CITED: Exploring co-production and evidence-based podcasts as a mechanism for social change

RESEARCH REPORT (2018)

Summary: Podcasts are emerging as an innovative knowledge mobilization (KMb) mechanism for research dissemination, especially when trying to reach non-academic audiences. CITED, led by Dr. Allen Sens out of the University of British Columbia, is a podcast that creates KMb podcasts by blending expertise of researchers, journalists and community members to inform debates on important societal issues. This report, through interviews with 15 stakeholders involved with the project, explores the similarities and differences in the views of researchers, journalists, and community members in relation to research, co-production, public policy, and societal change. Findings indicate that CITED addresses research-practice-policy gaps through increasing awareness, accessibility, engagement with the public, collaboration among research producers and users, representation of diverse perspectives and voice, and capacity-building among researchers and journalists. Eight strategies for effective co-production are suggested: (1) define and describe target audiences, (2) define co-production roles and goals at the outset, (3) engage in practices that build trust and ensure mutualism, (4) develop cultural action plan, (5) make use of brokers, (6) identify and utilize institutional supports, (7) invest resources (time and money) into interaction preparation and training, and (8) make capacity-building for each stakeholder a co-production goal.

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RIPPLE | Research Informing Policy, Practice & Leadership in Education

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CITED: An exploration of co-production and evidence-based podcasts as a mechanism for social change.

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PROJECT TITLE, FUNDER, & TEAM

CITED: Partnered knowledge mobilization between researchers and media organizations
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ABOUT RIPPLE:

Dr. Amanda Cooper, Assistant Professor in the Faculty of Education at Queen's University, is the Principal Investigator of RIPPLE. RIPPLE (Research Informing Policy, Practice and Leadership in Education) is a program of research, training and knowledge mobilization aimed at learning more about how knowledge brokering can increase research use and its impact by leveraging multi-stakeholder collaboration. Samantha Shewchuk, a doctoral student at Queen's University, is the program manager for RIPPLE. For more information visit: *WWW.RIPPLENETWORK.CA*

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THE CHALLENGE

A major area of debate in the current climate of higher education, is how to move academic research beyond the ivory towers, to inform public debate, public policy, and practice in public services for the benefit of Canadian citizens. The Social Sciences and Humanities Research Council of Canada (SSHRC) calls this pursuit, knowledge mobilization (KMb):

> The reciprocal and complementary flow and uptake of research knowledge between researchers, knowledge brokers and knowledge users—both within and beyond academia—in such a way that may benefit users and create positive impacts within Canada and/or internationally, and, ultimately, has the potential to enhance the profile, reach and impact of social sciences and humanities research (SSHRC, 2018)

There is no agreed upon formula for successful KMb, especially with diverse audiences. We know quite a bit about why research in traditional formats does not get used (journal format, length of reports, inaccessible language, paywalls for academic journals), but far less about how new variations of research (multi-media products, podcasts, interactive mediums) are being engaged in and received by researchers, end-users, and the broader public. The focus on KMb has produced a flurry of activities in recent years as researchers and communities try different approaches to working together from plain language summaries, to multi-media products, with most efforts trying to reimagine the ways that research can be presented, co-produced, and integrated into policy, practice, and society that might make evidence a more powerful determinant in societal outcomes. This report explores the use of podcasts as a KMb mechanism from the perspectives of the production team, researchers, and journalists.

THE SOLUTION

The University of British Columbia decided that the ivory tower needed a radio antenna and CITED, a series of evidence-based podcasts, was born (www.citedpodcast.com). *Cited: Partnered Knowledge Mobilization Between Researchers and Media Organizations*, funded by a SSHRC Partnership Development Grant, creates KMb podcasts by blending the expertise of researchers, journalists, and community members to inform debates on important societal issues. Although media remains an important source for the accurate, complete, accessible, and engaging coverage of science (Canan & Hartman, 2007; Chapman et al., 2014; Hans Peter Peters et al., 2008; Saenz & Moses, 2010; Yettick, 2015), the literature of researcher-media partnerships tells a story of worlds that remain largely uncoupled (Dunwoody, Brossard, & Dudo, 2009). This study investigated the tri-partite model of *Cited* (research-community-media) as mechanism for science communication with the public. We were interested in learning more about participants' experiences being involved in the podcasts (researchers, journalists, and community members), how they view the roles of evidence, community perspectives, and media in a pluralistic democratic society, and thoughts on the potential impact of evidence-informed, co-produced podcasts as a KMb mechanism.

RESEARCH QUESTIONS

1. What research-practice-policy gaps does CITED address?
2. What differences and similarities exist among the three groups' perceptions of issues relating to co-production and knowledge mobilization in the current societal context?
3. What are the facilitators and barriers to researcher-community-media partnerships?
4. What strategies or tools might support researcher-community-media collaborations in future work?
5. What impacts has CITED had?

CO-PRODUCTION MODEL
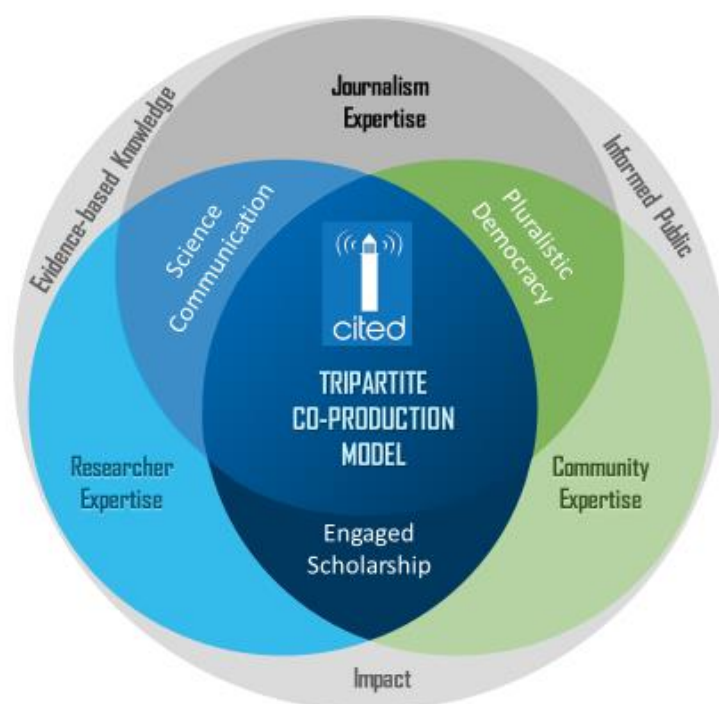
The *Cited* tripartite model for creating evidence-based podcasts revolves around co-production among journalists, community members, and researchers that results in engaged scholarship, science communication, and each episode reflecting the differing views on an issue arising from our pluralistic society. It should be noted that community members are often included as part of the story and are not necessarily involved in co-production. Each KMb podcast is coordinated by a core-production team (CPT). The *Cited* model also includes a community of practice for researchers wanting to learn about utilizing media for science dissemination, as well as two committees that guide quality control of each podcast and topic. In addition to the multi-stakeholder groups that surround and inform co-production with the CPT, a variety of outputs are created alongside each podcast to increase dissemination and visibility of each topic, including: annotated bibliographies of journal articles that were integrated into each episode, bonus interviews with key stakeholders, blog posts, and social media and broadcasting coverage of featured podcasts by our media partners to maximize spread of our science-informed podcasts to their listeners.

