community was the CFA. Now the CFA is just a player. They're just one of the participants. They do what they can, that will be respected. Thank you very much for doing what you could. Council did what they could. We as people did what we could. (09P)

As this same public official also emphasised, Be Ready has also provided an important "proof-of-concept" to the wider emergency management community of the value of community-led CBDRM over more traditional government-led approaches in bushfire preparedness. This view was echoed by the other public official participants, for example:

> I think it's actually made the emergency management community realise that the community have a great amount of power. That something that's born from right at the community level has the capacity to be fantastic and to really take off. (02P)

Conditions for Effective Community-Led Coproduction

All four of the conditions for coproduction to be more effective government or citizen only delivery models that were proposed by Ostrom were present and important for Be Ready Warrandyte. Moreover, interviewees revealed that they underpinned the project's strengths and achievements. This case study also demonstrates important differences in the way these conditions functioned in a community-led project compared to government-led coproduction.

Complementarity

The complementarity condition—that contributions from citizen-volunteers and public officials are complementary rather than substitutive—was certainly met in the Be Ready project. Both types of coproducers input considerable

resources and skills to produce outcomes that participants recognised would not have been possible otherwise. One citizen-volunteer referred to a "foundational perspective" on which the project was built as being "We're in this together. None of us can do it on our own" (06V).

The direct, personal contributions from citizen-volunteers were recognised as extensive and different to the contributions of public officials. In general, the volunteers on the committee—including WCA members, Community Fireguard leaders (initially) and local CFA brigade captains—were predominantly older, professionally skilled, long-term residents, with past leadership experience, a high level of bushfire risk awareness, and an ongoing commitment to community service and voluntary work. The majority of interviewees commented on the very high collective capacities of the volunteers on the committee, describing them as: people "who have held senior positions in organisations" (07P), "very capable" (07P), "very organised" (13P), "creative" (12M), "very strong people" who "know what they're doing" (11V), and "incredibly smart, clever, creative, and community-minded people" (10M).

Another crucial area of contribution from citizen-volunteers to the project stemmed from their local embeddedness and social capital. As community leaders and community members, citizen-volunteers could mobilize additional support from across the Warrandyte community. They did this, for example, by seeking out and securing ad-hoc, skilled volunteers from within the community for specific tasks, as well as securing vital support from other community groups, local institutions, and local businesses. As one citizen-volunteer acknowledged:

> Warrandyte is a very well-endowed community in terms of professional expertise. You can find people who can do almost anything and we've used most of them. (04V)

The local knowledge and local connectedness of citizen-volunteers also enabled them to target tools, communications and events in ways that were more attune to local context, needs, priorities, values, knowledge, risk awareness and attitudes within their community:

> That's what [leave] early really means to the CFA. But that might not be what people here mean. So just about bringing a different perspective I guess to the communication, to the messages. (10M)

Because of this, it was widely recognised that the project had reached further into the community than would be possible through a government-led programme. However, it is also important not to idealise community-based approaches in this respect. Indeed, the Be Ready project faced similar challenges for connecting with less engaged members of the community as do government-led preparedness programmes:

> There are all sorts of different constituencies in the community and after a while you look at the people who come to meetings and so on and you're talking to the same people all the time. So how do you get to those other people? I think that's the most important area for anybody to be following up. (04V)

Meanwhile, the main contributions of public officials to the project stemmed in part from their emergency management expertise, but also from their knowledge of the wider emergency management system and how it worked, and their own personal networks and influence within it. Reported contributions made by public officials included:

- Contributing ideas and expertise (10M, 05V), "advice and general support" (14P), and "factual information" (12M);
- Providing information about, and a "conduit" into emergency management (08V, 07P) and help with "working around systems" (07P, 15V);
- Lending credibility and expertise to events and communications materials produced (04V, 08V, 12M, 10M, 11V);
- Helping the group to garner funds and influence policy (08V, 10M, 14P), as well as contributing tangible resources like signage (15V);
- Advising the committee about potential consequences, limitations and risks that might be encountered (07P, 01P), and testing and challenging community ideas with experience and expertise (09P, 10M, 13P, 14P).

