RESEARCH ARTICLE

A Digital Advance for Housing, Land and Property Restitution in War-Affected States: Leveraging Smart Migration

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The large-scale restitution of housing, land and property (HLP) for those dislocated due to armed conflict has significant repercussions for the prospect of return, recovery and durable peace. Failure to adequately engage in restitution and other remedies for displaced populations has demonstrated that the grievances generated usually do not abate, but instead grow, including over generations, to produce subsequent problems, including armed conflict. While advances in transitional justice have supported the development of mass claims processes for HLP in war-affected countries, the current magnitude and complexity of forced dislocation is beyond the ability of conventional techniques to manage in an effective and timely way. This article argues that the current approach for handling massive numbers of HLP claims in postwar scenarios needs a critical upgrade; and describes what such an upgrade could comprise with a set of advanced techniques. These techniques focus on the issues of time, the size and complexity of the problem, new spatial technologies, and the now much greater agency possessed by displaced populations made possible by mobile digital technologies.

Introduction

As the number of forcibly dislocated people across the globe climbs to proportions not seen since the Second World War, the enormity and complicated nature of return processes pose serious dilemmas for the recovery of livelihoods, economies and the establishment of durable peace. While the countries and communities that host large dislocated populations are understandably concerned about the long-term presence of refugees and internally displaced persons (IDPs), most of the displaced desire to return home (e.g., Janmyr 2015; Unruh 2016a; Unlan 2016). Among the most problematic aspects of any return process is the reclaiming, reoccupation and reconstruction of housing, land and property (HLP) for the hundreds of thousands to millions that will attempt this in today's dislocation scenarios. Equally difficult for those unable or unwilling to return to areas of origin, are the forms of redress for their HLP loss – due to destruction, secondary occupation, ethnic cleansing, etc. – that could put to rest the acute grievances that unresolved HLP dispossession produces. Such grievances often become aggravated over generations,

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potentially laying the groundwork for future instability (e.g., Fischbach 2006; Moyo and Yeros 2005; Fay 2009: 38). Thus, the overall purpose of HLP mass claims processes, as described by the International Bureau of the Permanent Court of Arbitration, *are to provide real justice to the victims of the events which gave rise to the claims, and to allay the disruptive discontent within a nation or society that unresolved wrongs perpetuate'* (IBPCA 2006: 152).

The prospect of realizing effective return or other remedies plays a large role in the desire and ability to return to areas of origin. And while international and state-level efforts at large-scale HLP restitution in transitional justice contexts have progressed significantly in recent decades and demonstrated some success (e.g., Holtzmann and Kristjansdottir 2007: vi; Van Houtte 1999; IBPCA 2006: v), this article argues that the operational techniques involved in HLP restitution processes for the very large populations of forcibly displaced in today's world, are in critical need of a significant upgrade. This upgrade is important in order to effectively engage, 1) the enormity of the current problem, 2) the contemporary complexity of return to HLP, 3) the speed now required for HLP restitution[1] to be effective in heading off destabilizing alternatives, 4) the significant advances in socio-spatial technologies, 5) the innovations in new forms of remedies, 6) the substantial cost of operating restitution programs, and importantly 7) the now much enhanced abilities of displaced populations with regard to their own use of mobile digital technologies and social media, and the significantly greater agency this provides.

This article examines what such an upgrade could look like. Leaving the rationalization, purpose and conceptual framework of mass claims processes as a transitional justice intervention to other works (e.g., Holtzmann and Kristjansdottir 2007: 97; Das and van Houtte 2008: 23–34; Das 2006; Leckie 2009), the paper begins with a review of the nature of the problem for post-war HLP return, and a description of contemporary

large-scale HLP restitution programs as a component of transitional justice. The article then presents a set of upgraded techniques in HLP restitution processing that are currently being developed by the authors. We argue that the upgrade in techniques described here are more able to manage the current numbers of dislocated people, the geographical extent of displacement and return, the speed and cost needed for effective restitution, and complications inherent to contemporary restitution processes. Additionally, the new tools could provide insight into broad-scale patterns around mass claims and return. These insights could then be further leveraged to generate more effective and precise interventions to facilitate large-scale return.