Table 1

Key terms for understanding the *Cited* model of co-producing KMb podcasts

Term	Definition
Research	Data collected, analyzed, and interpreted through systematic and established formal processes of inquiry (Amanda Cooper, 2014). Research "can be independently observed and verified, and there is broad consensus as to its contents (if not interpretation)" (Davies, Nutley, & Smith, 2000, p. 2).
Knowledge mobilization	Building from the SSHRC definition, we define KMb as the processes through which research and other forms of evidence are integrated into policy and practice within public service sectors (Amanda Cooper & Levin, 2010).
Co-production	The purpose-driven interaction between different stakeholders to see that research has both academic merit and relevance for community action (Phipps & Shapson, 2009). Co-production exists on a continuum from the representation of multiple voices (Coburn, Penuel, & Geil, 2013) to full participation at each stage of the research process (Phipps, Cummings, Pepler, Craig, & Cardinal, 2016).
Impact	The influence research and other forms of evidence have "upon wider society, intended as well as unintended, immediate as well as protracted." (Federation for the Humanities and Social Sciences, 2017, p. 13). Impacts can be academic (i.e., scholarship, capacity-building) or societal (i.e., policy and practice, society and culture, and the economy).

METHOD

The findings presented in this report derive from 15 in-depth, semi-structured interviews with *Cited's* three key stakeholder groups (researchers, journalists, community members) and the CPT. Six podcast projects are represented in these data (Table 2), touching upon a range of salient societal issues. A detailed protocol (see Appendix A) was followed during each interview to "ensure that the same basic lines of inquiry [were] pursued with each person interviewed" (Patton, 2002, p. 343) as well as to ensure relevant, important information for answering the research questions was obtained. The interview protocol was piloted and revised based on feedback from relevant stakeholders. Data analysis was conducted using a team-based coding

manual (MacQueen, McLellan-Lemal, Bartholow, & Milstein, 2008) in conjunction with inductive coding methods to ascertain emerging themes and similarities and differences arising across the various stakeholder groups.

SAMPLE

Since 2015 Cited has recruited over 100 researchers and 100 non-academic stakeholders to partner in our KMb podcast projects. From that population, we purposefully sampled researchers (N = 7), journalists (N = 5), community members (N = 1), and CPT members (N = 2) who could provide rich and detailed information about their experiences with *Cited* and their perspectives on co-producing KMb products tailored for the public. We chose stakeholders that had participated on six podcasts (2-3 participants per podcast), in order to highlight different perspectives on the creation of each podcast. Prior to data collection, biographical detail for each participant was gathered and the relevant *Cited* podcasts were systematically screened by the research team. Building out these contextual information sources ensured that each participants' area of expertise and relevant experience could be explored in detail.

DATA COLLECTION

A detailed interview protocol was developed in relation to the key themes that emerged from a scoping review of the extant literature concerning the interactions between researchers and the media for research communication (MacGregor, Cooper, Coombs, & DeLuca, 2018). Additionally, several scholars who have published extensively in the field of research communication—Drs. Erik Albæk, Sharon Dunwoody, Simon Chapman, Sharie Wallington, Charlotte Wien, and Holly Yettick—were contacted to request review of the interview protocols used in their studies. The initial interview protocol was piloted with a scholar possessing expertise in the field of KMb and circulated internally for feedback from the *Cited* steering committee. The final interview protocol addressed participants' perceptions of each stakeholder's role in research-media partnerships, of partnerships in general, and of their experiences with *Cited* (see Appendix A).

All interviews were conducted electronically using the Zoom video conferencing software, lasting between 60 to 90 minutes. Interviews followed a standardized open-ended structure, which provided consistency across participants' interviews and allowed participants to fully detail their thoughts and experiences (Saldaña, 2015).

DATA ANALYSIS

Interview data were transcribed, coded, and analyzed following a hybrid approach of inductive and deductive coding (Fereday & Muir-Cochrane, 2006), with rigour established by use of a team-based coding manual (MacQueen et al., 2008) and member checking of interview transcripts. The coding manual was developed in relation to our conceptual framework and

iteratively modified based on feedback from the *Cited* steering committee and conversations within the research team. Our coding framework utilized the three types of codes described by DeCuir-Gunby, Marshall, and McCulloch (2011): "Codes can be developed a priori from existing theory or concepts (theory-driven); they can emerge from the raw data (data-driven); or they can grow from a specific project's research goals and questions (structural)" (p.137-138). For the theory-driven and structural codes, each code was assigned a label, a brief definition, and a full definition to ensure consistency in analysis across the research team (MacQueen et al., 2008). We also developed purpose statements for each section of the coding manual to outline the rationale for collecting each dimension of the data. Taken together, these methods helped to ensure reliability and a systematic process to analyzing data from each stakeholder group and the CPT.

FINDINGS

CITED ADDRESSES PERSISTENT RESEARCH-PRACTICE POLICY GAPS

Participants involved in CITED podcasts identified a number of research-practice-policy gaps that the design of the project (blended views of researchers and end-users told with journalistic flair) addressed. CITED fulfilled five major brokering functions including: (1) Increasing awareness of empirical evidence on important societal issues (2) increasing **accessibility** of research, (3) increasing **engagement and collaboration** with (a) relevant stakeholders involved and (b) with broader audiences, (4) **representing multiple voices** to illustrate the complexity of societal issues from multiple vantage points, and (5) **capacity-building** for the various groups.