Notably, both citizen-volunteers and public officials also stressed the importance of ongoing, sustained government support and involvement in CBDRM over longer time-frames, which further reflects the complementary rather than substitutive nature of the contributions from citizen-volunteers and public officials.

Internal and External Authority

As outlined above, internal authority is more ambiguous and potentially fraught when coproduction is collective and community-led. In the case of Be Ready, citizen-volunteers maintained community control of the project throughout. Notwithstanding, there was considerable government influence on the project and citizen-volunteers had to negotiate a balanced position between community and government priorities. As one citizen-volunteer noted, due to cross-cutting administrative boundaries, there was a relatively high percentage of public officials on the committee for a community-led project (approximately 50%).

The most direct mechanism for government influence on the project was through the requirement for CFA endorsement of all the project's products and activities that was an imposed condition of its state government funding. It was clear though, that a commitment and culture of working with government extended beyond the requirement to meet this condition to secure funding. Citizen-volunteers voluntarily invited public officials to sit on the project's management committee, and they maintained a commitment to obtaining CFA input on all project materials well beyond the one-year term of the initial state government funding (later extended to 18 months). As one public official participant explained:

> Warrandyte is very much 'we need to link into the established systems to do this', other communities are more 'we need to do this', and sometimes avoid or, 'let's see if we can do this without anyone noticing. (07P)

There was recognition amongst interviewees that the citizen-volunteers had to make some compromises and be selective in the issues they tackled because of this stance:

> You know we had to tow the CFA line whether we agreed with it or not. I mean [one of the project instigators] specifically wanted to challenge the CFA view on some things and he may well be right. But it wasn't an option. (04W)

One Community Fireguard leader indicated that the project became too closely aligned with state government policy (03V). However, later participants, both citizen-volunteers and public officials, generally felt that Be Ready had struck a good balance between maintaining community leadership and independence, representing community priorities, and working with government policy and bushfire safety messaging:

> I think the out of the box solutions are critical but thinking about it, Be Ready worked because it did have a fair bit of corporate [CFA] influence. It kind of did its own thing but it did have a corporate influence. […] I think we got the balance right. I think as a whole the authorities supported what they were doing. (05V)

Some interviewees emphasised that the strong leadership and management capacities of the citizen-volunteers and local project managers enabled community leadership and independence throughout the project despite the high degree of government involvement:

> The community representatives in Be Ready Warrandyte were very strong people and knew their stuff. They were corporate managers. They were actually more effective managers than the agencies and therefore led the way. They had the confidence and the skills to lead the way as opposed to starting a process and then having to share the responsibility and that sort of thing. (09P)

Resistance or reluctance by public officials to sharing authority with communities and volunteers is a recognised barrier to coproduction (Bovaird 2007). Some public officials involved with Be Ready were initially wary of the project. However, without exception their acceptance of not only sharing authority with citizen-volunteers but also being led by them increased over time as their familiarity and trust grew. This was evidenced, for example, by their continued participation in the project even when citizen-volunteers took it in directions they did not necessarily agree with:

> There have been other groups out in the broader state that have just gone off and not sort advice from CFA or involvement and those groups are the ones that concern. At least I've got Warrandyte who are saying: "can you help us?" "Sure!" But it's a very softly, softly approach so I don't look to be standing on their toes and inhibiting them. Sometimes you go, like with the [activities focused on private fire] bunkers, "ooh! Ahh! I don't agree. This is what I'll say. Please listen to me". I can only request. (01P)

In this case study, establishing strong external authority was explicitly identified as a critical enabler of the project. The importance of the project being led by well-known and respected community leaders and a long-standing and well-regarded community organisation was repeatedly emphasised by participants:

> The WCA component has been important […] The ability to bring into the Be Ready Warrandyte environment the broader views of the Warrandyte community and to do that with gravitas and some authority has been really important. And it's also given us a vehicle for communication with the broader community. (10M)
> WCA has been in existence for a long time. […] It's a group which is very well organised, very well established and as its membership very capable people] […] And as such they're very astute as to how the systems work, they're very politically astute. So, pre- going down the path of the Be Ready program they were very much well-positioned to influence local government and state government. (07P)

One public official suggested that in other settings where a similar community organisation does not exist, external authority can be established in other ways, with the most

appropriate avenue being dependent upon the particular make-up of the local community. Other interviewees felt, however, that establishing external authority with both community and government would be harder without a pre-existing and well-respected community organisation in the lead.

