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Keywords

australia, changing, disaster, volunteering:, responses, landscape, gaps, opportunities

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The changing landscape of disaster volunteering: Opportunities, responses and gaps in Australia

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Keywords: disaster management, disaster volunteering, volunteers, resilience, volunteer strategies, spontaneous volunteering, digital volunteering, community-based disaster risk reduction (CBDRR)

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1. Introduction

At an international level, there is a growing expectation that volunteers will have a greater role in disaster risk reduction and disaster management in the future compared to the past. This is driven by a growing international focus on building “resilience to disasters through a “bottom-up” process in the form of volunteer initiatives rooted in the community” (UNV 2011, p.xxiii). This focus was recently reiterated in the Sendai Framework for Disaster Risk Reduction (2015-2030), adopted by the UN General Assembly in March 2015 (UNISDR 2015). The Framework asks that “responsibilities be shared” across all sectors and stakeholders of society and calls for “an all-of-society engagement and partnership” (p.8). It also provides a lengthy list of actions for “civil society, volunteers, organized voluntary work organizations and community-based organizations” that should be encouraged by States (p.20).

Within Australia, disaster management policy is underpinned by very similar principles. The National Strategy for Disaster Resilience (the ‘NSDR’) adopted in 2011 (COAG 2011) embodies principles of community resilience and self-reliance, and calls for a focus on sharing responsibility for disaster management between governments and communities. The NSDR builds on a 2009 COAG National Statement on Disaster Resilience that acknowledged that non-government organisations, community organisations and volunteers are “at the forefront of strengthening disaster resilience” (p. iii). It calls for a focus on encouraging volunteering – of all kinds – in Australian communities (p. 11).

Australian emergency management, as the sector is referred to domestically, already benefits from a large, highly-trained volunteer workforce that forms the backbone of much of its emergency and disaster response capacity (McLennan 2008). In 2014-15, over 250,000 volunteers were “on the records of emergency service organisations” (Commonwealth of Australia 2016, p.D9), which are the government and non-government response-oriented agencies. Amongst organisations that have formally recognised roles across the broader prevention, preparedness, response and recovery spectrum (collectively ‘emergency management organisations’ or EMOs), Australia’s emergency management volunteer workforce expands to double that figure, being around 500,000 people strong according to a 2012 government source (Commonwealth of Australia 2012). The national focus on building community resilience to disasters through volunteering will therefore add to this considerable existing volunteer capacity.

At the same time, however, the landscape of volunteering is transforming in the twenty-first Century in ways that present considerable challenges – as well as opportunities – for disaster management. In particular, shifts in the nature of paid work, lifestyles and values, and new technology, has led to a decline in ‘traditional’, long-term, high commitment volunteering and a rise in more diverse, fluid and episodic styles of volunteering (Hustinx and Lammertyn 2003). Significantly, volunteer strategies in the Australian emergency management sector still rely heavily on the traditional model of volunteering (e.g. Commonwealth of Australia 2012; McLennan and Birch 2005). With the notable exception of the impact of new technology and the growth of digital volunteerism (e.g. Cobb et al. 2014; Haworth and Bruce 2015), surprisingly little research attention has yet been given to the implications of the changing landscape for the way that “civil society, volunteers, organized voluntary work organizations and community-based organizations” might fulfil the growing roles and responsibilities expected of them in disaster management.

In light of this, this paper considers implications of the changing landscape for the resilience agenda in disaster management, with a focus on Australia. It first reviews major forces and trends impacting on disaster volunteering, drawing from existing literature on volunteerism broadly, and on volunteering in the context of disasters in particular. Notably, there is a large body of literature that examines how the social practice of volunteering is changing in modern times. However, it is seldom drawn on to examine implications and opportunities of these changes for disaster management. Following this review, the paper examines opportunities in the changing landscape for Australian emergency management across five key strategic areas, and provides examples of Australian responses to these opportunities to date. In addition to relevant Australian academic and grey literature, the discussion draws on the authors' detailed knowledge of developments in volunteering in the Australian emergency management context obtained through a three-year research project focused on this area (see http://www.bnhcrc.com.au/research/resilient-people-infrastructure-and-institutions/248). The project benefited from significant, ongoing engagement with EMO volunteer managers and their sector-wide networks. Their direct knowledge has thus also contributed to the discussion here. The paper concludes by identifying important research and practice gaps in this area.