Evidence of brokering functions from interviews:

> *(1) Awareness & (2) Accessibility*
>
> "I think that there is no question that academic jargon is on the one hand a crucial sort of short form frankly that allows academics in more and more rarefied fields to talk to tone and other about complex concepts and enables them to take the research further. On the other hand, that jargon becomes completely exclusionary to anyone who's not deeply steeped in that particular field" (Journalist)
>
> "to help simplify and explain….to provide context….to make information more understandable" (Journalist)
>
> "[CITED] was such a good communications tool to break down a concept that was a little bit inaccessible for people" (Journalist)
>
> "Despite the research being incredibly complex, and my having zero scientific background, [CITED] were able to make it accessible in a way that was accessible to the general public…. So it was successful because they were able to convey their research in a way that was articulate and simple enough for me to understand" (Journalist)
>
> *(3) Engagement & Collaboration – Sum is greater than its parts*

"I think that is really the crux of it, is that for each sort of group that you've identified here; researchers, community, media, it enables each of those groups to become more deeply connected to each of the other groups, which I think benefits everyone" (Journalist)

"To create a fuller picture. I think if the three [researchers, journalists, community members] are working together well in concert, the possibilities are kind of limitless" (Researcher)

(4) Representation of diverse perspectives and voice

"I often brainstorm with [end-users], because they have a different kind of knowledge about the topics that I can never have. And so that's been really helpful. For me, and just sort of thinking of angles or issues that I wouldn't have otherwise thought about" (Researcher)

"I work closely with people on the ground there and I benefit from the information they give me from the places where they work" (Journalist)

"That those voices were privileged at the same level as the research voices. So I think that's another key to why this [model] was successful is that we didn't have the researcher, the academic sort of held on some kind of pedestal or have their perspective privileged in a way" (Journalist)

"I think for community actors being involved, I think it's an important way to tell their story…A thing that I say constantly is to give them the chance to tell t heir story in their own words….If they're involved in a podcast its even more powerful because their voice is literally being heard by other people, and I think it's a really important aspect" (Researcher)

(5) Capacity-building

"Collaborating with researchers means that it's based in some kind of fact and some sort of observable phenomena that happened in the world, which is good. And then having the media person, the communicator, they are able to pick out what is interesting about that story, and they understand at a very deep level how people consume information and can put it in a format that people are likely to actively want to listen to or watch" (Journalist)

IMPORTANCE OF COMMUNITIES CO-PRODUCING PRIORITIES FOR RESEARCH

Journalists and researchers both highlighted the importance of community knowledge, and the need for co-production of priorities for both research and media coverage. Both groups recognized the power of community knowledge in shaping societal issues.

"If research is publicly funded, then I think there should be an opportunity for a bit of a democratic process helping that research take shape. So I think if the community is

> interested that they should be able to play a role in sort of expressing what questions are important to them, what topics, that sort of thing" (Journalist)
>
> "Communities should definitely be at the table. They understand the matters as they affect their particular community better than most: better than the press, better than policymakers, better than researchers, because they're operating at the ground level. So I think their role should be amplified if anything" (Researcher)
>
> "There's been a number of studies where sort of toxic areas that were producing extraordinarily high rates of disease, were identified by community members. And they reached out to researchers and they formed these collaborations. And community members played a really important kind of participatory role in developing it" (Researcher)
>
> "Communities are mood makers as well, and they're called upon to speak from lived experience on any particular [topic]… ideally they would be contacted to speak from their lived experience on stories that affect them" (Journalist)

WHY INVOLVE RESEARCHERS AND JOURNALISTS?

While it was clear that community voice had a role to play in research and media processes, both researchers and journalists talked about the benefits of strong collaborations among stakeholders. They recognized that they brought different skill sets to the table, and the reason to collaborate was that more could be accomplished collectively than individually. Researchers often lacked the ability to communicate compelling narratives; whereas, journalists often lacked the time and resources to dig extensively into a body of evidence on a particular issue.

> "research is time-consuming. It requires expertise. In our day to day lives as journalists and producers, we don't have time to do in-depth research in the way you might do at a university. So those kinds of partnerships allow us to benefit from that research, because we wouldn't have had the resources to do that ourselves, and to benefit from that expertise" (Journalist)
>
> "Journalists have the skill set of, sort of, finding the way to tell something as a story in a way that will captivate people, that they'll want to listen or want to hear something… And I just don't think [researchers are] trained in that way" (Researcher)
>
> "I think there was an understanding that we had different skill sets, and that together they would amount to something good. They would amount to a product that could be read by any number of people, so I would say that was, there was a mutual respect for each other's ability" (Researcher)
>
> *Importance of Storytelling*
>
> "This is public academia. It was meant to be thorough and researcher, but then also meant to be interesting and engaging and relevant" (Researcher)

"What it comes down to is people are really influenced by stories more than numbers, so I think we need to encourage the kind of reporting and media engagement that tells human stories about what's going on" (Researcher)

"Stories shape our lives. Stories shape our media and academic publications. We live story lives, to quote another academic, Julie Cruikshank. There's a social life to stories, to use another idea of hers. And what's required, in my view, in the academic world, more than anything else, with regard to the issues that you and I are talking about, is something that they call within healthcare, narrative efficacy. More than technical knowledge – narrative knowledge" (Researcher)

IMPORTANT ROLE OF EVIDENCE IN SHAPING PUBLIC PERCEPTION

Many also saw the potential for research and journalism, when powerfully blended, to shape outcomes for society and to incrementally move the needle on public opinion.