Forced Dislocation and the Prospect of Return

The forced dislocation of populations has profound impact on economies, livelihoods, food supply and political stability. Often the reasons for forced dislocation in the context of armed conflict are embedded in: the initial reasons for the fighting, the use of forced dislocation as a tool in a war, the repercussions of combat, or a desire on the part of certain actors to change demographics or take advantage of fluid socio-political situations for personal, sectarian, tribal or ethnic reasons (Chulov and Mahmoud 2013; MEM 2015; HIC-HLRN 2015). These all result in either destruction or transaction, and then occupation of abandoned HLP by others (secondary occupants) – making reoccupation by the original inhabitants complicated and adversarial.

Often dislocations are large-scale and long-lasting, with years and even generations intervening between dislocation events and the prospect of returning to areas of origin (e.g., Roodt 2003; Du Plessis 2003; Fischbach 2006). In the meantime, land and property can be transacted numerous times, become 'legally' possessed by others, used in patronage systems, or held by politically powerful individuals or opposed sectarian,

ethnic, or religious groups (e.g., Roodt 2003; Rempel 2003; Huggins 2009). Many land holdings will have been built up and contain office buildings, residences and factories that were not present at the time of dislocation; or will have been transformed from small-scale agricultural areas to agribusinesses complete with infrastructure investment (Du Plessis 2003; Roodt 2003). Other HLP will have been degraded, destroyed or made otherwise unusable (Flint and de Waal 2005; Day 2012). Some will have changed to alternative forms of ownership that are not compatible with statutory law (World Bank 2009; Bartra and Otero 2005). In other cases, the ethnic, sectarian, religious or tribal composition of the area will have changed, preventing return by the original occupants (Dahlman 2005; Roodt 2003; Rempel 2003; Huggins 2009). Meanwhile grievances held by the population over their dispossession usually do not subside, but instead grow and coalesce, often into political or insurgent movements (Bradley 2015). At the same time, the fluidity of conflict can become an opportunity to reclaim HLP by force that was expropriated in previous decades. For example, the Arab Spring has released a surge of HLP claims in all affected countries, as populations seek to reclaim and reoccupy lands and properties taken from them over decades of patronage-based autocratic and sectarian rule (Schechla 2012). The result is that these two sources of dislocation (due to previous expropriation, and due to a current war), together with the transaction of expropriated lands over time, means that claims are often about the same lands. This is particularly the case given that expropriation and abandonment due to war produces subsequent occupation by others, often followed by a series of good faith transactions. The number of contested HLP claims that proliferate after a conflict then becomes so large and fraught with enmity as to have significant destabilization potential (Ampuero and Btittain 2005; Fay and James 2009; Unruh 2008: 94). Dislocated populations residing in camps or safe areas in and outside the country are acutely aware

of these difficulties. If the prospect for HLP restitution or other remedies is believed to be low, then this will act as a strong deterrent to returning to areas of origin, and extend the burden on the communities and countries that host them. For this reason, large-scale restitution (or mass claims) programs after conflicts are increasingly seen as critical components of peace processes to provide the needed stability and recovery (e.g., FAO 2007; Holtzmann and Kristjansdottir 2007: 1; Van Houtte 1999; van den Hout 2006: xxvii; Leckie 2009).

But the difficulties involved in restitution can be formidable. In Syria not only is the statutory land rights system being used as a weapon in the conflict (MEM 2015; Unruh 2016a: 1), but efforts are underway to, 1) rework the demographic patterns of the country through HLP institutions (Salameh 2015; Chulov and Mahmood 2013), 2) purposefully make returning to HLP difficult (Abdallah 2011), 3) take over and transact abandoned HLP for monetary gain (MEM 2015), and 4) pursue opportunities involved in future reconstruction which necessitates a change in HLP rights (Chakrani 2013). Control over HLP has played a central role in the Syrian conflict – including the initial uprising (Loveluck and Habib 2017) – producing acute complications for the prospect of return for the over 11 million dislocated people (OCHA 2016). The HLP restitution effort needed for this population is thought to be large-scale, costly and require a significant timeframe (NRC 2016; Unruh 2016a).