At the same time, there was wide recognition that the involvement of public officials and local fire brigade volunteers associated with government emergency management organisations was also important for establishing external authority with the local community. This was seen by citizen-volunteers as a significant benefit of working closely with government:

> A group with a grant do need support from the services so they are legit, so people see them as legit and people don't see them as some crazy group saying "this is what you should do" and "where are they getting their information from?" If you've got back-up from the official services, you'll be treated with more respect from the community. (12M)

There was also recognition amongst interviewees that, while the citizen-volunteers were in a good position to represent *on behalf of* their community with authority, they were not as descriptively representative *of* the wider community as they might have been. Interviewees mentioned, for example, the predominantly older, male make-up of the group, and the absence of young people (12M, 06V, 04V). One interviewee particularly emphasised the absence of newer residents with lower bushfire risk awareness on the committee:

> We ended up with people who are long-time residents who potentially didn't actually understand the problems that we wanted […] it ceased to have representatives of fundamentally the market I believed – and I thought the committee believed – we should be targeting. (05V)

Notably, this is one of the few areas where the views of citizen-volunteers and public officials diverged. Public officials did not raise any concerns regarding the descriptive representativeness of the committee. Furthermore, in speaking of another community-led CBDRM group in a nearby community, one public official noted:

> One of the interesting things that came up when we were up there one cold night sitting in a room with about 8 members of [another] community. They turned around and said: "well okay, when do we take this to the community?" Which to me as someone working for [government] is well, isn't that you guys? How far do you go? (07P)

In Australian disaster and emergency management, public accountability concerns are often raised by public officials using the language of risk and liability. However, neither public officials nor citizen-volunteers expressed significant concerns with respect to their roles in Be Ready Warrandyte. In addition to having adequate insurance in place through the WCA, the committee had a strong emphasis on due process and good governance that alleviated any potential concerns:

> Ah, [liability is] not a concern. The minutes have been very good. If we've said we don't agree it's in the minutes. And it's just been very clear in what our advice is: yes, we agree or no, we don't, and this is why. (01P)

Additionally, some interviewees expressed the view that because CBDRM helps to develop community ownership and a sense of shared responsibility between government and citizens, it can reduce the potential for government liability in disaster management more broadly.

> My belief is that the more community-focused, the more community-based, the less the liability. It actually shares it around. […] I think it actually defuses the anger and the seeking of revenge. Where communities are not engaged at all and stuff happens to them then the anger spills over. It's directed at the agencies. It's directed at the government. (09P)

There was also a strong message from many participants that community-led CBDRM projects benefit from having greater freedom from formal, governmental public accountability systems, and a lesser fear of legal liability:

> They're filling the gap that has been avoided because there's all that sort of fear, whether its saying stuff and we're going to be liable, to be held to account. So, they can operate between the official message and the practical systems type thing, so I think that's where they can do things that [government] organisations struggle to do because of the risks. (07P)

At the same time, there was an indication from public official participants that supporting community-led projects did require them to accept a degree of ambiguity around their roles and to carefully balance their accountabilities in the more formal government systems with their contributions in a less formal community process:

> You're accountable whether it's public money for whatever, you're accountable so you do need to work within government structures, you do need to have project plans. On one hand, you're balancing between that and working with people who think that doing all

that stuff isn't really relevant. (07P, of working with community-led groups generally)

Incentives

A key incentive for all participants in the Be Ready project was the impact of the Black Saturday bushfires. This event was an important trigger for the project in four ways. First, it raised awareness of the lack of household planning for bushfire safety in Warrandyte amongst the three Community Fireguard leaders that instigated the project. Second, it raised awareness of fire risk in the community and mobilised the WCA to become involved in bushfire preparedness. Third, it led to the creation of the state government grant programme that initially funded the project. Finally, it contributed to raising the profile and legitimacy of community engagement and resilience-based approaches across the emergency management sector and it brought focused attention to the limitations of government-led bushfire preparedness programmes. As one citizen-volunteer with an emergency management background explained, this has contributed to a culture-shift in the emergency management sector that has increased support for community-based approaches:

> I think that Black Saturday changed the mind set of everyone. It certainly changed my mind set. I think engagement's taken on a legitimacy that I don't think it had beforehand. The age-old Australian thing of telling people only what we thought they needed, I think that is a culture that's almost been totally removed from us. (05V)

Yet, public officials also referred to organisational changes needed to better support and incentivize both public officials and local community fire brigade volunteers to participate in and support CBDRM. In particular, the need for longer-term planning and funding, flexibility in approach, appropriate resourcing, and recognition and value of intangible outcomes of coproductive approaches were emphasised:

> So, to be able to get down to that community group level that would be fantastic. But it would take an awful lot of organisation and change and focus and planning on the behalf of the emergency services and personally I don't think that's one thing we do well as far as community safety goes: the planning part of it. Because we're so year-to-year we never really get to plan out a good five-year strategy. (02P)
> So, it's those less tangible things, and the important things around trust. So, if you did a report to state government to say well, "how many communities in [this area] have your trust?" It would be a bit hard to

quantify that. Whereas you can easily do, "we do have community information guides for [community A], [community B]". (07P)

Capable leadership and good project management were two important facilitative factors that increased benefits and decreased costs of participation for both citizen-volunteers and public officials. As indicated above, the project was deemed to be particularly well-led, well-organised and professional in approach for a community initiative. This encouraged people to get involved and have confidence in the public value impact of the project, while also reducing the time and administrative burden of their involvement:

> We weren't sitting there for hours debating whether it should be this or whether it should be that. People went off and did their bits and away it went. So, [the Chair] was very good. He moved it along. He put a lot of time and effort into it. It was well led. (11V)
> Good community people should be the strategic thinkers and the voice of the community, the thermometers, barometers of community opinion and that sort of thing and identifying community needs, community strengths, community weaknesses, community risk. So, they should focus their very valuable and precious energy on that and not on writing minutes and making phone calls and chasing things up and organising the sign writing and those sorts of things. So, engaging a professional to do that has been a fantastic model for Be Ready Warrandyte. (09P)

Three public officials, while acknowledging the important role the paid project managers had filled for Be Ready, also suggested that in the absence of dedicated funding volunteers might be able to fill a similar role as occurs, for example, in other community groups like sporting clubs.

Credible Commitment

The fourth condition proposed by Ostrom for effective coproduction—credible commitment—was a feature of Be Ready Warrandyte widely seen by interviewees—both citizen-volunteers and public officials—as one of the project's key strengths. There was ample evidence that participants had built trust, developed a sense of mutual obligation and responsibility and a strong, shared view of the project's goal. As one of the local project managers explained:

> There's no self-interest [amongst project committee members]. Nobody has any vested interest, politically or practically or economically in the outcome. And they are inarguably the right outcomes about saving lives. You can't take a different point of view really.

You can differ dramatically about how that can be achieved but ultimately the goal is a really clean, clear, authentic and real goal. (10M)

One citizen-volunteer in particular emphasised the importance of face-to-face interaction for building credible commitment:

the subtler effects [of the project] are much harder to see and much harder to understand and it comes from the change in the nature of the relationship between the organisations and agencies and the community […]. Number one: the people who came from the police, SES [State Emergency Service], Parks, CFA and the Councils came to the committee not representing their organisations but as representatives of [with emphasis] their organisations so they didn't feel that they had to necessarily merely spout the party line of whatever their organisation's policy was […] That had a profound effect on the way in which the people from those organisations were able to relate to the community as a whole, which when they're in their police station, or when they're in their offices, [they] are unable to relate to the community in quite that way. There's not the degree of contact. There's not the degree of trust. There's not the degree of openness and, of all things, agreeing to differ. (06V)

These good relationships were recognised as having enabled the group to encompass differences of opinion between citizen-volunteers and public officials as well as broaching some of the more contentious topics—like public fire shelters and private bunkers—that might otherwise have remained off the table:

The challenges are probably just when we have differences of opinion [between public officials and citizen-volunteers]. […] I guess if we didn't have a good relationship, it could have ended a lot worse. We could've disbanded but given that we had the good, trusting relationships it didn't have an effect. (13P)

