3-2021

External impetus, co-production and grassroots innovations: The case of an innovation involving a language

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Citation

External impetus, co-production and grassroots innovations: The case of an innovation involving a language

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A B S T R A C T

In the field of innovation, three constructs co-exist in different research streams that are exploring disadvantaged communities - grassroots innovations, inclusive innovations and social innovations. In this paper we examine an innovation that involves language: the revival of a language among an Aboriginal tribal community in Australia. In our qualitative-conceptual analysis of the case, we uncover that a) the innovation appears at various stages of the language revival project to cut across the typologies of grassroots, inclusive and social innovations; b) complementarities in the three types of innovation contribute to project initiation, planning, and execution. Based on these findings, we extend the conceptualization of what has been typically accepted as grassroots innovation. Specifically, our analysis of the case calls for a conceptualization of grassroots innovation to include initiation of innovations by external parties and co-production on the part of local communities. We conclude with a proposition that the dynamics of grassroots innovation, originated, observed and conceptualized in the context of disadvantaged communities, could be incorporated in organizational contexts through policies and structure that empower the members of such organizations.

1. Introduction

Innovations are a key strategy employed by nations, communities, corporations and individuals to achieve progress. The contribution of innovations stems from the new and or improved approaches, processes, technologies, products and services that are the outcomes. The innovations can be radical (Schumpeter, 1934) or incremental (Afuah, 2003). The impact of innovations on businesses is tremendous especially if there is a disruptive innovation that shake up industry sectors (Christensen and Bower, 1995). The quest is thus for innovations. The source of innovations could be corporate research and development, efforts of employees, start-ups, universities, and research institutes (von Hippel, 1988). Corporations could seek comparative advantage through dominant designs (Suárez and Utterback, 1995). They have also enlisted users and sources of knowledge for innovations that are not necessarily within the control of the companies under the rubric "open innovation" (Chesbrough et al., 2006).

Innovation has also been called upon to aid progress in development, with the disadvantaged and underdeveloped sectors of economies. Grassroots innovation and inclusive innovation were introduced to help the nations fulfil the United Nations Millennial Goals that have re-emerged as the UN Sustainability Development Goals (United Nations, 2017). These innovations have one thing in common - they address poverty. Grassroots innovation was coined in line with India's innovation policy (Gupta, 1997, 2016; Jain and Verloop, 2012) with

the innovations coming from the grassroots themselves. The key idea being that the "small people" in contrast to "big business" can develop ways to help their communities through grassroots innovations (Gupta, 2012). The concept was earlier mooted as farmer innovations (Gupta, 1990) but in recent times has been encouraged by Nobel prize economist, Phelps (2015) who advocates the mass flourishing of grassroots innovations. In contrast, inclusive innovation is pro-poor as opposed to grassroots innovation being from the poor. Inclusive innovation is not limited to innovations that originate from the grassroots. Inclusive innovation addressee the need for innovations to address the needs of the disadvantaged, the people at the bottom of the pyramid, addressing poverty reduction (Agola and Hunter, 2016) through innovations that could be developed by business, government or entrepreneurial ventures.

Social innovation has developed independently of the other two streams. Its motivation is the development of solutions for social problems. There was also impetus on the part of governments to harness the energy and ideas of social enterprises to develop initiatives that could be help with social problems (Eggers and Macmillan, 2013). McGowan et al. (2017) traced the history of social innovation to sociology and a book by Ward in 1903. Others associate it with E. F. Schumacher (1973) in his book *Small is Beautiful* where he calls for intermediate technology to solve the social and economic problems of the poor. There are others who link it to wicked problems as defined by Rittel and Webber (1973) that are questions with parameters that are

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hard to define and which require solutions that are customized to the contexts.

The myriad of concepts has proven beneficial. Each type of innovation draws attention of business, government and society to the needs that exist and spur action. While many hands make light work, the profusion of concepts and labels can make for confusion.

Each of these streams is confined in its scope by the words that are used to circumscribe its territories. The common element in all three streams is innovation. As with all fields of human endeavour, the human actors engaged as stakeholders, press on with focus in disregard of others. There are justifications for the different frames of reference. Typical of new fields of inquiry, the boundaries of the types of innovation are still evolving. Yet there are complementarities and synergies that are overlooked when considering the concepts separately.

These questions came to the fore when the authors were faced with a quandary of how to classify the case we describe subsequently. The case involved an innovation - the reclamation of an ancient language that had been lost through colonialization. The language enabled an aboriginal group of people in Australia to coalesce as a community, develop an identity, and begin to revive their culture. The innovation was the result of an idea broached by a person from outside the aboriginal group and developed by the aborigines with assistance. In the rest of this paper, we examine the three types of innovation and then discuss the case. The case raises the question how one categorises an innovation that is sits across three different types of innovation. In seeking to characterize it, the paper contributes to the general field of innovation by drawing attention to gaps and complementarities in the concepts. We conclude with a proposition that the theory of grassroots innovation could be expanded to accommodate instances where there is co-production between the initiator of the idea and the community in developing and implementing the idea to create the innovation. As a corollary of the above proposition, we speculate that organizations can learn from the processes that are effective in grassroots innovation in empowering the members of the local community to empower the broad membership of the organization.