In Yemen, land-related conflicts, grievances and confusion are a primary component of the ongoing instability (e.g., Zimmerman 2015; Hales 2010; Al-Fadhli 2012). Following Yemen's Arab Spring unrest in 2011, the Gulf Cooperation Council's transition program focused a great deal of attention on restitution of the large amount of land and property confiscated in the southern part of the country by northerners following the 1994 war between the north and the south, to the degree that this was fundamental to

national reconciliation (Hadi 2013). The land commission that was created to carry out the restitution program faced broad challenges regarding lack of evidence, literacy and communication on the part of claimants who came from a variety of legal backgrounds. At the same time, there was no land registry and no effective deeds system or cadaster (Unruh 2016b: 6). Most recently the Houthi incursion into southern Yemen in mid-2015 shut down the land commission.

In Iraq, there is widespread destruction, confiscation and transaction of HLP belonging to those displaced from ISIL occupied areas, including confiscation and destruction of HLP records, personal identification documents, land administration buildings and infrastructure (IOM 2016). Meanwhile ISIL created its own institutions for HLP administration and management according to its interpretation of Sharia law (IOM 2015). The restitution process needed for these areas will involve over 3.3 million IDPs, apart from those dislocated during the long history of large-scale forced evictions, confiscations and transaction of HLP belonging to specific minorities in the Saddam Hussien era (Jahn et al. 2015).

In Colombia beginning in the mid-1960s with the FARC[2] seizing large landholdings and redistributing it to those who labored on it, the conflict in Colombia developed over the decades to include land and territorial control by peasant groups, right wing paramilitaries, narcotics traffickers, the Colombian armed forces and large-scale commercial interests (GMH 2010; Posada 2009: 111–281). At the onset of the conflict, grievances generated by the expropriation of peasant lands resulted in the kidnapping of commercial farm owners, which led many of the latter to depart the area, selling their *haciendas* cheaply to narco-traffickers and others who would then establish a paramilitary presence in the area to secure it. The land would then be sold on at a much higher price. In this regard, the escalation of the war and the rise of land speculation based on the war, was a parallel process (Posada 2009: 31). After

nearly fifty years of conflict and displacement that resulted in Colombia having the second largest internally displaced population in the world (over 5 million), the current peace accord envisions a large-scale HLP restitution program that will need to deal with five decades of displacement (Maloney 2016).

In Darfur, land rights have been at the heart of the war, and for the different groups involved in the conflict are complex, confused and volatile (Flint and De Waal 2008: 60; DDPD 2011; Suiliman 2011). While the promise of being able to keep, land obtained in course of the conflict was a primary incentive in recruitment of the *Janjaweed*, it came in the context of a highly unwieldy and volatile land rights history. The result is the use of dislocation and secondary occupation as tools in the conflict. Secondary occupation of many lands in Darfur is widely viewed as a primary obstacle to any peace process (e.g., Egemi 2009; Flint and De Waal 2008: 37), and the relevant actors struggle to find a way to engage in effective HLP restitution when so many IDPs do not have documents attesting to their claims (DPA 2005; Jaspars and O'Callaghan 2008).

The Contemporary HLP Restitution Process

Housing, land and property restitution processes have become a fundamental component of return, reintegration and recovery after wars (e.g., Leckie 2009, 2007, 2003; FAO 2007; Fay and James 2009; Karrer 2005). The international and national legal foundations for engaging in large-scale restitution programs is significantly established, and contemporary peace-building efforts have highlighted the importance of rapid, transparent, and just HLP restitution to attend to population-wide grievances and secure an enduring peace (e.g., Schwebel 2007; van den Hout 2006; Das and Van Houtte 2008: 1). Conventionally, planning and organizing such a process begins after hostilities are over as those that return find their HLP damaged, destroyed, occupied by others, or part of a reworked

ethnic or political landscape that makes access difficult or impossible. The restitution process itself is based on a set of transitional justice measures involving the application of legal concepts and procedures tailored to the transitional nature of postwar HLP restitution and claims application from hundreds of thousands of returnees.[3] At the same time the techniques for processing claims in an HLP restitution context have become relatively standardized, particularly with regard to, 1) determining who has a legitimate claim, 2) reducing the volume of claims to be processed, 3) determining a time-frame for events relating to dislocation for which claims can be submitted, 4) deciding on acceptable forms of evidence and proof, 5) corroborating evidence, and 6) making group decisions for entire categories of claims (e.g., Holtzmann and Kristjansdottir 2007; Van Houtte 1999; Rosenfeld 2003; Kozminski 1997; Crook 2006; Das 2006; Heiskanen 2006).

