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New Technology in Conflict Prevention: Francesco Mancini and Marie O'Reilly[10]

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Introduction

The cases presented in this report have addressed conflict prevention from diverse perspectives, Covering different regions of the world (Africa, Asia, Latin America), different types of violence (criminal violence, election-related violence**,** armed conflict, violent riots), different political contexts (restrictive and collaborative governments), and different technological tools and methodologies, (big data, cell phones, crowdsourcing, crisis mapping, blogging, social media). The authors sought to cover as many contexts as possible with a limited number of case studies, with a view to examining the use of innovative technology in different settings of violence and conflict.

This approach may be particularly useful for informing policy in light of the dramatic changes underway in the landscapes of violence. At a global level, the contexts in which armed conflict and collective violence take place are changing dramatically. The number of interstate and civil wars has declined significantly worldwide, and these conflicts produce fewer battle-related deaths.

On the contrary, violence linked to local disputes, organized crime, and political repression is far more pronounced[11]. The cases demonstrate clearly that employing new technologies for conflict prevention can produce very different results depending on the context in which they are applied, and whether or not those using the technology take that context into account. Learning from the Cases Before identifying cross-cutting recommendations for the more effective use of new information and communication technologies (ICTs) in conflict prevention, it is worth highlighting the lessons from each case.

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[11]See, for example, World Bank, World Development Report 2011: Conflict, Security, and Development (Washington, DC, 2011).

Big data could serve descriptive, predictive, and diagnostic functions for conflict prevention. Big data can be used to identify patterns and signatures associated with conflict and those associated with peace - presenting huge opportunities for better-informed efforts to prevent violence and conflict. Indeed, law-enforcement agencies are already searching for patterns in data from 911 calls, close-circuit cameras, and crime reports in an attempt to stop crime before it happens. And academics and civil society actors are predicting social unrest and riots by tracking food prices and correlating their patterns with previous events. Nonetheless, there are significant hurdles to overcome before big data can begin to systematically and reliably inform conflict prevention. Privacy, access, and use remain key concerns for all actors looking to leverage big data for different ends[12]. But in conflict settings - where individuals face higher risks to their personal security - getting the balance right in terms of who has access to what data for what purpose is critical. Conflict settings also produce unique analytical challenges for big data. For example, if unequal access to technology in a society mirrors the conflict cleavages, problems with the representativeness of the data take on a whole new dimension, which could serve to exacerbate the situation. In the context of criminal violence and citizen insecurity in Latin America - a region with significant Internet and mobile technology use - government agencies and police forces are successfully using digital platforms to help reduce homicidal violence through improved surveillance and intelligence. In Brazil, for example, the online Infocrim system that collects crime data in a central database and generates real-time maps is credited with helping to reduce homicide rates from 12,800 in 1999 to 7,200 in 2005. The use of innovative technologies for violence prevention among civil society actors is also widespread, largely in the form of horizontal citizen-to-citizen interventions. In light of self-censored reporting on violence in the mainstream press in Colombia and Mexico, for example, citizen-reporting systems and popular blogs now publish information on the drug wars that is not available elsewhere. Some also advocate pro-peace messages and sustain networks among activists.

1. New Technology for the Prevention of Violence and Conflict

The diversity and changing nature of the conflict settings explored in this report strongly suggest that those seeking to prevent conflict and save lives need to adapt their strategies to the context at hand. For example, the types of technology that link civil, governmental, and regional early-warning efforts in a relatively stable setting - as in Kenya - Kyrgyzstan

[12] Alistair Croll, "Big Data is Our Generations Civil Rights Issue, and We Don't Know It," in Big Data Now: 2012 Edition (Sebastopol, CA: O'Reilly Media, 2012), pp. 59-63.