2. Theory: intersection of grassroots, inclusive and social innovations

We designed the literature review to map out the boundaries among the three types of innovation we focus on. We examine the types of innovation and how they specify the source of innovations, the role of outsiders, and the beneficiaries of each type of innovation. Grassroots innovation as a concept was originally conceived as innovation for the grassroots developed by the grassroots. Grassroots innovation has the focus on the strategic actors as coming from the community, the organization or the lower rungs in the social order. Their innovation is "by the people" "for the people" borrowing Abraham Lincoln's categorization from his Gettysburg address. The classic scenario would envisage an innovation champion within the local community developing an innovation that is subsequently diffused and adopted by the grassroots in the originating community and spreading to other communities, as illustrated by the many accounts provided by Anil Gupta in his book (2016). This perspective sees diffusion as an integral movement of innovation from within through widening circles and groups. The role of the outsiders - persons, organizations and institutions, from outside the local communities - is limited to facilitation and the provision of resources. For instance, in Nicaragua the local innovation became part of a national programme involving technologists and government agencies (Danielsen et al., 2013).

Other researchers identify grassroots innovation with movements. They adopt a broader definition to include people and organizations from outside communities moving inwards to mobilise, to facilitate and to empower grassroots innovation (Smith et al., 2013). Ethical capital, trust and networks are necessary for successful grassroots innovation (Gupta et al., 2003). The grassroots innovation systems often facilitate

the venture formation involving the innovators as means to improving livelihoods of the innovators and to diffuse of innovations, with varying success (Gupta et al., 2003). Inclusive innovation came to the fore with the identification of the neglected segment at the bottom of the pyramid, a term coined by C K Prahalad highlighting the untapped fortune that existed there (Prahalad, 2004). Innovations were needed to introduce goods and services to these quarters, to include them as beneficiaries through new marketing, approaches whereby products and services could be made affordable to them. Financial institutions funded new approaches to provide banking and financial services to the "unbanked" under the rubric "financial inclusion" as in the case of a research programme funded at one of the authors' universities.[1] Profit motivations and objectives, unlike the drive for grassroots innovations, shape many inclusive innovations. Others define inclusive innovation to refer to the process that results in innovations that address the needs of the disenfranchised (George et al., 2012; Guth, 2005). Policy and development circles have applied this definition to explore national systems for innovations that address the needs of the disenfranchised (e.g., Chataway et al., 2014; Guth, 2005), and the need for resources and capital for such innovations (Sonne, 2012). The overlap between grassroots innovation and inclusive innovation can be seen as local inclusion is an outcome of both types of innovation. In recent time, social inclusion has become increasingly associated with grassroots innovation movements (Smith et al., 2013). With this development, the boundary between grassroots innovation and inclusive innovations is blurred, because of their complementarity.

Turning our attention to the third concept, social innovation, it has been argued that social innovation existed from time immemorial as being intrinsic to the development of civilization (Cajaiba-Santana, 2014). "Social" as adjective is intended to distinguish innovations that embody societal goals from innovations with business goals. The academic dialogue on the theoretical underpinnings of social innovation is ongoing with frameworks being tentative (see e.g. Dawson and Daniel, 2010). In this discourse, the social aspect, which often takes the form of a social problem being addressed, is central. While social outcomes motivate the innovations being developed, there are situations where there are mixed objectives of profit and social returns. The innovation may, for instance, be developed and sold for profit while being at the same time provided at reduced cost for the needy. The innovations are at times referred to as hybrids, the common denominator being that the innovations be desirable in displaying a positive impact on the quality of life" (Pol and Ville, 2009). While social inclusion is not directly associated with social innovation, stakeholders play an important role in social innovation as participants, users, collaborators and co-producers (OECD, 2000; Voorberg et al., 2015).

There is thus a tension between the types of innovation highlighting the overlap between them in how phenomena may be categorized. The strands of literature acknowledge the uncertainty in definitions as the fields are evolving. There are complementarities between the types of innovation that can be explored as they address a common audience, a disadvantaged group. Our literature review highlights the difficulty classifying an empirical, real-life situation as one of the three types of innovation. This is explicitly relevant in the context of our study, in which a group of people (the grassroots community) is working on a project (the innovation) that could draw people together (inclusive outcome), provide social benefits (the social element), and be facilitated by a person from outside the group. The results include the development of the language and the grassroots community. In the next section we describe the methodology that is applied in our research and the research setting, followed by the findings from the case in Section 4.

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[1] MasterCard/SMU Research Program on Social Entrepreneurship and Financial Inclusion https://www.smu.edu.sg/conference/145181 accessed on 28 Dec 2017.

3. Method

3.1. Research methods

One author of this paper, Zuckermann (hereafter referred to as "the linguist"), had embarked on a language reclamation programme with the Barngarla people, an Aboriginal tribal community in Australia, described below in Section 3.2. The linguist was both an actor and a research subject as he approached the community with the idea and provided information and assistance: the revival of a language, which had been lost over time. The linguist was the participant-observer interacting with the Barngarla. His field notes, observations and interview accounts with Barngarla, who participated in the project, are the research materials on which this paper is based. The field notes have been published online as blogs about the project (see Appendix 1, where the project time line lists a few of these blogs). A number of the interviews also feature as YouTube videos (see Appendix 1). The second author provided the external, retrospective, and analytical perspective, framing the empirical observations of the linguist in the theoretical perspective of innovation.