2. The changing landscape of disaster volunteering

The changing landscape of disaster volunteering needs to be positioned within the much broader shift that is taking place in the way people volunteer. It is now widely recognised that a significant qualitative shift is occurring in the nature of modern volunteering as a result of a broad transformation in the way people live and work in the 21st Century (Hustinx et al. 2010; Hustinx and Lammertyn 2003; Rochester et al. 2010). This transformation is associated with a range of factors that include the influences of cultural globalisation, mass media and growing access to the Internet (Handy et al. 2006; Hustinx and Lammertyn 2003), as well as an ageing population, changes in household composition, growing wealth and inequality, changes in the nature of community, growing individualism, shifting values and rising aspirations (Rochester et al. 2010, p.69-83). A key, widely recognised factor is the rising demands and expectations of modern employment, which spurs people's growing preferences for shorter-term volunteering engagements (Cnaan and Handy 2005; Hustinx and Lammertyn 2003; Rochester et al. 2010, p.69-83). It is likely that growing mobility and diversity in forms of employment have also changed people's expectations of more diverse and flexible forms of volunteering (Macduff 2006).

2.1. More diverse volunteering styles

Collectively, these developments have recast the conditions and values that shape people's choices about how, when, where and why to volunteer compared to the past, leading to a growth in newer, and more diverse volunteering styles. The so-called 'traditional' or 'classic' model of volunteering is one that involves "a lifelong and demanding commitment" to an organisation, and is underpinned by collective and altruistic values, and devotion to community service and to voluntary organisations (Hustinx and Lammertyn 2003, p.168). By contrast, qualities and characteristics increasingly associated with newer volunteering styles include (Hustinx et al. 2010; Hustinx and Lammertyn 2003; Rochester et al. 2010, p.24-37):

- Greater interest in shorter-term, episodic volunteering;
- Greater individualism in the way people make decisions about where, how and why they volunteer;

- Greater desire for autonomy and using existing skills;
- Greater import given to personal rewards and benefits alongside more altruistic motivations; and
- A lesser degree of loyalty to particular organisations in favour of greater loyalty to particular causes, projects or outcomes that are meaningful to the individual.

As noted above, volunteer strategies in the Australian emergency management sector still rely heavily on the traditional style of volunteering (e.g. Commonwealth of Australia 2012; McLennan and Birch 2005). Consequently, the sector has felt increasing pressure on its existing volunteer base within the shifting landscape (e.g. Esmond 2009; McLennan and Birch 2005; Parkin 2008). The National Emergency Management Volunteer Action Plan released in 2012, for example, states that

> "work-life patterns, lifestyle expectations, demographic changes, domestic migration, an ageing population and community fragmentation all provide a significant challenge for the recruitment and retention of emergency management volunteers. This is an issue of national importance that impacts on all levels of government and all Australian communities" (Commonwealth of Australia 2012, p.6).

Not all disaster volunteering takes place within the context of formal organisations or with affiliation to established EMOs, however. When informal volunteering that takes place without association with an organisation is also considered, it is clear that short-term volunteering in the context of disasters is far from a new phenomenon. Historically, people have always converged on disaster sites to assist those impacted in the immediate aftermath, with most efforts disbanding once immediate response and relief needs are met (Drabek and McEntire 2003; Whittaker et al. 2015). The phenomenon of convergence, and the related phenomena of emergent organisation and behaviour following disasters have been the focus of attention from sociological disaster research for decades. However, these phenomena have been excluded in the past from both volunteerism research and disaster management planning, both of which have conventionally defined volunteering in ways that emphasize the traditional model of long-term, sustained volunteering with a formal organisation (Scanlon et al. 2014, p.44; Whittaker et al. 2015).

Definitions of volunteering are shifting, however, along with the practice of volunteering (Hustinx et al. 2010; Rochester et al. 2010, p.9-23; Whittaker et al. 2015). Within Australia, the peak national body recently adopted a more inclusive definition: "Volunteering is time willingly given for the common good and without financial gain" (Volunteering Australia 2015, p.2). The new definition encompasses a much wider range of emerging and less-traditional forms of volunteering compared to the past, including informal and episodic volunteering, corporate volunteering where employee time is donated, virtual or digital volunteering, as well as activism. Moves such as this towards more inclusive understandings of what constitutes volunteering in the modern context bring with them the possibility of greater recognition, protection and legitimacy for the wider range of volunteering that has always occurred in a disaster context. Greater recognition, however, also brings the potential for greater government intervention, which – as is discussed below –has potential to impact negatively on the motivations and emergent behaviours that underlie informal volunteering.

2.2. Revolution in communications technology

Another change that has significant implications for the way informal, post disaster volunteering occurs, and indeed all disaster volunteering, is the enormous impact of new communications technology. According to the United Nations Volunteer program, "technological developments are opening up spaces for people to volunteer in ways that have no parallel in history" (UNV 2011, p.26). Digital, or virtual, volunteering "has eliminated the need for volunteerism to be tied to specific times and locations. Thus, it greatly increases the freedom and flexibility of volunteer engagement and complements the outreach and impact of volunteers serving in situ" (UNV 2011, p.27). The explosion in social media and mobile technology in particular have reduced the communication and information barriers to participating in disaster response and recovery (UN-OCHA 2013, p.15). Thus it has fuelled a growth in 'digitally-enabled emergent volunteering' following disasters that takes place both on-site and online, or, as is often the case, in interaction (Reuter et al. 2013; Waldman et al. 2015).