"The media has a huge agenda setting role, so they don't tell people necessarily what to think but they do kind of set an agenda of what to think about" (Journalist)

"We do see it as important to provide the public with information. You know, the public needs to be informed. That's super important in a free and democratic society. So it then empowers citizens to either make a decision when you're voting, or in how they engage in society. That is our role. To encourage citizens to participate in our society. And you can only do that where you have information" (Journalist)

"If you look at all the research [on injection sites for treating addiction], you can look at it culturally and narratively. So the researchers all…. Every paper, every-peer-reviewed paper had a cultural nugget in the middle of it. Do injection facilities increase crime? That's a narrative. Public believes they do. Study, it proves that true or not. And it's released in a strategic way within the media…. You're slowly sculpting public opinion, but you're really changing culture. You're not changing it randomly. You're not changing it to be controversial. You're changing it because the facts indicate that it is necessary" (Researcher)

Evidence can change public perception of an issue

"There was one piece of feedback that we got that was really neat from our third partner…. They did sort of a post-op show after the documentary aired and where their team sat and discussed it on the radio. And two or even three members of that…team talked about how they were really sceptical or even hostile of the subject that we covered, prescription heroin. But after listening to the documentary that CITED produced, they really came around to the idea and not just learned more about it, but actually changed their views and opinions on it. So I thought that was a really neat piece of evidence of impact" (Journalist)

ACCOUNTABILITY FOR POLICYMAKERS AND GOVERNMENTS

The role of not just the media, but evidence on important societal issues reported through the media serves an important accountability function to keep the government, policymakers, and politicians making informed decisions for the public that elected them.

> "[Media] should be there to, sort of, promote democracy but also, sort of, keep accountable…the people who are in power, and the decisions that are made" (Researcher)
>
> "The media has a role in giving voice to communities which have been traditionally silenced or underrepresented" (Journalist)
>
> "Media in a democratic society is about holding our leadership to account. It's about consistently and constantly no matter who is in power, looking for…making sure that those who are running our various democracies are doing what they said they're going to do, are living up to their mandate of doing the best in their power for the people that they govern" (Journalist)
>
> "It is, as the old line goes, the role of the media is to comfort the afflicted and to afflict the comfortable. That is not to say that the media must take always a negative or hostile role, but that the media is there as the watchdogs, to make sure the government reacts to the people, that government serves the people, and to help defend against official tyranny and official propaganda" (Researcher)
>
> "I have been thinking about it since the results of the 2015 Presidential election …in the States. So I increasingly think that the media have a really important role to play in preserving democracy by A, holding elected officials and others in power accountable, and B) disseminating information that informs citizens and can be used to make decisions about important policies in question" (Researcher)
>
> "We know that decision-makers keep a very keen eye on the discussions going on in the media. They're very, very sensitive to the conversations happening in the news media, so I see it as a very crucial, sort of, note in the democratic conversation" (Journalist)
>
> "Ideally, I think our public policy decisions would be based on the current available evidence. I mean, yes. So to the extent that that's going to happen, I think the media have a really important role to play in disseminating that information and helping people understand it" (Researcher)

WHAT KEY BARRIERS AND FACILITATORS FOR CO-PRODUCTION DO STAKEHOLDERS EXPERIENCE?

The capacity of researchers, journalists, and community members to engage in the co-production of KMb podcasts was subject to a variety of barriers and facilitators external to the *Cited* model. We note, however, that participants framed their discussion by drawing on both their *Cited* experience and other experiences with broader research communication. The

barriers and facilitators of co-production indicated below represent the most influential and perennial encountered by participants.

BARRIERS

Barriers were broadly grouped as cultural and structural, and each presented distinct and enduring challenges for co-production.

Summary of Co-Production Barriers
1. Research culture and structures that value scholarly publication over broader research communication and that can cause researchers to fear for their professional legitimacy.
2. Media culture and structures that uphold story criteria (e.g., balance, dramatization, novelty) at-odds with research quality criteria and that pressures journalists to produce stories within ever-shrinking timelines.
3. Public culture and structures for engaging with research and media that serve to solidify ideology and bias as well as make it more acceptable and common to dismiss contradictory or unpalatable evidence.

The different cultures occupied by researchers, journalists, and communities presented as the barriers of greatest consequence, with both the professional and ideological dimensions of culture (Carvalho, 2007) represented in participants' experiences. When describing the barriers encountered by researchers, participants regularly spoke of the enduring lack of academic credit given to researchers who pursue public engagement activities. For example, one researcher highlighted the negative influence of this barrier by describing how it can affect researchers and their partners differently depending on career stage:

> This lack of credit given to journalism and blogs and outside activities serves as a sort of general disincentive--not in my case because I don't care about the credit--but to people who are more junior or who are in a different situation than I'm in and whose tenure and promotion depend on such approval.

Although earlier research would suggest public engagement activities are growing to be an important component of researchers' scholarship (Hans Peter Peters et al., 2008), it appeared that researchers continue to feel limited in their ability to engage with and develop expertise in broader research communication. Moreover, participants described feeling largely unaided by their institutions in broader research communication, aligning with recent findings that few institutional supports are available to researchers to assist them in KMb efforts (Amanda Cooper, Rodway, & Read, 2018). Making matters more challenging, participants described how researchers can be hesitant to engage in co-production out of fear contributing to hype, appearing self-serving, or having their expertise called into question:

"I think nowadays, with the funding model, it's if you don't hype, you don't exist, to a certain extent" (Researcher)

> "I think we live in a really weird time where academics want publicity and maybe sometimes scientific rigour gets sacrificed in terms of wanting to come up with the next cool headline in the Huffington Post." (Researcher)
>
> "A researcher's might have their ethics called into question and have doubt thrown on their ability to conduct trustworthy research – it has been difficult for academia to move past the notion of their work as 'purely science'" (Researcher)

These fears paralleled some of the most commonly-identified themes in the literature of research-media interactions, particularly that media engagement can endanger researchers' professional legitimacy. In the past, researchers have unintentionally (and to their professional detriment) contributed to salacious research narratives (Wallington, Blake, Taylor-Clark, & Viswanath, 2010) as well as to "cycles of hype" (Bubela et al., 2009; Caulfield & Condit, 2012), whereby accuracy in the presentation of research has been secondary to its broad appeal. Worse yet, ensuing action or inaction in public service sectors has been resultingly misguided (e.g., single studies of dubious reliability used to support specific health fads). Provided these various factors, participants spoke about how it was unsurprising that many researchers decide to abstain from media engagement altogether.