3.2. Research setting

The research involved the Barngarla people, Aborigines who have lived in the area spanning from the Northern region of Spencer Gulf up to the south of Port Lincoln in South Australia from pre-historical times. The Barngarla have lost their native language as a result of colonialization (Zuckermann and Walsh, 2014). While visitors to Australia would be familiar with the Australian who speaks his/her Australian twang of English, they would be less aware of the languages of the indigenous people in comparison to the artefacts of their culture and civilizations foisted as tourist souvenirs: boomerangs, didgeridoos and the like. It should not be a surprise that their languages are seldom heard as many of them have been lost through the process of colonization. The settlers took the lands of the indigenous people. With the loss their lands, there was the break-up of their communities; in some cases arising from physical displacement from their lands. Colonization also encompassed the imposition of new cultures, practices and languages. The loss of communal life and the introduction of new languages, in particular English, led to the loss of Aboriginal languages. In the early colonial period, Aboriginal people were prevented from speaking their languages to 'civilize' them. The colonial ideology is manifest in a statement attributed to Anthony Forster, a nineteenth-century financier and politician. He was noted to state, at a South Australian Missionary Society meeting in aid of the German Mission to the Aborigines in Southern Australia in 1843, that the speed at which the Aborigines could be "civilized" would be hastened if their language were extinct (Scrimgeour, 2007). The continued use of their language, he noted, would perpetuate their prejudices and their language was limited and not able to convey ideas of civilized life. This civilizing intent and their accompanying actions led to only 4% of the known aboriginal languages (13 out of 330 languages) being spoken by native children (Zuckermann, 2015).

There is compensation for the loss of Aboriginal land from under the Native Title Act 1993 (Cth) which recognizes that some Indigenous people have continuing rights to land from their traditional laws and customs. Once they have Native Title to their land recognized, the government cannot extinguish these rights without compensation.

While there has been compensation made by the settlers to the aborigines for the loss of their land under Native Title (see, e.g. Bartlett, 2004), there has not been any such provision made for compensation for the loss of their languages (Zuckermann et al., 2014). Zuckermann et al. (2014) propose the enactment of an ex gratia compensation scheme for the loss of languages, recognizing the rights of Indigenous people to own, use and revive their languages.

Barngarla is the language of the Aborigines living in three locations - Port Lincoln, Whyalla and Port Augusta, in Australia. Barngarla is a Thura-Yura tongue which by 1960 was a language with few users among the children.

4. Key findings

4.1. External impetus

The innovation in this case had an external impetus in the person of a linguist from Cambridge University who had moved Australia. He decided he needed to contribute to his new homeland. The best way he felt he could make a difference was as a linguist. A trending issue in the press in 2004 was the injustice done to the aboriginal peoples. The other topic gripping public attention was the extent of bureaucracy in the country foreshadowing any efforts by a professor of linguistics who hailed from Israel to effect change.

On exploring the plight of the aborigines, he discovered the injustice done to their languages. The right thing in his mind, was to use his skills. Since he was neither a dentist nor medical doctor who could had improved their dental or medical health, he decided to explore how his skills as a linguist could benefit this group. He had experience conducting research on the revival of Hebrew as a language to morph into the Israeli creole (Zuckermann, 2003). Hence, he found the Barngarla language an interesting niche to work in – it was a green field as no one had attempted to revive the language. No Barngarla people spoke the language. A few elders had vague recollections but no clear ideas of the words. The only record of the language was dictionary and brief grammar of the Barngarla language written in 1844 by Clamor Wilhelm Schürmann, a German Lutheran missionary. The intention of the missionary is creating the dictionary was to translate the Bible and to evangelize the Barngarla people.

As a linguist he saw moral, aesthetic and economic reasons for working on the reclamation of languages apart from that being his research area. The moral reasons lay in redressing the "collateral damages" of colonization. Language has its aesthetics because the words used need not operate as English does but have their inherent beauty in reflecting time and directions. It also serves purposes as it is a way to understanding their health and wellbeing. Having a native tongue in addition to the English that has been introduced, would mean that their bilingual children would enjoy better non-linguistic cognitive abilities compared with monolingual children (Kovács and Mehler, 2009), improved attention and auditory processing (Krizman et al., 2012).

4.2. The innovation – reclamation of a lost language

There are three different approaches to address languages with no or declining users. They are reclamation, revitalization and reinvigoration. Each of these Rs addresses different conditions shown in Table 1 below. Reclamation is the revival of a language that is no longer spoken as was in the case of Hebrew. Hebrew was revived by Zionists

Table 1
Comparison of reclamation, revitalization and reinvigoration.

Reclamation	Revitalization	Reinvigoration
There were NO native speakers when the revival began. (e.g. Hebrew, Kaurna, Barngarla, Wampanoag, Siraya, Myaamia)	Severely endangered. Some speakers. (e.g. Adnyamathanha, Karuk, Walmajarri)	Endangered. Many speakers. (e.g. Welsh, Irish, Catalan, Quebecoise French)

who saw the need for language to unify its people in their new territory (Roberts, 2017). Language reclamation attempts to remedy the most extreme case of linguistic "extinction", as there are no existing users of the language. Revitalization is the revival of a severely endangered language, for example Cornish, a language of south west tip of England, which was once believed to have no native speakers, but for a number of native speakers as well as those who use it as a second language (Roberts, 2017). Revitalization is aided by the presence of some users. Reinvigoration is the revival of an endangered language that still has a high percentage of children speaking it, for example the Celtic languages Welsh, Irish, Catalan and Quebecoise French (Zuckermann, 2015).