The WCA's prior good relationship with local government was emphasised as another important foundation for establishing credible commitment: "that dialogue has built up over a decade and the regard and the respect [between the WCA and local government] has built up over a decade" (10M). It was also clear that, with the notable exception of the different vision amongst the Fireguard leaders in the project's early days, having a clear, shared, uncontested vision for the project that was firmly defended by its Chair also underpinned credible commitment:

There's a healthy difference in the views. There's never argument. There's discussion and healthy

debate. But at the end of the day, there's a very strong president, a very strong chair of the project who is strong is a very gentle way if that makes any kind of sense at all but we're very rarely left in a grey zone. […] I don't think anybody's views are dismissed. Every opinion is a valued opinion. (10M)
[the Chair] has put in a lot of time and energy. […] It has had to be led by strong people with clear visions, and keeping those objectives very clear. (01P)

Credible commitment was challenged, however, by high staff turnover on the part of public officials. This problem was identified by both citizen-volunteers and public officials. According to one citizen-volunteer, 17 public officials and CFA-affiliated volunteers were involved at the start of the project, but only 2 remained involved by the end. This high turnover posed a significant challenge for the project committee. It was also difficult to find times to meet face-to-face that fit both volunteer and paid participant schedules:

We don't have the staff. They're on contract so you lose the skills and the relationships and the rapport that someone's built with this community group and you've got to start it all over again. So we never really, we get the ball rolling and then we've got to start again. (02P)

Discussion

Before turning to consider what this case study reveals about the extent to which Ostrom's (1996) four conditions can explain the citizen–government interactions, roles and contributions that supported a successful example of community-led CBDRM, it is worth considering the extent to which a coproductive model of service delivery was indeed more effective than either government or citizen production alone in this case. Most interviewees directly indicated that the Be Ready Warrandyte project would not have had the same outcomes in raising community bushfire risk awareness and building community resilience through either government or citizen production alone. Indeed, one of the most oft-repeated points made by interviewees regarding the achievements of the project was that it was able do things that government (e.g. more traditional government-delivered programmes) could not. In line with this, public officials in particular acknowledged that Be Ready was an important "proof-of-concept" of the value of community-led CBDRM to the wider Australian emergency management community.

The first of Ostrom's conditions, complementarity, is particularly significant for collective coproduction of CBDRM and for community-led initiatives in general, as it

is protective against the inappropriate or undesired offloading of cost, risk and responsibility by government to citizens, as already outlined above. In this case study, offloading of this kind did not occur, as the contributions of both citizen-volunteers and public officials were clearly recognised as essential to the project's outcomes. Citizen-volunteers brought project management, professional and communications skills, creativity and innovation, social capital, and access to local community resources (e.g. volunteers, local business support, local knowledge). Meanwhile, public officials brought emergency management information and expertise, knowledge of government systems, and how to work with (and around) them, and access to resources from beyond the local community. Combining the observations that Be Ready was able to achieve things that a traditional government programme could not, and that the complementarity condition was important for enabling these achievements, this case study reinforces Needham's (2008, p. 224) claim that positive-sum approaches, "in which bureaucrats and citizens play an active and complimentary role, offer more scope to *expand* service capacity than the zero-sum substitution approaches" (emphasis added).

Regarding internal authority, a key issue for community-led coproduction is the negotiation of government influence. The potential dilemmas around freedom, control, legitimacy and independence that are raised when governments become involved in community-led initiatives (Brandsen 2016; Brandsen et al. 2015; Van Meerkerk 2016) were evident in the Be Ready case. For the most part, however, these issues seemed to be well-negotiated to the satisfaction of most citizen-volunteers and public officials. The project did have considerable government influence, and participants recognised that this constrained the choice of activities undertaken. Despite this, it was also clear that, for the most part, citizen-volunteers accepted that some degree of government restriction was necessary; not only to get access to funding but also because there were *benefits from government involvement that advanced their primary public value goal for the project*. One key benefit identified was to raise the credibility and legitimacy of the project not only with government but also, importantly, with the local community.