The usual approach for operating a mass claims restitution program for land and property is through a 'land commission' (e.g., FAO 2007; Holtzmann and Kristjansdottir 2007: 6; Das and Van Houtte 2008; Van Houtte and Delmartino 2008). Often derived by decree or as part of a peace accord and comprised of judges, advisors and technical legal personnel, a land commission in a war-affected country is usually recommended and supported by the international community, with legitimacy and legal basis drawn from both domestic and international law (Das and Van Houtte 2008: 7–20; FAO 2007; Holtzmann and Kristjansdottir 2007: 109–116; 222 Das and Van Houtte 2008; Van Houtte and Delmartino 2008). The land commission determines the procedural and evidentiary techniques to be used, including decisions regarding: criteria for eligibility, standards of evidence, burden of proof, how claims are categorized and corroborated, and the use of a variety of categorizing and decision-making techniques such as presumptions, precedent setting, inferences, modeling, common issue determination and data matching (Das and Van Houtte 2008; McGovern 1990).

There are three broad technical priorities in mass claims HLP restitution processes after war, 1) raising awareness among both the returning and still dislocated populations as to the opportunity and requirements for pursuing restitution claims; 2) gathering, assembling, and organizing what evidence does exist for claims to HLP by large populations of dislocated people who will have minimal understanding of the claims process; and 3) the rapid construction of a database of claims in order to engage in mass claims processing techniques able to screen, categorize and corroborate, so that decisions can be rendered for as many claimants as possible. All three of the above must be done as quickly as possible so that return is encouraged, population-wide HLP grievances are addressed and livelihood recovery can commence. If the process fails to move quickly enough, the risk is that claimants do not opt into the process and instead remain dislocated or take matters into their own hands (in potentially destabilizing ways), particularly when evictions are sought or compensation for damage is due. Achieving these priorities after a war is very time consuming, costly, and cumbersome. In addition, four primary challenges make contemporary large-scale HLP restitution programs significantly difficult: 1) refugees and IDPs can be reluctant to return to home areas if they know their HLP is occupied by others or destroyed; 2) those returning are often ill-equipped to prepare evidence and organize claims while experiencing highly compromised livelihoods during their return, especially if they have lost or never had documents attesting to ownership or occupancy; 3) the large cost of a HLP restitution program (including compensation funds) can be well beyond what a new or recovering government can afford, and funding must be sought from often reluctant donors; and 4) the time (often years) required to decide cases can discourage returning refugees and IDPs,

prompting them to withdraw from the process.

In the context of these challenges, the treatment of evidence in conventional land and property restitution programs constitutes a dilemma. Claims processing under state law almost always focuses on the adequacy of documentary evidence, and several HLP mass claims programs likewise embody a 'documents only' operating format (Das and Van Houtte 2008: 62). However, in transitional justice HLP restitution programs, such documentary evidence is highly problematic and necessitates a different approach and process (e.g., Fay and James 2009; Haersolte-van 2006). Claimants usually only have partial, informal, unverifiable or non-relevant documentary evidence. At the same time, the surge in falsified land and property documents during and after wars greatly complicates the reliance on such evidence (Unruh 2011: 99). Further aggravating the documentation context is that those who have taken over lands and properties (or subsequently purchased them) often do have documentation, frequently obtained from the state as current occupants seek to solidify their occupation (Unruh 2011: 100). Often no documents are possessed at all by returnees if lands were held under customary, tribal or other forms of informal tenure, or if documents were destroyed by war, a secondary occupant, over time, or had to be left behind while fleeing (Das and Van Houtte 2008: 64; Dabbas and Burns 2011).

The upgrade described here attends to these priorities and difficulties, and presents a framework that has the potential to result in a large reduction in the time and cost of postwar HLP mass claims restitution processes, while at the same time making several conventional techniques regarding evidence much more effective. This is done by combining a number of important evidence rendering and claims processing techniques with new forms of socio-spatial and digital media technologies, and bringing these forward from the postwar period into the wartime period.

An Upgrade
Overview
The opportunity to upgrade contemporary HLP restitution processes so as to be a significant advance over current practice is made possible by the current widespread and growing use of: mobile technology among contemporary refugee and IDP populations comprising forms of 'smart migration'; advances in the construction of databases, apps, and 'fit for purpose' cadasters; new techniques for handling and analyzing 'big data' (including that produced by social media); combined with an understanding of how conventional mass claims processing techniques currently operate. The upgrade described here seeks to leverage these elements in the construction of a framework to engage in evidence processing techniques for corroboration and categorization while a war is still underway. While locating claimants and organizing and uploading evidence will still need to go on after a war to attend to people who were not able to engage such a process during the war, the upgrade would nevertheless significantly decrease this postwar need.