The phenomenon of digital disaster volunteering in particular has garnered significant research attention since the massive response of digital volunteers to the 2010 Haiti earthquake (Meier 2012; Zook et al. 2010). This was a watershed event that opened the door on 'digital humanitarianism' that is truly global in reach (UN-OCHA 2013). Notably, digital volunteers have been found more effective than traditional government organisations at managing, collating, organising and disseminating the 'data deluge' that is spurred by disasters in the Internet age in near to real time to increase situational awareness (Bruns and Burgess 2013; Cobb et al. 2014; Hughes and Palen 2009; Jaeger et al. 2007; Kaminska et al. 2015; Palen and Liu 2007). A strength of digital volunteering stems from the enormous capacity of the Internet to enable crowdsourcing, particularly for volunteered geographic information (VGI) (Haworth and Bruce 2015). VGI "involves the sharing and mapping of spatial data … through voluntary information gathered by the general public" (Haworth and Bruce 2015, p.237) and it is particularly powerful for disaster situations. This is increasingly recognised by established actors. Notably, the Information Services Section (ISS) of the UN Office for the Coordination of Humanitarian Affairs (OCHA) activated a digital volunteering network – The Standby Taskforce – to produce live, crowdsourced crisis maps for the 2011 Libyan uprising that was subsequently used by humanitarian organisations to coordinate their relief activities (Meier 2012).

2.3. Greater private sector involvement

Another pertinent trend within the changing landscape is the growing involvement of the private sector through employee or corporate volunteering since the 1990s (Cavallaro 2006; Rodell et al. 2016). Employee volunteering occurs through diverse avenues. While structured employee volunteer programs are far more prevalent amongst larger companies (commonly referred to as 'corporate volunteering'), smaller businesses are also likely to be highly involved in their local community outside of organised volunteer programs as a matter of course (Madden et al. 2006). Employee volunteering increasingly overlaps with and reinforces another emerging trend, that of skills-based volunteering. In skills-based volunteering the – often professional – skills, training and experience of volunteers are sought out and matched with specific tasks needed by non-profits (Hands On Network 2014).

Due to its variability and a lack of data, it is difficult to gauge the full extent of employee and skills-based volunteering. It is not surprising then to find there is very little research on them in the context of disasters and emergencies. Despite this, it is clear that private sector involvement in all phases of the disaster management cycle is on the rise overall (Johnson et al. 2011; Twigg

2001; White 2012). However, to date their involvement is predominantly reactive and event-based. Notwithstanding, there is evidence of more enduring private-NGO and public-private partnerships developing that may promote more ongoing engagement (White 2012).

2.4. Growing government expectations and intervention

Growing government expectations of, and intervention in, volunteering and the voluntary sector is also reshaping the volunteering landscape. It is associated with the passing of classic welfare regimes – in which governments had a clear central role in not only funding but also providing social services – and the rise of mixed economies of welfare in countries such as Australia, Canada, the UK and the United States (Hustinx 2014). In this context, governments increasingly seek to encourage volunteering (Haski-Leventhal et al. 2010; Tenbensel et al. 2014), and there is "growing involvement of voluntary and community sector organisations in the delivery of public services" (Rochester et al. 2010, p.77) as well as greater government oversight of the voluntary sector generally (Tenbensel et al. 2014).

This picture is evident in Australia with voluntary organisations increasingly providing public services under tightly-regulated government contracts since the 1990s that exposes them to greater governmental influence (Warburton and McDonald 2009; Zappalà et al. 2001). As a result, the voluntary sector is experiencing less certain funding, escalating regulatory requirements, and increased demands on volunteers compared to the past (Flick et al. 2000; Oppenheimer et al. 2014; Warburton and McDonald 2009; Warburton et al. 2013). The regulatory burden on the voluntary sector is recognised by the Australian government (Commonwealth of Australia 2010) and the need to simplify regulation is included amongst the focus areas of its National Volunteering Strategy (Commonwealth of Australia 2011).

In the context of disasters, growing government expectations of volunteers and the voluntary sector is explicit in the shift towards resilience-based strategies that emphasise community resilience, self-reliance, and shared responsibility. This shift has both negative and positive potential with respect to volunteering and citizen participation in disaster management more broadly. On one hand, it is associated with a move towards greater civic engagement, capacity-building and a participatory turn in disaster governance (Bach et al. 2015; Scolobig et al. 2015; Vallance and Carlton 2015), and in public administration more generally (Bryson et al. 2014). On the other hand, it has been criticised as a government exercise in responsibility and cost shifting without an accompanying shift in power, as well as a manifestation of a neoliberal, small government agenda (Cretney 2014; Welsh 2014).