The innovation in this case involved revivalistics. Revivalistics is a process employed by Zuckermann (2015) that combines scientific studies of native language acquisition and foreign language learning. The process draws from prior work done in reclaiming, revitalizing and reinvigorating languages elsewhere in the world. However, it was not the work of a single person. It required the Aboriginal community's involvement. The time-line of the reclamation of the Barngarla language is included as Appendix 1 to this paper.

4.3. Co-production

4.3.1. Identifying an "at risk" aboriginal language

The linguist searched for a specific Aboriginal community that lost its language due to linguicide (language killing) and would like to reclaim that language. It also had to be close to the linguist's location: Adelaide. The Barngarla community was one group who had been affected by colonization. There were Aboriginal families that were broken up for their good to be taught to use English and to stop using their mother tongue. In one account, Atkinson told of his mother who was denied the use of Barngarla from the time she was eight years old (Atkinson, 2013). At the time of the account in 2013, Atkinson's mother at the age of 60 had forgotten the language and could not string a sentence together. She discovered the same missionary community in which care she was, teaching the same tongue she had been forbidden from using as a child.

> When she confronted them, a missionary replied: "We realised that we did the wrong thing". They were trying to rectify that by promoting the speaking of language on the mission in later years, even against government policy. (Atkinson, 2013)

This account is but one instance of the stolen generations (also known as Stolen Children), the children of Australian Aboriginal and Torres Strait Islander descent who were removed from their families by the Australian Federal and State government agencies and church missions. This was the community the linguist approached in 2011.

4.3.2. Working with the community to reclaim the language

The community welcomed the invitation from the linguist, a respected linguisics professor at the University of Adelaide, for a meeting in his office. He suggested that they reclaim their language. They were eager to build their community through their language which would give then an identity. They agreed with his suggestion that it would contribute to improving their wellbeing, mental health, cultural autonomy, intellectual sovereignty, spirituality and education. A leader of the community, Stephen Atkinson recounted:

> In 2011, … the chair of linguistics and endangered languages, Professor Ghil'ad Zuckermann, contacted the Barngarla community about helping to revive and reclaim the Barngarla language. This request was eagerly accepted by the Barngarla people and language reclamation workshops began in Port Lincoln, Whyalla and Port Augusta in 2012. (Atkinson, 2013)

It was Howard, a member of the stolen generation, who opened the doors to the community for the interloper-linguist from the city (Castle, 2015).

The very nature of revivalistics involves putting the current speakers of the language at the centre of the exercise, as the language comes from the understanding and usage of the speakers. Revivalistics is a new trans-disciplinary field of enquiry that studies comparatively and systematically the universal constraints and global mechanisms (see Zuckermann, 2009), and the particularistic peculiarities and cultural relativist idiosyncrasies apparent in linguistic reclamation, revitalization and reinvigoration attempts across various sociological backgrounds, all over the globe (Zuckermann and Walsh, 2011). This process differs from the established approach of documentary linguistics, where the researcher's main concern is with recording the language at stake, namely, its form (grammar), and content (vocabulary and usage). In documentary linguistics, the language is taken as is, there is no revival in the sense of adopting what the speakers would understand or make of it (Himmelmann, 1998; Woodbury, 2003). The emphasis is on documenting the language before it is lost forever.

Revivalists, on the other hand, work with the community. Their work is much more than a laboratory endeavour that analysed a morpheme or a phoneme. The analogy that best described the role of the revival linguist is that of a facilitator. Unlike the documentary linguist, the revivalist works not with the medium of language but with the community, as active participants. The innovation is inclusive in its process. The community decides how words are to be spelt, the meanings to be adopted, their usage and other aspects. The linguist suggests what he or she considers appropriate but would not insist.

We observed the roles played by the various parties in this case as these roles need to be discussed subsequently. The initiator – the linguist, served as the facilitator. The innovation is the reclamation of the language. The innovators are the Barngarla as the innovation is only achieved when they adopt and use the language. The role of the linguist will be examined later as he was not a passive observer but also a participant. Hence, the researchers have referred to the joint roles of the grassroots community and the linguist as co-producers.

4.3.3. Progress

The linguist was equipped with Schürmann's dictionary from 1844. This dictionary became the starting point of reference of the reclamation. It enabled discussions with the community on their language. A major achievement was the creation of a Barngarla dictionary available on mobile devices and available on app stores. The list of activities that have taken place can be found in the time-line included as Appendix 1.

The process was long and is continuing. A coordination committee was assembled called the Barngarla Language Advisory Committee (BLAC).

5. Challenges in the process

5.1. A dispersed community

The community agreed but the people were spread across 3 towns: Port Lincoln, Whyalla and Port Augusta. These places are a distance from each other and from the main city in South Australia, Adelaide. They are shown in Table 2 below.

There were differences in the recollection of what words were used and their meanings. It was an oral tradition that depended on memories of people who did not use the language extensively. It was challenging as the process involved volunteers from outside the Barngarla community. They came from the university in the form of students, staff and faculty, and the Adelaide community. The distances did not help. It called for commitment for the volunteers to travel, meet and persist with the project.