The user end of the upgrade comprises a mobile phone app and/or web-based program that enables refugees/IDPs to learn about what constitutes valuable forms of HLP evidence (particularly in the absence of documents); and then place a variety of forms of evidence onto either their mobile devices or a web-based program and upload these onto a database residing on a secure server in a form of 'participative archiving' (i.e., Gilliland 2016). The database can then link to a digital cadaster able to perform certain procedures for evidence processing and corroboration (elaborated below). Most of the claims processing techniques to be upgraded are already commonly used in transitional justice HLP restitution processes, but always after a war is over, and after the lengthy and costly processes of institutional and infrastructural organization, awareness raising, claims filing and data entry. Engaging in these techniques within the upgrade will

enable claimants to significantly strengthen forms of evidence in ways that have not been possible before, and make them usable in a transitional justice mass claims restitution process immediately. The upgraded techniques include: timing, awareness raising, database construction, screening, the establishment of evidence patterns and categories, and use of matching and non-party evidence (described in their conventional use by Das and Van Houtte 2008; IBPCA 2006; Holtzmann and Kristjansdottir 2007; IOM 2008; Karrer 2005). These are in addition to two new techniques involving corroboration among claimants and real-time collection of evidence.

The participative archiving approach noted above will also allow certain 'soft' challenges of displacement and HLP insecurity to be addressed. Displaced populations are increasingly generating greater agency in their returns (Economist 2017). The advent of 'smart migration' not only enhances displaced populations' prospects, but also enables action, instead of passivity. Participative archiving in this context would allow displaced populations to begin the derivation of a claim in the near-term. It can also enable them to 'see' progress as components of their claim takes shape and is corroborated by a variety of forms, including social media and/or other claims. This in turn, contributes to the needed trust in specific institutional channels, thereby serving as a deterrent to more disruptive alternatives for pursuing claims. The Colombian government recently experimented quite successfully with a somewhat similar approach in its plebiscite regarding the peace accord with the FARC insurgency for overseas voters (EIG 2016).

Techniques
Timing
The timing of HLP restitution programs embodies several important considerations. As noted above, conventional restitution programs are planned and implemented well after the end of a war, and require a good deal of time to organize. The upgrade proposes to begin certain components of the claims process while a war is still underway and people are still dislocated, and so provide a number of advantages. These components include, awareness raising, evidence collection and categorization, database construction, screening for fraudulent claims, and several techniques for evidence corroboration. Because documentary evidence will be problematic for most dislocated people, the assembling of other forms of evidence while dislocated becomes quite important. And while refugees and IDPs can have a significant quantity of different forms of evidence, because they can be unaware of their value as evidence, it can be lost over time during dislocation. Photos, details of intimate knowledge of properties that only a former occupant would know, histories of HLP acquisition and occupation known by elderly dislocated people and their neighbors and kin, can all disappear during prolonged exile. Pursing this evidence collection during the war would capture important evidence before it is lost and make it useful in the claims process.

Research on contemporary conflicts reveal that displaced populations are rarely ever just passive actors – they do not simply sit in camps or congregate in cities and wait to go home. Rather, today's refugees and IDPs play an active role in shaping and facilitating their return to their HLP. They spend a great deal of time and social capital while dislocated trying to determine the status of their homes, shops, and agricultural landholdings in their areas of origin. In other words, displaced populations are constantly preparing for their eventual return. For example, Pritchard (personal communication) notes that in South Sudan the IDP population uses cell phones, the Internet, radio, and sizable networks of people to share information about the war and potential returns – including the status of HLP in home areas. Thus, pursuing components of a restitution program among displaced people while they are displaced, can align very well with what they are already attempting to do.

A certain degree of caution is warranted regarding such a change in the timing of components of a restitution process. Claims preparation will still need to occur after the war to capture those claims that were not started during the war. It might be expected however that such a post-war claims preparation process would experience a greatly reduced volume than if the whole process waited until after to war to begin.