Very little research has yet examined the consequences of these changes for volunteers, either in a disaster context or beyond (Hustinx 2014; Warburton et al. 2013) However, commentators warn that the impacts are likely to be profound and not positive overall. Increasing bureaucracy, market concerns, and unrealistic government expectations of voluntary capacities all have potential to undermine the culture and values of volunteering (Bode and Brandsen 2014; Fahey 2003; Oppenheimer et al. 2014; Warburton and McDonald 2009, p.825). In the emergency management sector too, there are reports of increasing regulation and bureaucracy impacting volunteer governance, values and motivations within established EMOs, both governmental (e.g. Esmond 2009), as well as non-governmental (e.g. Oppenheimer 2014, p.242-267).

3. Australian opportunities and responses

Within the Australian emergency management sector, there is growing awareness of the impacts of this shifting volunteering landscape, and of the need for EMOs and the sector as a whole to respond to them. Broadly speaking, planning by established EMOs to support and engage with forms of volunteering beyond their traditional volunteer base is nascent but growing slowly. It faces significant barriers, however, stemming from tensions with the more command-and-control culture and approaches prevalent in many EMOs (Whittaker et al. 2015), the statutory obligations of state and territory emergency service agencies that have primary legal responsibility for disaster management, resistance by both paid and existing volunteer workforces, as well as safety and liability issues and concerns (Eburn 2010; Whittaker et al. 2015). The impact of quasi-judicial, post-disaster inquiries that put the actions and responsibilities of EMOs under intense public scrutiny focused on finding fault (Eburn and Dovers 2015) is also of particular significance in the Australian context as it is likely to encourage greater wariness and risk aversion. The following section lays out the Australian terrain. It describes opportunities and responses in the Australian emergency management setting across five strategic areas that are becoming increasingly important in the changing landscape.

3.1. Developing and implementing more flexible volunteer models

An important response needed by established volunteer-involving organisations is the development and implementation of more flexible volunteer models that are better suited to the diverse ways that people volunteer. The need for this approach at the organisational level is highlighted in research through mechanisms such as offering more diverse volunteering pathways and shorter-term engagements, and accommodating the different ways that people engage in volunteering over their lifetime (e.g.Macduff 2006; Macduff et al. 2009; Wilson 2012; Zappalà et al. 2001).

There are some very real limitations on the extent to which response-oriented EMOs in particular can ‘fit jobs to volunteers’ and engage shorter-term and more casual volunteers, given their need for skilled and highly-trained volunteers that are able to respond to call outs on very short notice in a high risk environment. However, research on episodic volunteering suggests that there are more opportunities available to EMOs than it may first appear. A sizeable proportion of episodic volunteers are ‘habitual’, volunteering repeatedly over time (see Cnaan and Handy 2005; Handy et al. 2006), and thus may be well-suited to less complex, seasonal roles with EMOs. Episodic volunteers can also exhibit greater flexibility, adaptability and pragmatism compared to more traditional volunteers (Macduff et al. 2009), with obvious benefits for working in changeable and dynamic disaster contexts. They are also more likely to commit greater time in the short-term to a project than people who engage in more sustained volunteering (Holmes 2014), which aligns well with the need for additional surge capacity in times of disaster. Furthermore, many episodic volunteers evolve into longer-term volunteers (Esmond 2009), and so offering short-term roles can serve as a potential recruitment pathway for more traditional volunteer roles. More specific to the emergency and disaster management context, a Canadian report lists a range of benefits from engaging episodic volunteers for health emergency response (CRC/SA/SJA 2008). They include: increasing organisational capacity, maintaining core services, providing specialised skills, and freeing up more highly trained volunteers to focus on more complex operations.

Volunteerism strategies of Australian EMOs are beginning to reflect these opportunities and to move beyond simply identifying the challenges posed by the changing landscape to their traditional volunteer workforces, towards taking up opportunities to engage with newer forms and styles of volunteering. Recent strategies in the state of Victoria offer an illustrative example. Flexible volunteering models, casual volunteer roles, and funding toward a new community-based service delivery model are three of the 13 strategic needs identified in the 2015 *Strategic Priorities for Emergency Management Volunteering in Victoria* developed by a state-level volunteer consultative forum (Volunteer Consultative Forum 2015). The strategic framework reflects the need, outlined above, for strategies to focus increasingly on 'fitting jobs to volunteers'. It calls for sustainable funding and investment to "prepare for the needs of new groups of people that want to volunteer. Taking advantage of emerging types/groups of volunteers and trends in volunteering will assist to successfully navigate challenges and build a sustainable foundation for service delivery in communities" (p. 5).