5.2. A community that owned but did not use the language

While co-production begins with willing parties, there is the critical

Town	Distance from Adelaide	Travel time by car in good traffic	Distance to next town in table	Travel time by car in good traffic
Port Augusta	309 km	3 h 26 min	79 km	55 min
Whyalla	384 km	4 h 17 min	268 km	2 h 45 min
Port Lincoln	650 km	6 h 59 min	345 km	3 h 37 min

prerequisite that the partner is competent. Revival of a language required users not just people who asserted that they owned the language. As the revivalist team started their joint, work they discovered that some Barngarla claimed that they already knew the language even though they did not know a single word beyond the word Barngarla. It was disappointing to set up sessions when the participants were unable to fully contribute to the process. The Barngarla community needed to understand the difference between usership and ownership before progress could be made.

Although the language revival process was welcomed, there was opposition from one of the Barngarla "elders". He did not see the usefulness of the language reclamation and had a lawyer write to the university to object to the linguist's work with the Barngarla and the launch of the Barngarla Dictionary App. It is understandable as community engagements of this nature carry with them risks (e.g. Lerner and Simon, 2015). It was a social cause with academic elements. The university relented upon persuasive argument from the researcher that the project was worthwhile. The community, as a whole, was supportive and the opposition was overcome, and the dictionary app was launched.

5.3. Social issues

Language revival was primarily carried out through workshops. The other activities are shown the time-line in Appendix 1. However, language revival involved people and their lives, thence the linguist had to fulfil other roles as counsellor, advisor and sounding board to name a few. The additional roles played by the linguist included being involved in the lives of individuals in the community. As an illustration of the additional roles, the linguist had to become a suicide counsellor when a Barngarla youth threatened suicide during a workshop. Nothing in the workshop had prompted this situation. It was a normal workshop setting. Fortunately, the situation was brought under control and the youth provided with help and care.

In this process, Zuckerman described himself as fulfilling multiple roles:

> In the case of Barngarla I consider myself a revivalist rather than a linguist *tout court*. Revivalist means you are linguist, manager, psychologist, social worker, donor, adviser, driver etc.

5.4. The long road ahead

The reclamation process has not ended as the goals depends on the community. A community may desire to only reach a *post-vernacular* phase, in which people know several dozens of keywords in their traditional language. The Barngarla have assumed ownership of the project through the BLAC which has the full support of Barngarla "elders" - the Barngarla General Community Committee. The community decides where the process ends. The Barngarla community has continued to conduct their own workshops to educate their people. Four leaders of the BLAC have been trained as trainers in the Barngarla language, to further spread their language. Future steps could include having streets named in their tongue as well as in English and the introduction of Barngarla into the school curriculum as a second language. They could develop institutions that further the development of the language as a language has life. The university and its team now adopt the role of

resource provider.

5.5. Beyond the Barngarla

The report card for the project is most encouraging. Workshops are being conducted only once in every month at 1 of the 3 sites. Considerable progress has been made from the first reclamation workshop conducted from 18 to 20 April 2011. More than 130 active Barngarla members in Eyre Peninsula, South Australia, as well as more than 40 non-Aboriginal people speak Barngarla. Workshop participants report that they feel better about themselves, they get better scores at school in other subjects even though Barngarla is not yet taught at schools. Having reclaimed their language made them proud as they are now invited to conduct Welcome to Country rituals at various local and governmental events, where the Barngarla people highlight the cultural significance of their community.

The linguist admitted that his goal is more extensive than the Barngarla language or community. The process that their language reclamation undertook is now part of a course available online as a massive open online course on the revival of languages entitled "Language revival: Securing the future of endangered languages" offered by the University of Adelaide (see link to the MOOC in Appendix 1). Beyond that, there will be other languages at risk and the field of revivalistics to be developed so that the methods can be used to assist others in the world. This task will be gradually accomplished as the knowledge of the best methods to be employed are honed, and the graduate students being trained help spread the word.

6. Discussion

6.1. Complementarities, synergies and overlap

The case is interesting as it would on first instance appear to fit in all three types of innovation. We depict the overlap in the three types of innovation in Fig. 1 below. Each circle represents one type of innovation with the element in each circle being the core thrust. Social innovation emphasises social problems. Inclusive innovation focuses on inequality and inclusion. Grassroots innovation on the other hand necessitates the involvement of the grassroots in the innovation process.

Where the three circles intersect is their common ground - the beneficiaries – the local community or group. All three types of innovation aim to assist a group of people. Each type of innovation identifies the group they serve (hence the word "for" indicated where the intersect) differently. Grassroots innovation speak of the grassroots or local community. Inclusive innovation addresses the group or groups
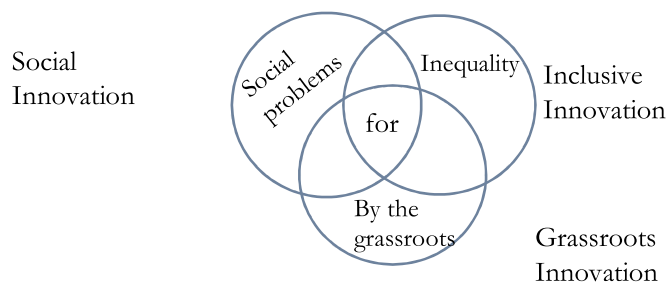

Fig. 1. Overlapping innovations.

that are excluded. Social innovation seeks to provide solutions to address a social problem, and the social problem is defined with reference to a group of people. At a higher level of abstraction, therefore all three types of innovation serve a group of people.