Awareness raising

Raising awareness among dislocated populations with regards to HLP restitution is an acute and pervasive need. IOM (2016) found a near pervasive unawareness among Iraqi IDPs with regard to the laws, institutions, services and options for pursuing HLP restitution claims; and Unruh (2016a) found a profound unawareness among Syrian refugees in Jordan, Lebanon and Turkey regarding the types of relevant evidence already in their possession.

Broadly, awareness raising needs fall out along three lines that pertain to the timing of dislocation and return. First, while dislocated there is a need for refugees/IDPs to become aware of important aspects of evidence regarding claims to their HLP in areas of origin. To obtain compensation or assistance for damaged or destroyed HLP, or for assistance in evicting a secondary occupant or resolving disputes which arise after conflict, dislocated people need to become aware of the importance of proving how they are attached to their HLP, and the importance of beginning to assemble evidence while in exile. The type of information that needs to be contained in awareness raising components includes, the need for evidence, what types of evidence are valuable and obtainable, and what to do with such evidence while in exile. Among the forms of evidence that almost all refugees/IDPs have but do not recognize as evidence with corroborative power include: ancillary (including informal) documentation (such as hand drawn maps, descriptions, etc.); knowledge of the histories, narratives and locations of buried features (pipes, wires, cables, tanks, refuse etc.); photos of themselves or family members at the property and area they lived in; the ability to recognize their home areas and HLP from pre-war air photo and satellite imagery; attestations by neighbors, friends and relatives with regard to their HLP; and engagement in forms of social media regarding their HLP. Second, as refugees/IDPs begin to return to their HLP to find damage, destruction or secondary occupation, they need to be aware of what their legal options are, and which options are discouraged. Information about where they should go and who to contact with their claims, complaints, disputes and requests for reconstruction assistance and compensation need to be provided prior to their return. This is important in a postwar context due to the inclination of many returnees to default to armed kin, tribe, religious or other groups for assistance in evictions and retribution involving HLP issues. Third, awareness raising is needed regarding what exactly one's rights are—whether as an HLP owner, renter, squatter, secondary occupant, purchaser or seller during and after wartime; or someone seeking compensation for damaged or destroyed HLP.

While awareness-raising techniques can be accommodated to a degree with radio programs and other information campaigns, if it is included as part of an app package or online web site used during the war, users can access information tailored to their HLP circumstances, language and literacy. Moreover, unlike radio programs, they can visit the website when they wish, research specific questions, as well as return to the site for various details as needed. A web-based or online information resource provides greater opportunity for detailed information and enables users to seek the level and type of information they require. This puts greater agency in the hands of the displaced, and provides a sense of progress regarding return. A limitation to this form of awareness raising is the degree of literacy of the participant. While some information can be conveyed pictorially, or with audio files, much of the

information will need to be conveyed in written form. One way to attend to such a limitation however is to have various forms of assistance available, such as a drop-in center, an office at a refugee or IDP camp, etc.

Database construction

One of the most important components of a mass claims program is the rapid construction of a database of claimants and their evidence, so that the techniques of mass claims organizing and processing can begin. The conventional approach to database construction requires significant amounts of time, funding, personnel, equipment and organization. However, populating a database while a war is still underway by engaging refugees/IDPs in assisted-uploading of their own evidence through their mobile devices while they are still dislocated, can result in a much quicker database availability after a war, a much-reduced cost involved in data entry, a reduction in personnel needed, and a much nimbler claims processing infrastructure. This can then facilitate evidence corroboration and other processing techniques (elaborated below) to also begin prior to the end of the war. A limitation here would be internet access. And while most camps and cities where refugees/IDPs congregate do have internet, access for those outside and cities where refugees/IDPs congregate camps may be variable—such that opportunities would need to be made after refugees and IDPs return to locations of origin to file claims and upload evidence.