This Be Ready experience also reflected the dilemma identified by Brandsen (2016) that "in embracing citizens' initiatives, governments run the risk of turning them into something quite different" (p. 348). In particular, Brandsen emphasises the potential for governments to compel informal community initiatives to formalise to comply with regulations, and in doing so to undermine their legitimacy and the motivations of citizens to participate. Be Ready had informal origins in the ideas and concerns of a well-informed group of local, volunteer Community Fireguard leaders. The requirement for the project to be undertaken by a formal organisation to be eligible for state government funding led them to approach the Warrandyte Community Association. This, along with the subsequent funding conditions, ultimately led to the project taking a direction that departed from their original vision and, partly due to this, none of the original instigators remained involved to the end of the project.

This case study also suggests, however, that capable community leadership may be more important than is currently recognised for protecting community initiatives against the risk that government involvement will "kill or mutate" them (Brandsen 2016, p. 349). Leadership, and power more broadly, is a topic on which coproduction literature is largely silent (Mitlin 2008; Schlappa and Imani 2012, 2016; Watson 2014), but which emerging literature on interactive governance is beginning to bring into focus alongside the highly related issue of citizen capacity to self-organise (e.g. Denters 2016; Van Meerkerk 2016). Importantly, the citizen-volunteers on the Be Ready project committee were seen by all participants to be strong and capable leaders, particularly the Chair of the committee. They maintained control of the project and negotiated the differences in government and community priorities without losing the support of either public officials or citizen-volunteers, despite half the committee members being government representatives. An important function of this leadership was to maintain the project's focus firmly on a very clear public value goal (raising community bushfire risk awareness) that was well-supported by both citizen-volunteers and public officials, while at the same time acknowledging and respecting the various personal and professional motivations and passions of participants. The importance to Be Ready of having a clear, uncontested public value goal reflects recent research on community initiatives involving government, which finds that the most successful tend to be pragmatically focused and "problem-driven rather than ideologically motivated" (Brandsen et al. 2015, p. 10–11)

Regarding external authority, key issues that remain unresolved revolve around the representativeness of citizen-volunteers (Denters 2016; Meijer 2016; Papadopoulos 2016) and dilemmas of public accountability (Bovaird 2007; Brandsen 2016; Meijer 2016; Podger 2012; Van Meerkerk 2016). As Denters (2016) highlights, there are two ways that citizen-volunteers may be representative of their community—substantively and descriptively—yet only descriptive representation is a focus in research. In the case of Be Ready, descriptive representation, being the extent to which citizen-volunteers reflect the socioeconomic and demographic background of the wider community (Denters 2016), was not particularly high. This was recognised by several interviewees, particularly regarding

gender and age, but also with respect to residency and awareness of local bushfire risk. This is potentially significant for a CBDRM project, given that CBDRM discourse emphasises that "the involvement of the most vulnerable is paramount" (Abarquez and Murshed 2004, p. 9).

Notwithstanding, as Denters (2016, p. 242) argues: "We should not assume that a lack of descriptive representativeness automatically also implies a lack of substantive representativeness". Substantive representativeness concerns the extent to which citizen-volunteers represent the views and priorities of the wider community. Meijer (2016, p. 604) presents a similar view, stating that "while government legitimacy is about citizen trust in government, trust in other citizens is a key question for the legitimacy of coproductive arrangements. In the new structure, citizens are to have confidence in the integrity, competencies and intentions of their fellow-citizens to coproduce for the collective good" (p. 604).

In the case of Be Ready Warrandyte, both citizen-volunteers and public officials indicated that, from the perspective of insiders to the project, substantive representativeness was very high and there were many channels used to seek input and feedback from the wider community throughout the life of the project. In general, citizen-volunteers indicated that greater depth of community engagement was necessary to confidently and legitimately represent the wider community compared to the public officials. Implications of this difference deserve further inspection, especially for community initiatives in a sector like disaster management, which faces considerable public scrutiny and where the consequences of service delivery decisions may involve high stakes including the potential loss of human life.