There is a similar focus in the 2015-2020 *Volunteerism Strategy* of the Country Fire Authority (CFA), which is the lead fire response agency in non-metropolitan areas of the state of Victoria (CFA 2015). The strategy recognises that the CFA's prevailing volunteering model is no longer suited to the new volunteering landscape:

> "Newer volunteering models are responding to an increasing trend of people looking for casual, short-term or specific volunteering roles. This approach presents challenges for CFA where we have traditionally depended on our volunteers to provide reliable and ongoing service, and on them having undertaken suitable training and accreditation to do so. We must explore and define alternative models for volunteering at CFA that are more flexible, responding to differing service and community needs, demographics and risks across Victoria. " (CFA 2015, p.14).

However, while identifying the need for more flexible and diverse strategies is a positive move, EMOs still have a long way to go to design and implement such strategies. Fostering the internal structural and cultural change needed to support this move is a challenge to be faced over coming years (Whittaker et al. 2015).

3.2. Harnessing the contribution of spontaneous volunteers

The increasing scale and visibility of informal, emergent citizen responses to disaster has led to a significant jump in government and research attention to this phenomenon under the new label of 'spontaneous volunteering'. In the United States a watershed event in this respect was the convergence of more than thirty thousand people, unaffiliated with emergency response and recovery organisations, on New York to assist following the World Trade Center disaster on September 11, 2001 (Liath 2004; Points of Light Foundation and Network 2002). In Australia, the massive public clean-up involving over 50,000 people that followed severe flooding in the city of Brisbane in 2010-2011, known in the media as the 'Brisbane Mud Army' similarly focused attention on spontaneous volunteering (Rafter 2013).

In this context, research and planning for spontaneous volunteering has blossomed in Australian emergency management over the last five or so years (Barraket et al. 2013; Cottrell 2010; McLennan et al. 2016; Saaroni 2015). At the national level, a Spontaneous Volunteer Resource kit was developed by the Australian Red Cross for the Commonwealth government in 2010 (Australian Red Cross 2010). More recently, the first National Spontaneous Volunteer

Strategy was endorsed by the Australia-New Zealand Emergency Management Committee in late 2015 (ANZEMC 2015). This is an important development that gives greater legitimacy to spontaneous and emergent volunteering following disasters, as well as to the need for established EMOs to plan for it.

At the level of states and territories as well as local governments, planning for spontaneous volunteering is progressing along different trajectories and is at various stages. A particularly promising response in this area, however, comes from the voluntary sector. It is the development and expansion of an applied and tested system for integrating spontaneous volunteers with organisational activities. Called Emergency Volunteering-Community Response to Extreme Weather service (EV-CREW), the system was developed by the peak body for volunteering in Queensland in the context of a series of large-scale and devastating natural hazard events across the state (Fitzpatrick and Molloy 2014; McLennan et al. 2016). EV-CREW is adapted from the business model of a temp recruitment agency. It involves registering and matching potential volunteers to the needs of government, non-government and community-based organisations that are helping impacted communities in the immediate post-disaster period. Capacity-building support for the recipient organisations is another important aspect to the model, given the novelty of this form of volunteer management for most organisations. By far the largest mobilisation of EV-CREW was for the 2010/2011 floods in Brisbane that also spawned the 'Brisbane Mud Army'. Over a period of a few weeks, Volunteering Queensland fielded over 120,000 requests to volunteer, and placed a conservative estimate of 23,000 volunteers with helping organisations, primarily the Brisbane City Council (McLennan et al. 2016). Since then, the EV-CREW model has been refined and improved, with added functionality that has significantly increased Volunteering Queensland's capacity to engage with potential volunteers and maintain registration information over time, and to rapidly match people's skills and availability to organisations' specific needs.

The EV-CREW model has also been taken up by volunteering peak bodies in three other Australian states and territories (Australian Capital Territory, Tasmania and Victoria). Alternative approaches to coordinating spontaneous volunteers are also used by volunteer peak bodies in two other jurisdictions (South Australia and Western Australia). In the first three jurisdictions, the Queensland EV-CREW model is being adapted to their different contexts. Notable additional capacity is being added in the state of Victoria through a program that trains 'peace time' volunteer managers to coordinate spontaneous volunteers on-site on behalf of local governments (Volunteering Victoria 2015). The need to deploy EV-CREW in response to a disaster outside of Queensland has so far been limited. However, the model has received broad support from EMOs, and an increasing number of local governments, which have a lead role in recovery, are building the EV-CREW based services into their formal emergency management plans. Furthermore, volunteering peaks have been designated the lead agency for managing spontaneous volunteers in Western Australia, the Australian Capital Territory, and Queensland, with other jurisdictions likely to follow. The use of this type of system to harness the capacity of spontaneous volunteers, and the closer involvement of volunteering peak bodies, is therefore likely to feature more prominently in Australian emergency management in the future.