The complementarities arise where the three circles intersect. In the Barngarla case, the overlap suggests that there are areas where the fields could converge. Though the proponents of the three types of innovation may have different motivations and goals in mind, there are synergies to be harnessed in their activities, methods and efforts. There are areas where each type of innovation can draw from the others. The use of networks is significant in grassroots innovation (e.g. Smith et al., 2013). They are also cited as important with respect to social innovation (see e.g. Sonne, 2012). There are common elements, with another key being innovation. The revival of the language is the innovation. It is new, having been lost. It adds value to the lives of the Barngarla people. With language there is social identity (Ochs, 1993). This identity and the common bonds allow the Barngarla to work together forming bonds as language is the basis of communications which is a core component in interpersonal bonding (e.g. Javidi and Javidi, 1991). Through group cohesion, the community benefits through pooling of efforts, resources and knowledge in the same manner that has been observed in communities of practice (e.g. Lesser and Storck, 2001). Many poverty alleviation approaches require communities to participate in communal activities. There is often a need for the pooling of resources and effort of the collective group. Language reclamation facilitates these poverty alleviation efforts. Identity as a group promotes mutual assistance of others in the group; one can only encourage self-help as a community (see e.g. Berner and Phillips, 2005).

6.2. Type of innovation

While there is an innovation in the Barngarla language reclamation, there remains the question, what type of innovation it is. The revival of a language does not bring the Aborigines into the market of products and services that they did not have access to because they had been excluded. Nor does it bring them into the sectors of society from which they are excluded because of their poverty. It is an inward gathering of the Barngarla people. It could be considered an inclusive innovation if the language is considered a product, with the Barngarla being disenfranchised and deprived of the language, which the innovation restores to them.

Whether it is a social innovation depends on the innovation addressing a social need. In this case, the social need is not obvious as it was not expressed by the Barngarla people. However, it is a need in the same vein as latent demand, with the need being latent on the part of the Barngarla until it was pointed out to them. The meeting with the linguist sparked the community into realizing they had a need.

Barngarla language revival would also appear to be a grassroots innovation since the community were involved in the process. The community were also involved if one were to classify it as a social innovation. In characterizing the case as either a grassroots or social innovation, one has to address the fact that the linguist provided the impetus, the seed of the idea and was the source of the innovation. The question remains whether the linguist was the innovator, and if not him, who were the innovators.

6.3. Source of innovation – who was the innovator?

Table 3 below is an attempt to differentiate the innovations on the basis of the source of innovation and social inclusion as an outcome.

Innovations that benefit the local communities may spring from external impetus as Table 3 indicates. In all three types of innovations, the stimuli can be external. In inclusive and social innovation, the innovator/innovation can be from outside the community. Grassroots innovation specifically limits the innovation to being by the grassroots. These stimuli could be push or pull factors. These stimuli could lead to

Table 3
Types of innovation, source of innovation and social inclusion.

Innovation	Characteristic		Social inclusion
	Source (where must the innovation/innovator come from?)		
	Inside	Outside	
Grassroots innovation	Traditionally from the local community	Limited - to facilitate, provide resources, develop capabilities	Indirect
Inclusive innovation	Innovation could both be from inside and outside the community or group		Core criteria
Social innovation	Innovation could both be from inside and outside the community or group.		Indirect

communities taking action as in the United States where a few communities started their own schools when there were no schools nearby. In our case the actor and impetus came as an external party. The idea and innovation that lay in the discovering the 1844 dictionary that became a reference point for the language reclamation, working with the Barngarla community to confirm words, develop new words and usage and organising a systematic process to communicate and transfer the knowledge. The Barngarla community were on the slippery slope to language extinction and they were none the wiser for it. The fact that the impetus might be from outside the community does not trouble the characterization of the Barngarla language reclamation as a social innovation with the innovator being an outside actor working with the community (social engagement). Social innovation has been linked with developments of this nature in the literature (Amanatidou et al., 2018; Barnes and Schmitz, 2016). The same cannot be said of grassroots innovations as the actors are envisaged to be the grassroots, with the innovation coming from the bottom. This is depicted in Fig. 1 as the innovation being "by the grassroots" for the grassroots.

The discussion thus far has proceeded on the basis that the external actor is the innovator. If so, the language reclamation is a social innovation but not a grassroots innovation. The innovation would not sit well within grassroots innovation as defined traditionally as coming from within the grassroots. However, the facts need to be evaluated against the process of innovation. Rogers (1962, 2003) in his book *Diffusion of Innovation* espouses a five-stage process in his theory of innovation diffusion. The five stages are applicable to our discussion because the innovation comes to pass in all three types when there is adoption and diffusion (use of it).

1. Knowledge occurs when an individual (or other decision-making unit) is exposed to the innovation's existence and gains some understanding of how it functions.
2. Persuasion occurs when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation.
3. Decision occurs when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.
4. Implementation occurs when an individual (or other decision-making unit) puts an innovation into use.
5. Confirmation occurs when an individual (or other decision-making unit) seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation.