and may have limited impact in an environment where governments act precisely to restrict such information flows. Similarly, the tools and approaches used in a context of entrenched criminal violence, in which anonymity seems critical for incentivizing citizen use of ICT for violence prevention, are unlikely to have the same effect in a situation of election related violence, in which the vetting of the information is essential to avoid politicization and also reporting. For policy purposes, when applying new technologies to violence- and conflict-prevention efforts, it may therefore be more helpful to think in terms of the conflict context rather than frameworks suggesting that responses are "generational"[13]. Such ambitious theories may lead policymakers astray rather than inform them about how to operate in different socioeconomic, demo -graphic, and political contexts. In reality, actors in conflict contexts rarely move linearly from one generation of tools to another. "Older" proprietary technology is often used in conjunction with "new" open-source technologies. Top-down tools cohabit with bottom-up approaches.

Ultimately, the context should inform what kind of technology is needed and what kind of approach will work best. That said, the lessons emerging from these cases, the insights of the experts involved in the project, and the analyses of the authors suggest a number of steps that those using innovative information and communication technologies can take to strengthen their voice and action in order to more effectively prevent violence and conflict. Together they can be taken as a how-to guide for international organizations, governments, and civil society actors embarking on prevention initiatives that seek to leverage new technologies.

2. Not every problem is nail

Assuming there is a technical fix for what is an inherently political problem is a dangerous path, no matter what technology is at hand. New technologies have the potential to make huge contributions to violence- and conflict-prevention efforts, but they are no panacea for holistic solutions. In particular, when trying to integrate operational prevention (targeting a crisis at hand) and structural prevention (addressing root causes of conflict), new technologies should be accompanied by more traditional tools, such as preventive diplomacy, governance reforms, and economic initiatives.

They may complement these other elements of prevention - for example, by increasing citizen participation in governance reforms - but should not replace them. In other words,

[13]For an explanation of the "generational" approach to technology in early warning and response, see the chapter on big data above. See also Patrick Meier, "Fourth-Generation Early Warning Systems," Conflict Early Warning and Response, available at http://earlywarning.wordpress.com/2009/03/06/fourth-generation-early-warning-systems/.

new technologies make up one more tool in the toolbox of preventive action. As such, international organizations and governments should examine all the tools at their disposal when designing prevention initiatives, not just technological tools. Civil society organizations should also not be blinkered by their particular thematic focus or pet projects. Sometimes applying new technologies simply may not work. All actors should think politically as well as technically.

3. Consider the context

Before embarking on any prevention initiative that seeks to apply innovative technologies, actors should step back and assess whether their investment will generate the desired results. First, the socioeconomic setting—from technology penetration and use to literacy levels—should be thoroughly examined to see whether technology can have a positive impact and to select the technology that will be appropriate. Users in one community may be well equipped to adopt a new technology and integrate it into their existing initiatives, while others may not have the means, knowhow, or inclination to do so. Keep in mind that not every culture or group will have the same enthusiasm for embracing new technologies. Demographics, rural versus urban contexts, gender considerations, and generational factors will also play an important role. In addition, sometimes "old" technologies (or no technology) may be more appropriate and effective. In fact, many local-level projects appeared to work best when they combined old and new technologies - for example, by augmenting existing analogue early-warning systems with digital components - and accompanied them with training and capacity building. With this in mind, international organizations and governments should make needs assessments and feasibility studies standard practice to prevent the supply of technology from outstripping the demand[14].

4. Do not harm

Failure to consider the possible knock-on effects of applying a specific technology can lead to fatal outcomes in violent settings. Spoilers—whether in criminal gangs, rebel groups, or government agencies—can also leverage new technologies and the information they provide to incite violence, promote conflict, and perpetrate crimes. Governments can use information and communication technologies to prevent information from getting to one group in society and identify members of a dissenting group. Criminals and drug lords can use personal information obtained from websites to eliminate individuals that present a

[14] For more on assessment tools for donors and international organizations, and the necessity of integrating a culture of analysis and contextualization, see Jenna Slotin, Vanessa Wyeth, and Paul Romita, "Power, Politics, and Change: How International Actors Assess Local Context," New York, International Peace Institute, June 2010.

threat to their activities. As such, human input, political awareness, and a conflict-sensitive approach remain vital from the conception of an initiative until long after its completion. Identifying the possible spoilers, conducting a cost-benefit analysis that incorporates levels of risk, developing mechanisms to mitigate risks, and creating contingency plans should ben fundamental components of project design and implementation. Every actor seeking to apply new technologies to prevention initiatives should apply conflict-sensitive approaches and be aware of possible negative and knock-on effects emerging from their use of specific technologies.