Barriers for co-production were further discussed for the side of media. Journalists reported feeling constrained by overarching media values that shape what is considered relevant for general audiences: "if something is incredibly important but it's also really opaque and it's hard to get people excited about, it's not necessarily going to make it onto the news agenda." That is, there was awareness that media outlets tend to rely on common, easily-consumed frames in their stories (a contention supported by earlier research, e.g., Amend & Secko, 2012; Revers, 2009), and if research happens to misalign with these frames, it is unlikely to be covered. Furthermore, all groups reported concern for the changes brought about by the increasingly fast-paced 24-hour news cycle:

> "the reality is that newsroom jobs have just been slashed over the past couple of decades, there just simply isn't enough time to do that [more specialized reporting]" (Journalist)
>
> "we live in a sort of culture of news basically wanting to be like 'oh, this is something you never heard about' or 'you've been thinking about this all wrong,' so the news really likes stories like that or really sexy headlines." (Researcher)
>
> "there was this headline, this really, kind of, clickbait headline, but then when you drill down, it was actually... It was a positive story, but it... But the way it was framed in the article was with a negative story." (Community Member)

In many ways, these ongoing changes to the media have both fed into and been fed by changes in how the public engages with research and the media. Many participants felt troubled by an apparent shift within the public from acknowledging the value of evidence towards reliance on ideology and unsubstantiated opinions. One researcher contended that many potentially beneficial outcomes related to research evidence are blocked by cultural norms and expectations (e.g., heroin rehabilitation using the drug itself being viewed unfavourably),

meaning that discontent for research often has "nothing to do with science, efficacy, effectiveness, peer-review, academia, at all. . . . [so] the point of intervention must logically be cultural." How the public engages with the media has changed drastically since the advent of social media platforms, and relatedly, it was suggested that communities are finding it easier to become insular to the point of dismissing contradictory or unpalatable evidence.

Despite these various barriers, co-production among researchers, journalists, and community members is an objective worth pursuing, and participants had several ideas for how collaborations could be supported.

FACILITATORS

Although most participants were able to recall direct experience with barriers to co-production, few were able to talk in detail about facilitators, reflecting the observation that facilitators of research-media interactions remain underexplored in research and practice (MacGregor et al., in review). Even so, two major facilitators emerged as important for co-production, both indicating a need for organizational-level changes.

Summary of Co-Production Facilitators
1. Incentives for researchers that encourage co-production and normalize KMb.
2. Organizational changes that provide more time, space, and human capacity for co-production.

Discussions surrounding KMb, co-production, and impact have repeatedly drawn attention to how academic incentive structures can displace researchers' interest in broader research communication (Cherney, Head, Povey, Boreham, & Ferguson, 2015; Shaxson et al., 2012; Wilsdon et al., 2015). Indeed, for most researchers, including those in our sample, high scholarly output remains a primary factor in tenure and promotion (Corley, Kim, & Scheufele, 2011) and an expectation within general academic culture (Hans Peter Peters et al., 2008). Accordingly, participants believed that the quality and frequency of co-production could be improved if research institutions evolved to better recognize and reward co-production and to treat KMb as part of the academic endeavour. As one journalist contended, improving broader research communication will require that

"universities make this a priority. . . . either by hiring in-house writers that can speak to their scientists or by rewarding their scientists for their interactions with the media, just the way they do, for example, for committee work." (Journalist)

By research institutions making efforts to modernize academic incentives and to reward broader research communication, researchers felt it would be possible to move past the current sentiment that non-academic work (e.g., building a social media presence) is akin to a second job. However, as elucidated by Nutley, Walter, and Davies (2007), the use of incentives

to alter how researchers conduct research communication can run the risk of being seen as coercive and focused primarily on the instrumental impacts of research. As such, and as alluded to by the journalist quoted above, another important facilitator of co-production was changes to organizational supports for research communication.

Three different categories of support needs were described by participants: time, space, and human capacity. Regarding time, all participants felt that successful co-production entailed a substantial time investment, at least during the initial stages of interaction, that detracted from productivity in their other professional commitments. As one journalist plainly stated: "The resource that everybody needs these days is time" (Journalist). Few participants felt the time required for co-production was available within their own or their partners organizations, as illustrated in our community representative's experience in working with diverse partners:

> "Everyone's super busy. This kind of work, to be able to bridge that gap, it takes time. And, you know, there's this frenetic pace to crank out policy, and do it in your election cycle, and get your research done in your particular period of time, with your particular period of money. And this gap is going to take resources put towards filling that gap, meeting that gap." (Community Member)

Although it was thought to be doubtful that research institutions and media organization will begin to provide considerable amounts of time for co-production, participants believed progress could be made by maintaining that initial time investments can later lead to additional and higher-quality outputs.

The need for dedicated space for interaction was also a point of discussion for participants. Especially for co-production opportunities that have the potential to establish repeated interaction (e.g., between researchers and journalists with similar interest areas), space for in-person interaction can be instrumental for developing positive working relations (Coburn, Mata, & Choi, 2013). Currently, research institutions and media organizations were seen to provide little, if any, space for co-production work to occur. As such, participants felt that even minor improvements regarding the space made available for interaction would be beneficial to research communication: "access to high quality recording studios or quiet rooms on campus, quiet rooms where those kinds of interviews could take place, that would be super helpful" (Journalist). As earlier work has shown (e.g., Tseng, Easton, & Supplee, 2017), this kind of dedicated support for partnership infrastructure can be more important than the supports provided for single projects. In a related sense, there was a reported need for additional human capacity to support interactional work:

> "on my side I could just use more people on-hand to produce events, my attention is really scattered all over the place . . . more bodies around to produce events and to have more time to do that kind of networking and meet people, that's what would make a difference here" (Journalist)

For journalists and researchers alike, interaction entailed a wide range of tasks (e.g., organizing volunteers for research communication events) that detracted from the more pressing aspects of co-production (e.g., reading preparation). Respecting the ultimate goal of co-production (i.e., the involvement of diverse perspectives), participants felt a way to divest the time required for these tasks would be for organizations to involve or make available additional collaborators, who could play a supportive, albeit critical, role (e.g., graduate students).

However, participants advised that effective co-production was more complicated than simply creating the means for collaboration. As evidenced from their experiences with *Cited* and broader research communication more generally, a range of strategies can elevate co-production from a simple interaction to collaboration for impact.

WHAT STRATEGIES DID STAKEHOLDERS USE IN SUCCESSFUL PARTNERSHIPS?

Thriving in co-production entails purposeful and mutualistic action from each stakeholder (Heaton, Day, & Britten, 2016). We draw attention to eight major strategies used by stakeholders in either their *Cited* experience or other experiences in broader research communication to support effective co-production (see Table xx).