3.3. Building capacity to engage digital volunteers

Digital volunteering presents great potential for disaster management in the area of disaster communication, but also risks and challenges (Burns 2014; Haworth and Bruce 2015; UN-OCHA 2013, p.36). Key challenges stem from tensions between the command-and control culture in emergency management and the very horizontal and self-organising nature of much digital volunteering. Research highlights that command-and-control structures "do not easily adapt to the expanding data-generating and -seeking activities by the public" (Palen and Liu 2007). Indeed, digital volunteering represents a potential force for decentralising and distributing authority within emergency management. It involves

> "not simply a technological shift [but] also a process of rapid decentralization of power. With extremely low barriers to entry, many new entrants are appearing in the fields of emergency and disaster response. They are ignoring the traditional hierarchies, because the new entrants perceive that there is something they can do which benefits others" (UN-OCHA 2013, p.15).

New technology has thus opened up 'virtual spaces' for volunteer participation and activism that provide a power platform for people "to make their voices heard, to coordinate activities across the globe and to mobilize public opinion" (UNV 2015, p.76). In a disaster context, digital volunteers can create and use the virtual spaces as platforms to coordinate informal responses that may or may not be integrated with and complementary to the formal emergency management system.

Within Australian emergency management, there is a nascent interest in digital volunteering. Yet, although EMOs are "exploring best practices for the greater incorporation of crowdsourced information into their processes" (Bruns 2014, p.352) there has been little movement toward engaging digital volunteers directly in response and recovery efforts. This is likely related to the fact that digital volunteer networks are not as established in Australia as they are in some other places, particularly in North America. This may be beginning to change, however. In January 2015 a digital volunteering campaign to map damage from the Sampson Flat bushfire in South Australia was launched by the Department for Communities and Social Inclusion (Williamson 2015). Even more recently, planning has begun to establish *VOST Australia*, a "Virtual Operations Support Team to provide surge support for emergency services in times of disaster", that has received support from the Queensland Fire and Emergency Services (Culleton 2016). Aside from these very recent examples, digital volunteering in relation to emergencies in Australia has predominantly occurred in relative isolation from the formal emergency management system and in quite emergent forms. Three notable examples are: the self-mobilisation of *Virtual Operations Support Team (VOST) Victoria* that monitored social media traffic regarding a coal mine fire in Victoria in 2011 (Wilkie 2015); the community-driven Facebook page *Cyclone Yasi Update* that arose in Queensland in 2011 (Taylor et al. 2012); and the *Tassie Fires – We Can Help* Facebook page set up by a member of the public that connected and coordinated volunteers to assist people impacted by a bushfire in Tasmania in 2013 (Irons et al. 2014; Paton and Irons 2016).

The *Tassie Fires - We Can Help* example in particular garnered considerable attention in the emergency management community, both positive and negative. Its founder saw a need for coordination of the large amount of information being circulated online about the fires and about ways to provide assistance. However, the page quickly evolved into an online platform that mobilised volunteers and donations across the state. It connected digital volunteers that administered the page with on-the-ground volunteers that assisted with tasks such as transporting donated goods. While the initiative was publicly lauded, it was met with caution by EMOs (Tasmanian Government 2013, p.171-2). Despite this, it served to focus EMO attention on the capacity of social media and digital volunteering to mobilise community responses, and led to recommendations for EMOs to more directly engage with, and plan for, people's use of social media in times of disaster (Tasmanian Government 2013, p.174-5).

Considerable scope and potential remains for Australian EMOs to build their capacity to engage with digital volunteers. An international report on collaboration between established humanitarian organisations and digital humanitarian networks emphasises the importance of "establishing a mutually beneficial collaboration framework" (Capelo et al. 2012, p.10). Conducting virtual exercises and drills with digital networks is another direction that EMOs are already pursuing in Canada and the United States (Griswold 2013; Kaminska et al. 2015). However, both of these require that digital networks exist prior to a disaster event rather than emerging in response to it. This is not always the case, and thus EMOs need to better prepare for emergent digital volunteer networks to spontaneously form just as they need to prepare for emergent volunteering at disaster sites (Griswold 2013; Waldman et al. 2015).

3.4. Tapping into employee and skills-based volunteering

Within the Australian emergency management sector, attention to private sector involvement with volunteering has largely focused on employer support for traditional emergency management volunteering amongst their employees (e.g. Commonwealth of Australia 2012; Esmond 2009). Beyond this, the level of involvement of the private sector in emergency management through employee volunteer programs and pro bono work is unclear due to a lack of data. However, there is certainly considerable spontaneous employee and skills-based volunteering (including 'pro bono' work) in post disaster times. Indeed, the mobilisation of EV-CREW for the Brisbane floods offers one example. Volunteering Queensland benefited from considerable corporate support to rapidly upscale its management capacity during this time, including many hundreds of hours of labour from employee volunteers with IT and database management skills (J. Molloy, personal communication, 20 July 2015). Smaller-scale community-based groups have also tapped into employee volunteering. An example is Community On-Ground Assistance (COGA) (Whittaker et al. 2016), a citizen-initiated program in the Kinglake area that was heavily impacted by the devastating 'Black Saturday' bushfires in this region in February 2009 (Teague et al. 2010). Led by local tradespeople with considerable experience in the building industry, COGA provided support to impacted residents for property clean-up and repair with government assistance. As part of its work, it offered short-term, team-based employee volunteering opportunities that fully complied with building industry Work, Health and Safety regulations.