Exactly how community-led coproduction can be incorporated into public administration systems in ways that do not undermine public accountability within democratic governance systems, remains an open question (Bovaird 2007; Brandsen 2016; Meijer 2016; Podger 2012; Van Meerkerk 2016). Meijer (2016), for example, recently raised this point, further arguing that coproduction represents a new social contract that changes the roles of government and citizens at a deeper level, not just on the coalface of service delivery. He suggests that a shift towards greater citizen control through coproduction is likely to require a shift in the nature of legitimacy and accountability in the public sector. As a result, he states that "accountability mechanisms should not focus on proper use of input or on outcomes but on the quality and equality of structures and actions for active citizen engagement" (p.603), which he terms "process accountability".

There was evidence in the Be Ready case to support Meijer's view that the answer to the question of how to meet public accountability needs in community initiatives involves process accountability. For example, public officials expressed few concerns about liability, citing the committee's adherence to good governance and the professional project management processes like formally documenting meeting minutes. Furthermore, some public officials also suggested that the process of community-led coproduction shares responsibility for disaster risk management across government and community, ultimately reinforcing public accountability. The Be Ready case also shows that relatively greater freedom from strict government (input and outcome) accountability systems can be a considerable benefit of community-led coproduction. Notably, having a well-regarded community organisation like the Warrandyte Community Association leading the project was important for establishing legitimacy (i.e. external authority) with both community and government at the same time. This is an area deserving of further research: the potential role of trusted, formal community organisations to provide what Van Meerkerk (2016, p. 470) describes as "a good institutional linkage and institutional and organisational embedding of governance arrangements between civic initiatives and governmental institutions".

Regarding Ostrom's third and fourth conditions of incentives and credible commitment, the Be Ready case study confirms their importance in the context of community-led coproduction while also filling in a more complete picture of what they look like. One key point of difference in the findings from this case study compared to mainstream coproduction theory, is that capable community leadership was again shown to be important for underpinning these conditions. Regarding incentives, citizen-volunteer and public official participation in the project involved greater benefits and fewer costs (and risks) because the project was well-led and well-managed. Credible commitment was also reinforced by the leadership's adherence to a clear and uncontested public value goal that all participants supported.

The importance of capable community leadership in establishing the conditions for effective community-led coproduction in this case study indicates that coproduction theory needs to engage more deeply with theories of leadership to move beyond its past focus on government-led coproduction to better encompass coproduction in the context of community initiatives. The, hitherto rather thin, strands of research that exist on, for example, relational (Schlappa and Imani 2016; Uhl-Bien 2006) and boundary-spanning (Van Meerkerk 2016) leadership in coproduction thus warrant far greater exploration. As Brandsen (2016) highlights in discussing the field of public administration, "if our aim is to understand how citizens organize themselves", and, one could add here, also their relationships and interactions with government, "we will inevitably need

to turn to different types of theories and draw more broadly on the social sciences".

Conclusion

This case study of Be Ready Warrandyte reveals both strengths and limitations in applying foundational coproduction theory to understanding and explaining the conditions under which *community-led* forms of coproduction can be more effective than government or citizen production of public services alone, as well as government-led coproduction. It confirms that each of the four conditions originally proposed by Ostrom—complementarity, authority, incentives and credible commitment—also apply to community initiatives. It reinforces the central importance of complementarity for avoiding the risk that governments will offload risk, responsibility and cost to citizens, which is a key criticism of community-based approaches in disaster risk management as well as of coproduction more widely. Further, this case study suggests that specific sources and forms of authority, incentives, and credible commitment are especially important for coproduction that is community-led, and that these warrant further research attention.

Regarding authority, established and respected community organisations may have an important role in securing legitimacy for community initiatives with both community and government at the same time by providing an important institutional linkage between old and new forms of governance. Meanwhile, the substantive representativeness of citizen-volunteers may be just as important for legitimacy of community initiatives, or potentially even more so, than descriptive representativeness; and shifting to a focus on process accountability may be a key part of the answer to overcoming public accountability concerns.

Capable community leadership emerged as a key source of not only authority (through negotiating government influence and managing dilemmas related to freedom, control, independence, and legitimacy), but also incentives (increasing benefits and decreasing costs of participation) and credible commitment (establishing and defending a clear, well-supported and pragmatic public value goal while also respecting the diverse motivations and contributions of participants). Given that coproduction literature is extremely quiet on the issue of leadership and power more broadly, this is one area in particular that would benefit from far greater research attention in future.

Compliance with Ethical Standards

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