Eight Strategies for Effective Co-Production
1. Define and describe target audiences, paying consideration to how societal context will influence KMb efforts
2. Define co-production roles and goals at the outset
3. Engage in practices that build trust and ensure mutualism
4. Develop a cultural action plan
5. Make use of brokers who possess expertise in navigating the boundaries of research, policy, and practice
6. Identify and utilize institutional supports
7. Invest resources (time and, potentially, money) into interaction preparation and training
8. Make capacity building for each stakeholder a co-production goal

Perhaps the most outwardly obvious strategy—one that has received great attention in the research communication literature (e.g., Rickinson, 2017)—is clearly defining and describing the target audience of co-production outputs. It has long been established that simply increasing the quantity of research disseminated to practitioners and policymakers is an ineffective strategy for increasing the use of research (Knott & Wildavsky, 1980). As phrased by Morris, Percy-Smith, and Rickinson (2007), research communication is about "Getting the right information to the right people in the right format at the right time" (p. 8). Unsurprisingly,

journalists exhibited a deep understanding of this maxim, noting that communities need to be able to see how research fits within the context of their daily lives: "a really good example is money; if you can translate an academic study into how it's going to affect people's pockets and wallets, they're going to understand it faster." By aligning the communication form with the audience's experience (or lack thereof) with the subject and preferred ways of engaging with information, it was felt there would be a greater likelihood of not just engagement, but also impact.

A related strategy is to define the co-production roles to be played by each stakeholder and the goals for co-production. Effective multi-stakeholder collaborations for evidence-informed practice and policy are predicated on a clear understanding of how joint work leverages each stakeholders' expertise and how joint work is driven by co-production goals (Cooper et al., 2018). Participants described how being upfront about what each stakeholder expected from collaborators was fundamental to positive working relations, and thus effective co-production. Researchers described this strategy as a proactive measure to ensure that joint work maintains an acceptable level of rigour without introducing unanticipated burden later in co-production. Similarly, journalists viewed this strategy as a measure for ensuring researchers are aware and accepting of how communications will be storied and framed, as well as a method for cultivating future collaborations.

Third is to engage in co-production practices that build trust and ensure mutualism. Earlier work has shown that collaborations must be mutually beneficial to all of those involved in order to be successful (e.g., Coburn, Penuel, et al., 2013; Tseng et al., 2017). Participants of *Cited* were astutely aware of this point, expressing that interactions need to begin from a genuine understanding of each partner's goals and need to grow out of respect for each partner's knowledge and expertise (as well as their constraints and limitations). Additionally, participants described how it was essential to express appreciation for the new outputs made possible through co-production:

> "If an academic has genuine and deep relationships and friendships in community and with journalists, they're going to have a much better time in figuring out how to collaborate and figuring out how to bring their research into the commons" (Journalist)
>
> "It's almost for us I think in a way we should be very privileged... I always say, 'you know, thank you so much for doing this because it's really helping us a lot as well as the people we study,' so trying not to be too forceful or I guess just trying to be very grateful for the opportunity, at least in my mind, is good." (Researcher)

Fourth is to develop a cultural action plan that can guide the movement of research into policy and practice. Attention to cultural context has been recognized as a key element for any sound

KMb plan (Christensen, 2012), and *Cited* participants felt this element was becoming increasingly important within current polarized political climates. When research evidence challenges prevailing values or ways of knowing, researchers and journalists agreed that additional efforts are needed to ensure the evidence is viewed as credible by the public. As one researcher described, "you need to make a shopping list of what the cultural barriers are to a particular set of issues that you want to address" (Researcher). Providing an alternative perspective on this strategy, our community representative observed that research is too often presented to communities at the end-stages of a project rather than undertaken in service of communities:

> "the complaint that we often hear is that, when community engagement is happening . . . [others] have identified *this* is what the issue is . . . therefore going to the community for their feedback on that particular issue or set of issues. When I think that there's real power . . . is actually having communities themselves setting the agenda of what those conversations need to be" (Community member)

Following from these perspectives, a cultural action plan necessitates that those thinking about co-production are aware of (a) cultural barriers to research evidence; and (b) the diverse, critical community perspectives on the societal issues attempting to be addressed.

Fifth is to make use of brokers—intermediary actors who possess expertise in navigating the boundaries of research, policy, and practice. Scholars concerned with multi-stakeholder collaborations have frequently alluded to the important roles that these boundary spanners can play (Williams, 2002); for instance, Rice, Henderson-Sellers, and Walkerden (2015) argued that interface journalists—journalists with deep scientific knowledge and understanding—could play an invaluable mediating role between researchers and the media to better inform the public about climate change. Among *Cited* participants there was explicit and sincere appreciation for the mediating role played by the CPT when brokering interactions. Journalists, for example, praised the ability of the CPT to advocate for a non-expert audience by asking questions and rendering content in a way that enabled the general public's understanding. Furthermore, our community representative likened the connection-enabling ability of *Cited* to a "network of networks approach" (Community member), in which a wider and more diverse set of connections among potential collaborators is made possible by use of the broker's (i.e., *Cited's*) network. Indeed, relying on a broker's network can mean that limited resources are freed-up to be utilized for other important KMb functions (Cooper, 2013).

Sixth is to identify and utilize institutional supports. Although the availability of institutional supports differs vastly among researchers and journalists, participants were adamant that successful co-production is at least partly tied to how the infrastructure of research institutions and media organizations is utilized to support joint work. One researcher, for example, noted how a large quantity of research within his predominately French institution fails to reach

English audiences because institutional supports go under-utilized. As a strategy to support effective co-production, researchers and journalists felt that supports for joint work from research institutions generally need to be better implemented and better utilized. Conversely, whether and how media organizations—which are typically profit-driven and politically aligned enterprises (Rice et al., 2015)—could support joint work was felt to be a more vexing challenge.