(Rogers, 1983, p.164)

Substituting the "individual" with the "community" in the stages, the external party, the linguist provides an idea, which could be rejected. Bearing this in mind together with the fact that the linguist facilitates the reclamation of the language, it is doubtful that one could

consider him to be the innovator. The linguist provided the idea sparking the realization within the community of their need but the idea by itself is not the innovation, and the linguist not the sole innovator. Had the community not decided to adopt, and to implement, there would have been no progress. Looking over the facts, it is clear that the major part of the work belongs with the Barngarla who contribute from their memories and their usage, as well as inputs, what together with the resource of the dictionary, constitute the language they possess at present. The methods and original idea that triggered the innovation sprang from an external source, but the grassroots innovation emerged from a process and the co-implementors (Gupta et al., 2003; Smith et al., 2013). Social innovation is also a process (Mulgan, 2006). Ideas by themselves are not innovations. In this way, the language reclamation could be classified as both a grassroots innovation and a social innovation and could be an inclusive innovation if one were to agree with the argument posed earlier. The authors prefer to classify it as a grassroots innovation since it mainly comes through the efforts of the Barngarla people. However, there is the element of co-production that we need to address.

6.3.1. Not the solo innovator: co-production and empowerment
6.3.1.1. Co-production. The Barngarla language reclamation is not that the result of linguist's action as a sole innovator. The linguist has no language without the community. Schürmann had developed the dictionary with a missionary purpose to teach the people the English language. It was essentially a book written in 1844 to assist a religious missionary to show the "heathens" the Christian light and to weaken their own spirituality which was viewed as animalism. Schürmann was not linguistically trained and influenced by his own German language leading to the dictionary containing words which were not phonetically accurate. Co-production was essential in this innovation as both the linguist and the community need to be engaged in the process of revivalistics.

Co-production has been examined in the business innovation literature. While the innovation literature has a primary focus on the innovator and in some cases, the team, co-production in the form of user involvement is now a common phenomenon. User innovation were identified researched by von Hippel (1988), while co-production and co-creation are a form of open innovation (Chesbrough et al., 2008). It is common to read about co-production in the business literature: in service management (e.g. Ordanini and Pasini, 2008), in financial services (e.g. Auh et al., 2013), and hospitality management (e.g. Chathoth et al., 2013). It has its origins in a field that also deals with citizens and the community. Elinor Ostrom has been recognized as the person who pioneered the concept of co-production (Alford, 2014). Ostrom with other researchers developed the concept in the 1970s in the sphere of public service – that the production of public services can require the participation of citizens (Alford, 2014). Ostrom defined it as "the process through which inputs used to produce a good or service are contributed by individuals who are not in the same organization" (Ostrom, 1996, 1073).

We argue that the innovation in the Barngarla case involves co-production. Co-production has application in the three types of innovation. Co-production is less cited in the inclusive innovation literature as the aim of efforts in inclusive innovation is action by others for the disenfranchised. The local community is considered a means through which inclusive innovations are diffused and find their value. It is, however, expected that the strategic actors in inclusive innovation engage with the community. The social innovation literature, in contrast, embraces co-production and co-creation, particularly by the citizens involved. Voorberg et al. (2015) in their review of the literature identified instances where the citizen played roles as social innovator, co-implementer and co-designer.

Grassroot innovation also resonates with co-production as the case we studied illustrates: the Barngarla people have been working with the linguist for the reclamation of the language (the innovation) to result.

There is a key difference that needs to be noted – the emphasis in grassroots innovation is on the community as the strategic actor. Hence, in grassroots innovation the community must play an active role in co-production.

6.3.1.2. Empowerment. The case also illustrates the aspect of empowerment that is inherent in grassroots innovation (Smith et al., 2013). As a process, grassroot innovation enabled the Barngarla people to act, to be galvanized and gather in support and involvement around the project. When grassroots innovation is encouraged, there is the element of empowerment through the facilitation, training and equipping, also called capacity building that often accompanies grassroots innovation (Gupta, 2012). Empowerment in recent times has found its way into the management literature in employee empowerment (e.g. Dean et al., 1992; Spreitzer, 1995, 1996). However, its origins stem from political science in the days of the civil and women's rights in the 1960s although the idea could be traced to Francis Bacon's book *New Atlantis* (Spreitzer and Doneson, 2008). The process of co-production has not just led to the revival of the language but also introduced to the Barngarla the element of self-help and competence, which arises from the ability to contribute to the project. In a manner similar to employee empowerment, the awareness that they can contribute as active participants, leads to a new mindset that welcomes change and encourages the Barngarla to step forward and take risks (Spreitzer and Doneson, 2008). The Barngarla are now organized. The Barngarla people are empowered through the language reclamation process. Whereas they were owners and not users of their forgotten language prior to the language reclamation process, they are have begun promoting its use through their own trainers. Empowerment has led to a change in the social structures, as there is now the BLAC which is supported by the elders. This situation was non-existent before the grassroots innovation process began. Just as employees in organizations are influenced psychologically by the organization processes and policies that permit employees to initiate projects and make decisions (e.g. Menon, 2001), the Barngarla have gained in confidence and after training have the competence to continue diffusing the language. Their mind-sets have changed, their mental health has improved and they possess their identity (Zuckermann and Walsh, 2016).

Whilst there has been research on empowerment in organizational settings, there has been little examination of the role of empowerment in grassroots innovation. Research is needed to examine the best structures that should be in place to liberate individuals in the grassroots to innovate, and to examine the psychological antecedents to empowerment for grassroots innovations, to list but a few possible research avenues. While grassroots innovation research can draw from the management literature, the organizational empowerment can also learn from grassroots innovation. There is great motivation in individuals when the innovation is carried out for the common good (the community) and not for the employers or organization. There is sense of camaraderie that occurs with grassroots innovation. The four Barngarla trainers are volunteers. Organizations could learn from the drive that arises from the grassroots when they are empowered. The empowerment that grassroots innovation makes possible could be better incorporated in organizational contexts through policies and structure that empower their members.