Research shows that engagement with employee volunteering is most effective when ongoing relationships between companies and recipient organisations are established, and when recipient organisations have a strategy in place for coping with for-profit partners (Samuel et al. 2013). However, most involvement in Australian emergency management has been relatively reactionary and ad hoc, although there is some evidence of a growing focus on developing partnerships and programs for greater ongoing collaboration (Haski-Leventhal 2014; Volunteering Queensland 2011). This is another area where there is considerable scope to develop further capacity in Australia. The American Red Cross *Ready When the Time Comes* program is one example of a partnership model that might be considered. Through this program the Red Cross partners with businesses to train employees to volunteer with them in times of crisis. As at 2011, the program had over 11,000 trained volunteers from more than 460 businesses across 54 cities (American Red Cross 2015).

An opportunity also exists to capitalise on interest in skills-based volunteering by connecting with the growing movement of social entrepreneurship and the desire of younger as well as retired people to use their professional skills in more episodic, project-based volunteering roles. An example of Australian EMOs directly engaging skills-based volunteers is the episodic use of GIS professionals by the Emergency Services Agency in the Australian Capital Territory and the Department of Fire and Emergency Services in Western Australia to do on-site mapping following bushfire events, enabled through volunteer-led Mapping and Planning Support (MAPS) groups that are trained to support emergency services (see for example http://www.maps-group.org/). Another example coordinated by volunteers is Random Hacks of Kindness (RHoK). RHoK is an international movement that matches skilled technologists with "organisations that have a social impact… to develop open-source solutions to the challenges facing society" (RHoK Australia n.d.). RHoK Australia has supported a number of disaster risk reduction projects, primarily by developing innovative communication tools for raising public risk awareness.

3.5. Co-producing community-based disaster risk reduction

Community-based disaster risk reduction (CBDRR) is a fifth strategic area for EMOs to pursue in the changing landscape. Compared to more traditional government-directed programs, CBDRR reorients disaster risk reduction around principles of community participation, ownership and capacity-building (Shaw 2012). It thus reflects core principles underpinning resilience-based disaster management approaches. Indeed, increased 'community resilience' is often posited as a key outcome of, and rationale for, CBDRR (Bach et al. 2015; IFRC 2011).

Importantly, CBDRR is a co-productive process. Co-production is a form of citizen participation in policy making, in which citizens are directly involved in the execution phase of public policy through the design and delivery of public services at the program level (Alford 2009; Ostrom 1996). When co-production is focused on producing public value outcomes for communities, as is the case with CBDRR, rather than private benefit for individual clients, it is likely to involve participation by groups of community volunteers. Importantly, the co-production model in public administration is associated with the rise in government expectations of volunteers and the voluntary sector, and it has been similarly criticised as mechanism for responsibility and cost shifting by governments (Alford 2009; Bovaird 2007). However, there are recognised conditions under which co-production is most effective that, if met, are protective against this (Alford 2009). In particular, co-production is most effective when the contributions of volunteers and public officials are complementary rather than substitutive, or in other words, when the contributions of one cannot and do not replace those of the other (Ostrom 1996). Thus, CBDRR that meets the conditions for effective co-production has significant potential as a model for involving volunteers in new kinds of partnerships with EMOs that enable community capacity and ownership.

There is a considerable growth in CBDRR in Australia under the influence of resilience-based policy. While there are important government-led developments in planning and piloting CBDRR approaches (e.g. CFA 2014; EMV 2016), the growth is driven just as much by community groups and self-mobilised community participation in this area seems to be on the rise. For example, a number of community-led emergency planning groups have formed in bushfire prone areas on the outskirts of Melbourne, Victoria, with many forming after the Black Saturday that heightened people's awareness of their local bushfire risk.

One significant example amongst these is Be Ready Warrandyte – a three-year bushfire preparedness project led by the Warrandyte Community Association with state government as well as some local government and community funding (McLennan et al. 2015). Be Ready Warrandyte is notable for being community-led while also involving a high degree of collaboration between community volunteers and EMOs. The project developed a suite of locally-tailored resources, activities and events with the aim of increasing the level of household bushfire planning in the Greater Warrandyte area. Both community and EMO participants also recognised that the project served to share responsibility for bushfire preparedness across government and community at the local level. Importantly, Be Ready Warrandyte also highlighted the value of extending volunteerism, where an existing volunteer-involving organisation from outside the sphere of disaster management extends its activities into this sphere (Whittaker et al. 2015). The Warrandyte Community Association had a long-standing and respected position in its local community and with local governments that gave it considerable authority and legitimacy for undertaking such a project within both the local and emergency management communities (McLennan et al. 2015).