Seventh is to invest resources (time and, potentially, money) into interaction preparation and training. In alignment with previous research (Leask, Hooker, & King, 2010), participants felt strongly that interaction preparation for each stakeholder was an essential precursor to effective co-production. Journalists identified this strategy as a core aspect of quality science journalism, noting how the effectiveness of their past interactions was grounded in developing a basic understanding of the research topic:

> "I think what seems to be most effective on my part is doing my own homework. So not expecting the researcher to lead me through, holding my hand through their research. But rather, having a good background in terms of their research—already picking out what I think is most exciting about the research" (Journalist)

On the other hand, training for interactions was believed to be a strategy that deserved greater attention, particularly as a strategy for research institutions interested in building researchers' capacity for broader communication. While some scholars have posited that interaction itself may be sufficient training (Chapman et al., 2014; Poliakoff & Webb, 2007), researchers in our sample, reflecting on past experiences, felt differently: "we're not trained to think about and how do you boil [research] down into paragraphs in a way that is accessible and interesting to the public. . . . So I think that kind of training can be really helpful." (Researcher). As such, it appeared that interaction training remains an important strategy for co-production, as not all researchers and journalists can be assumed to be comfortable or familiar with joint work.

Eight is to build on past interactions and develop a long-term view of collaborations. If preparing and training for interactions supports effective co-production, building off prior interactions enables co-production to occur with greater regularity. Participants described how many of their positive experiences developed simply out of:

> "keeping communication open at all times. . . . once you've connected . . . and everybody seems to understand that you have a common interest in the subject, it becomes more about just keeping those lines of communication open" (Journalist)

Building on past interactions was especially pertinent to the needs of journalists who, operating under tight media timelines, benefit from "less time spent bringing [researchers] up to speed

on how to reach our target audience" (Journalist). Furthermore, as all participants pointed out, relying on previously-developed connections and developing a more long-term view of co-production inherently makes sense, as stakeholders will pursue joint work with partners with whom they have already established positive working relations.

When these eight strategies are combined—along with other strategies that develop naturally out of joint work—participants felt the likelihood of positive co-production outcomes, both immediate and protracted, was improved. To demonstrate this perspective, we next highlight some of the impacts participants realized from their experiences with *Cited*.

WHAT TYPES OF IMPACTS DID *CITED* HAVE?

The findings presented in this section captured the perceived impacts of co-production for participants involved in *Cited*. We asked participants specifically about the *Cited* model as a form of research communication as well as how the model and co-production processes might be improved. We also asked participants about the broader benefits for these partnerships and KMb podcasts (e.g., scholarly, societal, and capacity-building outcomes).

OPERATIONAL IMPACTS

The impacts of *Cited* that stood out most clearly to our participants related to the operational aspects of co-production, including both the representation of multiple voices and the improved ability to tell compelling stories. Research communication has rarely been the realm of non-scientists, with journalists often viewed as little more than a conduit for research (Amend & Secko, 2012) and communities seen as uninformed and uninterested in research (Besley & Nisbet, 2011; Besley, Oh, & Nisbet, 2012). In contrast, journalists and community members alike praised the structure of *Cited* outputs for not privileging researchers' expertise:

"researchers' voices were treated like any other voice in the documentary, in the sense of this person is a character in the story. . . . they're treated equally as any of the other characters" (Journalist)

"[*Cited*], you know, produced something that was different and unique. . . . It built an ecosystem, because we developed partnerships. Communities' voices were heard, and from their own perspectives, not through a lens of someone else" (Community member)

The importance of these viewpoints cannot be understated; for research to have impacts on society (i.e., practice and policy, society and culture, and the economy), it needs to be integrated into the daily lives of the public (Federation for the Humanities and Social Sciences, 2017). By creating research outputs that made space for non-academic perspectives, participants felt *Cited* was more likely to have uptake with its audience (i.e., to be considered

and contrasted with prior knowledge; Phipps et al., 2016), as the audience could see themselves represented in the podcast. Furthermore, depending on the issue covered, the ability to privilege non-academic perspectives was seen as a virtue (e.g., in the lived experiences of indigenous community members): "we didn't have the researcher, the academic sort of held on some kind of pedestal or have their perspective privileged in a way, whether by the order in which they spoke or whether by the amount of time they were given" (Journalist). Not only was this structuring thought to be important for attracting more listeners, participants felt it was necessary to tactfully discuss the intricacies of some issues (e.g., the Sixties Scoop).

As a storytelling mechanism, participants similarly viewed the *Cited* format as a welcomed departure from the usual ways of communicating research: peer-reviewed publication in academic journals, institutional press releases, or media narratives that paint stereotypical pictures of research and researchers (Nielsen & Autzen, 2011). Following from what our community representative termed "a virtuous circle of communication" (Community member), there was a general feeling that *Cited* helped to expand co-production partners' views of research communication. Researchers, for example, came to more fully appreciate how broader research communication was a critical extension of their academic work; as one researcher described his experience, "I think that this bringing together of storytelling, and academic ideas, and pictures, and interviews, is a powerful combination" (Researcher). Such a viewpoint stood in opposition to the more commonly reported concerns of researchers (e.g., their research failing to be framed in the broader context of their field; Amend & Secko, 2012; Revers, 2009). Instead, all researchers in our sample were pleased with the framing of their work.

Discussion centered around how "the research element added an extra quality or credibility and an edge to these documentaries, which simple storytelling does not have," as well as how that edge was honed by journalists' narrative expertise and community members' knowledge about what matters to the public. Thinking about the communication of research evidence, then, *Cited* appeared to positively impact both its reach and perceived usefulness (Sullivan, Strachan, & Timmons, 2007). Additionally, not only were research stories produced with greater fidelity for the topics covered and improved representation of diverse voices, participants felt that *Cited* improved how audiences engaged with research content.

ENGAGEMENT IMPACTS

Another impact of *Cited* that stood out to participants was its ability to connect non-academic audiences to research evidence that would otherwise be confined to academic channels. *Cited* enabled communities to become holders of "specialist knowledge" (Peters, 2013), which they could use to inform and influence salient issues in the public sphere. There was a collective

belief—one supported by an extensive literature base (e.g., Rickinson, 2017)—that more traditional methods of research communication would have failed to realize the reach and uptake achieved by *Cited*'s content. As our community representative reflected:

> "Folks that I had talked to that have come to the event and even listened to the podcast afterwards were... They learned something. They felt heard. They felt themselves represented in the event. It raised a bunch of awareness. It shared some really important research" (Community member)

Similarly, for the researchers in our sample, the increased engagement with their work was often unlike anything they had experienced using more traditional communication mechanisms. One researcher, for example, recounted how his participation lead to direct exchanges with the family who were the focal point of a podcast:

> "It was really fantastic to get feedback from the [blinded] family, they were really effusive. They loved the piece and wanted us to know that they were happy to have it on record–best coverage that family had experienced." (Researcher)

The engagement impact of *Cited* was therefore twofold: not only did it increase the reach and uptake of research evidence, it increased the likelihood that researchers, journalists, and communities would come together to form new relationships. While not all participants experienced the development of new relationships—for some, *Cited*'s engagement function was primarily the widening of audiences for research evidence—the KMb podcasts were nonetheless seen as a promising venture into new ways of conceptualizing research communication to be engaging and relevant for a general audience. In fact, this ability of *Cited* to create thorough and researched stories that were simultaneously engaging and relevant for general audiences was best characterized by one of our researchers: "*This* is public academia" (Researcher; italics to indicate emphasis during interview).