5. Use technology to help information flow horizontally more than vertically

Perhaps the most significant innovation created by advances in technology is the empowerment of individuals to participate in conflict-prevention initiatives in their own communities and societies.

Governments and international actors have been collecting data and using technological tools to inform and implement policy and action for a long time. But since these tended to be large-scale, complex, and expensive endeavour's, they remained the reserve of those in power. In addition, political decision-making processes remain largely disconnected from early warning and conflict-prevention mechanisms at the international level. Now, citizens can use digital technologies to more easily inform themselves and others, and to incentivize positive change in their communities and societies. This information, spread horizontally, can be used to put pressure on local decision makers much more effectively than it can at the international level.

In other words, it seems that new technologies have greater potential neither in "top-down" nor "bottom-up" mechanisms, but for "bottom-bottom" approaches. For the prevention of violent crime, the example of Latin America showed how horizontal citizen-to-citizen ICT initiatives are the most dynamic and promising. Ultimately, facilitating the horizontal spread of ICT use for conflict prevention can help to connect more "warners" and "responders" more quickly, and contribute to communities' resilience in the long term.

6. Foster partnerships for better results

Partnerships will be essential for the effective application of new technologies for preventive ends. There are indications those prevention initiatives that drew on the complementary strengths of International donors, governments, the private sector, and civil society proved more effective.

Indeed, in some contexts donors may need to sacrifice visibility for the sake of effectiveness. This is particularly true when the use of new technologies to gather data in a

politically charged context is as external meddling or even spying, which can de-legitimize and undermine the endeavour, if not kill the initiative completely.

The need for partnership in the realm of big data is particularly acute given the array of actors involved in extracting actionable information from the data deluge—private companies that hold the data, academics and technical experts who can analyze it, civil society actors who can put it in context, and governments and international bodies that can regulate its use and incentivize cooperation. International organizations and governments are well placed to foster such partnerships and should invest in doing so for more promising results.

At this early stage in the consideration of new technology s role in preventing violence andconflict, it is only possible to sketch out very tentative conclusions. The application of new technologies to conflict-prevention efforts has yet to show robust results.

Most of the analysis points to the potential rather than the current reality, although there have been some significant, positive indicators at the local level in particular. Continued, extensive research and systematic evaluation are needed for a deeper understanding of the realities as well as the possibilities, also further research into technology impact on response could be the most helpful for the field of prevention as a whole.

This could include assessing how ICT can be used to generate incentives for action, which seems to be more promising at localized level, and to link decision making processes with early-warning and conflict prevention mechanisms. And given the huge pools of information that now need to be analysed for actionable information, governments and international actors also need to invest heavily in analytical capabilities at local, national, and international levels. There is a real risk that applying new tools to a system that already struggles to meet its goals may not get much further than a Band-Aid effect. But the increased horizontal spread of new technologies across societies has the potential to revolutionize these traditional systems by making more information available to more people. This not only makes it harder not to do something when violence or conflict appears imminent, it also makes response more likely because it empowers local actors - who are closer to the crisis - and creates incentives to take action. Given the frequent paralysis at national and international levels when it comes to taking action to prevent conflict, this “bottom-bottom” approach may be even more important in the short term than the “bottom-up” tactic of raising voices to national and international levels. In the long run, however, the most effective approach to using new technologies for conflict prevention may well be the approach needed in prevention more broadly: one that successfully

balances both grassroots, decentralized efforts and the more rationalized and coordinated activities of governments and international organizations.

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