4. Conclusion

It is clear that disaster volunteering in Australia is impacted by the broader shifts in the landscape of volunteering in the twenty-first Century. The above discussion highlights responses in Australia to emerging opportunities within this landscape across five strategic areas. There are a number of research and practice gaps, however, that are also evident across these areas that need to be pursued to support further take-up of the unfolding opportunities.

The diversification of volunteering styles and the growth of shorter-term volunteering has brought challenges for Australian EMOs that rely on traditional models of volunteering. However, established EMOs also increasingly recognise new opportunities to engage with a wider range of volunteers by developing more flexible and diverse models but there remains a long way to go to design and implement such strategies. A key area of research needed to support them concerns the question of how traditionally ‘command-and-control’-based organisations can foster the internal cultural change required to embrace, or at least accept, less traditional styles of volunteering (Whittaker et al. 2015).

One area where there has been considerable advancement in Australia is planning and coordination for shorter-term, and less formal ‘spontaneous’ post-disaster volunteering. The design and adoption of EV-CREW, led by volunteering peak bodies, is a particularly promising development. Enthusiasm for such models needs to be tempered, however, by recognition that they do not replace either traditional emergency management volunteering or informal, emergent helping behaviour but instead increase the variety of ways available for people to contribute to emergency management and disaster recovery (McLennan et al. 2016). There is also much that research can do to support innovation and best practice in this area. Little is yet known about diverse forms of particularly skilled spontaneous volunteering, such as by self-deployed professionals (e.g. police officers) (Clark 2016). New models to coordinate spontaneous volunteers, like EV-CREW, also need to be evaluated in situ, with a focus on understanding their limitations, conditions for effective operation, their capacities to meet the needs of impacted communities, and how they can effectively broker interactions between the formal and informal ends of disaster response and recovery without undermining the values and motivations behind informal volunteering. Relatedly, little guidance yet exists on ways that established organisations can support and engage directly with emergent groups following disasters, while also recognising that informal volunteering cannot be ‘planned out’ of disaster response and recovery (Stallings and Quarantelli 1985).

The influence of new communications technology has unleashed digital and digitally-enabled disaster volunteering. In doing so, it has also become a force for decentralising and distributing authority within emergency management. While Australian EMOs are actively pursuing ways to better harness the potential of social media, there is considerable scope and potential for them to build further capacity to engage directly with digital volunteers. Recent collaboration to establish a Virtual Operations Support Team for Australia may provide some welcome impetus in this area. In addition to this, developing frameworks that outline principles for engagement and suggested actions, similar to the approach of the National Spontaneous Volunteering Strategy (ANZEMC 2015), is one area that warrants greater attention. Conducting drills and exercises such as those that have been used in Canada recently (Kaminska et al. 2015) may also assist EMOs to understand the nature of digital volunteering and how to engage with it more effectively to support and benefit the overall disaster management effort. In this area in particular, there is much to be learned from experiences in other countries.

There is little comprehensive information available on the involvement of the private sector in disaster volunteering in Australia. However, there is certainly growing interest on both the private and voluntary sector sides with a growing focus on developing partnerships and programs for greater ongoing collaboration (Haski-Leventhal 2014; Volunteering Queensland 2011). Notably, volunteer matching services like EV-CREW have the potential to facilitate greater use of skills-based disaster volunteering by EMOs in the future. As very little research is available at all in the area of employee and skills-based volunteering in a disaster context, this is one area where greater research attention is in particular need.

Similarly, very little research has yet examined the consequences for disaster and emergency volunteers of the changing institutional and organisational contexts of volunteering in the era of rising government expectations. There is a growth in Australian emergency management in community-based disaster risk reduction (CBDRR), which, when it meets the conditions for effective co-production between citizens and public officials, is a particularly promising model for involving volunteers in disaster preparedness that is protective against threats of undue responsibility and cost shifting by governments. A key area for further research in this area concerns the appropriate roles of public officials in co-productive CBDRR processes, and how EMOs can support their staff to facilitate and enable CBDRR in ways that build community capacity and ownership. A final area for further research that cuts across all the five strategic areas outlined in this paper concerns legal issues arising from new volunteer management arrangements and partnerships.

Underlying this paper is a theme of decentralising authority and sharing responsibility more widely in disaster management. It is clear that the future landscape of Australian disaster volunteering will be populated by a much wider and more diverse range of players than in the past. In this Internet age, these players will also be more interconnected. Sharing responsibility, authority and influence across this wider field will require a somewhat uncomfortable shift for much of the established emergency management community in Australia. However, given the types of developments outlined here, it is likely that established organisations will be compelled to make such a shift in the near future, regardless of their appetite to do so. The discussion in this paper points the way towards some of the practical and research endeavours that are needed to advance this undertaking.

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