WHAT ARE SOME CHANGES THAT COULD IMPROVE *CITED*?

The work of *Cited* to create compelling, research-informed narratives about salient societal issues that are disseminated as KMb podcasts remains unique in the research communication space. While some other groups have experimented with how podcasts can expand how we think about ongoing efforts to address research-practice-policy gaps (e.g., the Research-Practice Partnerships Forum), *Cited* is the only model to feature such an expansive range of research topics; to bring together researchers, journalists, and community members to reflect the multiplicity of views on any given topic; and to directly explore a new mechanism for communicating research. Given its novelty, participants had several ideas for how the *Cited*

model could be improved. We outline the two most prominent suggestions and provide a list of minor suggestions.

COMMUNITY MEMBERS BECOMING INVOLVED MORE INVOLVED IN CO-PRODUCTION

A recognition in the research communication literature is that we are inevitably moving towards a "knowledge society" (Peters et al., 2008), wherein "Public deliberation over critical issues can function to clarify contested values, increase public understanding, foster people's willingness to reconsider their own views, and increase communication between opposing sides on a given issue" (Moses, 2007, p. 162). However, despite this development, many researchers (and some journalists) continue to see the public as uninformed and uninterested in research (Besley & Nisbet, 2011; Besley et al., 2012). Participants felt *Cited* had made substantial progress in contesting traditional viewpoints of this nature, but also felt that untapped potential existed in the model. For example, an issue noted by several researchers and journalists was that the involvement of community members was not something they were given much information about: "it's not super clear to me how communities or external listeners are brought into the process" (Journalist). Although this issue is rather minor in the broader work of *Cited*, it may signify that, to some extent, researchers and journalists continue to possess different authority in co-production than community members. Conversely, this issue may signify that interactions between community members and researchers or journalists could be intensified—what one journalist termed "a collaborative intersection" (Journalist). Further inroads with communities would serve the dual function of galvanizing support for the podcast as well as potentially improving how well the podcast represents and speaks to issues in the public sphere: "the more opportunities to have that work have exposure . . . ups the benefits massively and ups the value of what you're producing" (Community member). The public wants to see how media content speaks to their lives, and the obvious way to do that is to more fully include communities with lived experience in the topics covered.

IN-DEPTH CASE STUDIES TO PROVIDE RICHER DESCRIPTION OF IMPACTS

Extending the suggestion above, it would be beneficial for *Cited* to build in-depth case studies of the impacts achieved by each KMb podcast project. For the researchers, journalists, and community members involved in the co-production processes, *Cited* offered an avenue to expand the impacts of their work, and it did so despite the various barriers discussed above (e.g., the limited incentives that exist for co-production). However, many of the participants were unaware of any impacts achieved by the KMb podcasts to which they contributed; one researcher, for example, responded to a question about impacts of their podcast with: "You should ask them. . . . I don't have good data on that" – (Researcher). For researchers in particular, it is becoming increasingly important to be able to demonstrate the impacts of their research with both academic and non-academic audiences (Holmes, Scarrow, & Schellenberg,

2012; Phipps & Morton, 2013; Tetroe et al., 2008). An unintended consequence of the impact agenda has been a narrowing of research focus to better align with topics perceived as likely to produce measurable impacts (Box, 2010). We might expect, then, that researchers' inability to identify the impact of their work with *Cited* might lead to that work being pursued less frequently. Media organizations—most of which are profit-driven enterprises (Rice et al., 2015)—similarly need to see the value of working with groups like *Cited*. As one journalist described, the data captured could be as simple as "what are the ways in which the podcast is being distributed and marketed, and what [does] the outreach look like?" (Journalist). Building in-depth case studies of impact has the potential to both foster further financial support for the podcast (e.g., from research funding agencies) as well as attract potential partners who would otherwise be hesitant due to uncertain cost-benefit analyses.

OTHER STRATEGIES FOR IMPROVING THE *CITED* MODEL

Below we provide a list of additional strategies that participants had for how to improve the *Cited* model. Although these strategies were less resoundingly endorsed, participants were confident that, if thoughtfully implemented, these strategies could produce positive benefits for both *Cited* and those involved in *Cited*'s co-production processes.

- Framing batches of episodes that address several topics associated with a common theme. Our community representative proposed this idea by detailing an issue they saw with the current *Cited* model: "what happens is there are these drops of information, and then the topic is never looked at again. And I wonder if there's strength in following a theme for a really long period of time and, kind of, coming at it from a bunch of different perspectives." (Community member). Other participants hinted at this suggestion by mentioning that it would be interesting to use multiple episodes to examine the intersectionality of different societal issues.
- Include researchers, journalists, and community members who hold different, potentially conflicting, viewpoints on a topic. Following from the current polarized political climate, participants felt it was important for general audiences to be exposed to the consensus-building process and to break down echo chamber that rarely questions taken-for-granted perspectives. However, there was acknowledgement this strategy would complicate the work of the CPT.
- Engage in efforts to promote the *Cited* brand within research communities. Several researchers described that their participation in *Cited* developed by chance out of, for example, speaking in-person with members of the CPT. As two researchers independently recommended: "maybe do some seminars or something that might get you a bit more in the research community, might get your name out there"

(Researcher), and "some sort of better way to connect people, it was sort of dumb luck in the way that I had met him [Gordon]" (Researcher).

- Drafting formal agreements for each podcast to ensure that each co-production partner knows what to expect from the podcast as well as what to expect from other partners. Some participants expressed that, while they were ultimately satisfied with *Cited*'s work, they were never fully briefed on how the co-production processes supported the attainment of both shared and individual goals.
- Expand on the supplementary materials provided with each podcast.

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