7. Conclusion

This paper demonstrates the power of innovation in transforming lives. The innovations need not be high technology. The simple reclamation of language can transform lives of people. The language reclamation empowers the people bestowing on them an identity and continuity as a unique people. The linguist seeded an idea with the leaders of the Barngarla that has sprouted beyond the language reclamation. The process of innovation in the reclamation did not stop

with the language and will now extend into other efforts to improve their situation. The process had brought the grassroots together and provided the confidence that the community can achieve other projects together.

Innovation offers much for development in addressing the needs of the poor. The classification of the type of innovation is not just interesting for research purposes but provides lenses and levers for the policy makers who wish to encourage innovation for development. The encouragement of action for innovation could be based on the type of innovation sought to be encouraged. Many countries around the world have initiatives to encourage social innovation or social enterprises for example, in the United Kingdom (Social Enterprise UK. https://www.socialenterprise.org.uk/) and in Canada (e.g. Social Enterprise Ontario https://seontario.org/). These efforts are directed at the motivation for social innovations. Understanding the types of innovation and the motivations behind them allows for the policy measures to be targeted. However, there is also value in encouraging innovation for the intersection of the three types, the community or group, and at the same time permitting the policy incentives to address inclusive outcomes in addition to addressing social needs, and for encouraging community engagement and action. The Barngarla case illustrates the potential that can be harnessed when the community is involved.

While this paper has explored the complementarities in grassroots innovation, inclusive innovation and social innovation, which are innovations addressing needs of the poor, there may dividends in exploring their extensions into other arenas. As noted earlier, there is scope for considering the lessons community empowerment can offer to organizations. The idea of such cross-pollination may appear strange but it is often in awkward juxtapositions that new insights can be drawn. Many businesses, for instance, seek to build inclusion using slogans like "we are a family" as part of their cultures to that stakeholders will naturally contribute to the organizations, not just in efforts but in innovations. They could take a leaf or two from grassroots innovation, inclusive innovation or social innovation for each of these innovations incorporate the element of empowerment and engagement. The same could be said of researchers who need fresh lenses to draw their attention to phenomena.

There is also scope in the light of the overlap and complementarities for the ideas to converge and with the convergence for the development of a type of innovation that subsumes the existing forms. Until then, it is opportune for researchers to review the conceptualization of grassroots innovation to include the initiation of innovation by external parties and to conduct research on the role of co-production in grassroots innovation.

Appendix 1. Barngarla Timeline

2010: Zuckermann appointed Chair of Linguistics and Endangered Languages at the University of Adelaide, surveys all Aboriginal languages in South Australia to find a specific reclamation project.

2011: Zuckermann contacts the Barngarla community of Eyre Peninsula and invites their representatives to his Adelaide University office. They are excited to hear about the possibility of revival.

2012 - 18-20 April: first reclamation workshop.

2013 - February. The first Barngarla delegation to the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS): Dr. Luise Hercus, Professor Ghil'ad Zuckermann, Vera Richards (Port Lincoln), Elizabeth Saunders (Port Lincoln), Sheldon Richards (Port Lincoln), Jayden Richards (Port Lincoln), Dawn Taylor (Whyalla), Dawneen Saunders (Whyalla), Jeanita Taylor (Whyalla), Malika Carter (Whyalla), Linda Dare (Port Augusta), Steve Atkinson (Port Augusta), Robert Wilton (Port Augusta).

- May, the reclamation of the Barngarla language is featured in an episode in Living Black a series produced by the National Indigenous Television (NITV) of the Special Broadcasting Service (SBS) of Australia: https://www.youtube.com/watch?v=DZPjdNaLCho

2013: Visit by Revd Volker Dally (then director of the Leipzig Lutheran Mission, where Clamor Wilhelm Schurmann came from).

2014: Establishment of the Barngarla Language Advisory Committee (BLAC).

2015 - Launch of Zuckermann's Barngarla Online Dictionary (revising Clamor Wilhelm Schurmann, 1844)

- Launch of Zuckermann's MOOC *(Massive Open Online Course)* featuring Barngarla: *Lang101x: Language Revival: Securing the Future of Endangered Languages* (second author: Rob Amery), so far attracting 12,000 students from 190 countries

2016: 27 September - the Barngarla Dictionary App is launched.

2017: Barngarla people are invited to conduct Welcome to Country, in language, in various events across Eyre Peninsula.

2018: - Navigator College, Port Lincoln, names one of its buildings Mangiri, Barngarla for "well, healthy", beginning to change the lanGscape (Linguistic Landscape) of the environment:

   https://www.portlincolntimes.com.au/story/5615066/navigator-looks-to-barngarla/

- Zuckermann begins to train Barngarla people (e.g. Jenna Richards, Galinyala = Port Lincoln) to become Barngarla teachers and to eventually take over the facilitation of the Barngarla revival.

- Visit by Revd Ravinder Salooja (director of the Leipzig **Lutheran** Mission, where Clamor Wilhelm Schurmann came from).

2019 - Zuckermann and the Barngarla establish Barngarla cultural linguistic art centres in Galinayla (=Port Lincoln) and Goordnada (=Port Augusta).

- March: Launch of the Barngarla Alphabet Book.

- Zuckermann is preparing user-friendly Barngarla presentations on the following topics:

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