Screening

Fraudulent, frivolous, duplicate and 'out of mandate'[4] claims can constitute significant proportions of mass claims restitution programs. In Yemen's recent restitution program approximately 30 percent of claims fell into these categories (Unruh 2016b: p. 8). This is partially due to having to wait until after a war is over to begin filing claims, when returning refugees/IDPs cannot be distinguished from others hoping to take advantage of a restitution program. Such

claims then need to be screened out using a set of database techniques (Holtzmanan and Kristjansdottir 2007: p. 166). But because it takes considerable time to create the claims database after a war, timely screening can be problematic, delaying the implementation of subsequent techniques needed to categorize and corroborate evidence for claims. The upgrade proposed here makes advances in screening in two ways. First, while the war is still underway refugees/IDPs can be approached directly for their participation (in camps, and where they are located outside of camps) thereby targeting those that are known to be dislocated. Second, for IDPs and others seeking to upload evidence as part of a claim but not included in such direct targeting, database screening can take place quickly during the war with techniques of evidence pattern establishment, networking among adjacent claimants, and the use of matching and non-party evidence (described below). While this approach would be a significant improvement over current approaches to screening, it is not fail-proof; and fraudulent evidence and claims can still be made. However, it would also be quicker and easier to automatically screen.

Evidence patterns and categories

Use of evidence patterns and categorization techniques are valuable in HLP mass claims processes because they can attend to both the poor quality and lack of documentary evidence, and the need to avoid spending large amounts of time and money investigating individual claims (IBPCA 2006). Patterns of evidence that emerge from a certain group of claims are quite useful in subsequently making judgements for the whole group – frequently involving thousands of cases (IBPCA 2006). Often those claimants that had HLP confiscated or destroyed under similar circumstances or in a certain area, or held HLP in the same way (formally, informally, tribal, lineage or hybrid forms of tenure) will provide similar evidence, however partial, weak or indirect. This means that patterns of evidence can be established. These patterns

can then define a group of claimants, and the pattern itself then becomes useful evidence in subsequently making decisions for the entire group. In this regard, the greater the number of similar claims, the more solid the pattern and the stronger each individual claim within the group becomes in a transitional justice context (IBPCA 2006). The pattern can be particularly useful for claims that only have partial evidence, but because the evidence that the claimant does have fits a broader pattern, the claimant is included in the group and will benefit from a decision and remedy applied to the entire group. The proposed upgrade will significantly advance this conventional technique by allowing several evidentiary patterns to become known and established well prior to the end of the war, as refugees/IDPs upload their evidence and patterns can be established within the database. Attaching claimants to evidentiary patterns in this way facilitates both a strengthening of evidence for claimants who belong to the pattern, and much quicker decisions and remedies after the war.

Other forms of claims categorization that are standard for mass claims processes (e.g., IBPCA 2006; Das and Van Houtte 2008) can also be facilitated prior to the end of a war as the database becomes populated. Claims can be grouped by any number of topics, such as the types of HLP losses that are claimed; the legal questions raised; the circumstances regarding how HLP losses occurred; location of losses; vulnerability to food insecurity; vulnerability to persecution and/or discrimination. Doing this identifies groups of claimants that are more easily and quickly provided with a single remedy for the whole group once conditions permit.

As is the case with conventional treatment of evidence patterns, such a categorization process can be a form of 'rough justice', whereby some claimants will be included in categories that they should not be, and others that should be in a category are excluded.

This is usually handled by opportunities for appeals.

Spatial network of boundary corroboration

Attestations from neighbors and relatives as to HLP ownership, occupation, boundary location and the specific history and features of HLP, can produce a valuable spatial network of evidence for claimants – as can statements regarding who lived where in multistory buildings. In contemporary approaches to deriving this form of evidence, there is a need to wait until such individuals and claimants return from scattered exile to locations of origin before such forms of evidence can be organized. However current socio-spatial technologies not only allow this form of evidence to be organized while refugees/IDPs are still dislocated, but can significantly amplify its effectiveness. This is because today's refugees/IDPs can connect via cell phone and social media with their former neighbors, relatives and friends who know about their HLP details, regardless of where any of them have been dislocated to. This allows more people to be brought into such a network, earlier and quicker. Statements and corroboration among such a group can create a mutually beneficial spatial network of evidence for ownership, occupancy and boundary corroboration in a text-map combination. The ingredients for doing this already exist on google maps and Wikimapia – with many Syrians now using Wikimapia for drawing boundaries (virtually) around their HLP and uploading photographs. Essentially, the more mutual corroboration by those who lived in a specific area, the more powerful this form of evidence becomes. And importantly, it can be assembled while in exile. It is also likely to be quite difficult to fraudulently produce such a network of corroboration because the veracity of each person in the network has multiple links. One limitation with this technique is the access to the app technologies that can locate kin and acquaintances (e.g., Refunite, Wikimapia).

Use of 'non-party' evidence in claims corroboration

Conventional mass claims processes can computerize the corroboration of large numbers of claims by matching specific evidence or assertions in the claims with information in other databases that were not constructed for HLP purposes (e.g., Holtzmann and Kristjansdottir 2007; IOM 2008). This 'non-party evidence' is usually held by governments, non-governmental organizations and the private sector along with international organizations. Seemingly unrelated information is frequently used for this purpose – databases for electricity, water and banking services, school lists, etc. This technique seeks to corroborate that certain assertions and evidence regarding land and property rights are true or likely to be true – such as the address or general area of origin of the claimant. The technique can be compromised however if one of the belligerent parties in a war realizes the usefulness of such databases for this purpose and destroys them – which is the case for Syria (Unruh 2016a). However, this technique can be upgraded to get around the destruction of such domestic non-party databases, and amplify its corroborative ability. This can occur through a combination of the construction of an evidence database during the war together with the reality that contemporary conflicts produce immense quantities of event-related and spatially explicit digital information that, unlike in earlier wars, is now accessible via the Internet. Social media, news reports, photos and videos produced by cell phones, news agencies, NGOs, aircraft and satellites (including Google Earth), and even the belligerent parties themselves, can all be used to corroborate forms of evidence, and can be done in a largely automated way. Significant advances have been made regarding the examination of such 'big data' via social media data mining and other electronic means which can provide corroboration as to specific locations, features, facts, assertions, events, processes, and populations. Lynch et al. (2015) and Asiedu (2014) describe at length the different databases that can be constructed from social media and the types of analysis that are able to provide a great deal of corroboration. Non-party evidence can also be useful for both screening and the development of evidentiary patterns. A potential limitation to this technique is that the claimant needs to understand the concept of corroboration, which may not always be the case. The awareness raising component of the proposed approach may be able to mitigate this limitation.

Real-time collection of evidence

The use of mobile phones and the technological literacy of today's refugee/IDP population (e.g., Economist 2017; Lynch et al. 2015; Gillespie 2016) allows an upgrade to make possible the collection of additional HLP evidence in real-time. Eighty-nine percent of Syrian refugees communicate with their relatives and friends still in Syria by mobile phone and social media (AFAD 2013). Such communication allows for the collection of additional evidence, such as the status of HLP (destroyed, occupied, empty); the electronic copying and transmission of any remaining documents; and the photographing of structures, boundaries, tree crops and other features, together with their GPS coordinates – all of which can then be sent via phone or social media to refugees/IDPs from those still inside the country. A potential limitation here would be the necessary understanding on the part of dislocated people regarding the potential use of their mobile devices in the collection of additional evidence. Unless IDPs and refugees understand what evidence is obtainable with this technique, they will be unlikely to use it. It would be the role of the awareness raising component of the approach to instruct potential claimants on the value of using their mobile devices to obtain certain types of evidence.

Conclusion

The enormity of today's forced dislocation problem highlights the importance of effective approaches for returning to one's HLP. While contemporary techniques for HLP restitution have progressed significantly, they are no match for the current dislocation crisis. Upgraded restitution techniques are urgently needed to significantly increase effectiveness and timeliness, and decrease costs. An upgraded approach should begin during the conflict to organize refugee/IDP claims to their lands and properties. Priority should be placed on the collection, storage and corroboration of a wide variety of evidence for claims beyond government issued documentation so that after the conflict, transitional justice efforts can move much more quickly and at a lower cost and larger scale than they currently operate. Current socio-spatial technologies can facilitate this for large dislocated and dispersed populations, particularly populations so adept at mobile technologies. Upgraded techniques put into place prior to the end of a war would significantly encourage return once the war is over, check processes that disenfranchise and destabilize, and streamline the overall restitution process.

The upgrade described here uses many of the ways currently displaced populations are already managing and monitoring their HLP from afar. Leveraging contemporary patterns utilized by displaced populations can facilitate adaption to upgraded techniques so that they can begin crafting claims to HLP as soon as they are ready, as opposed to having to wait years. Addressing the grievances of forcibly dislocated populations by providing a real sense of timely recourse can diminish the appetite for more disruptive or violent means for pursuing restitution or other remedies. And given the size of the world's forcibly dislocated population, this is one of the more pressing issues.

The innovation described here faces certain challenges that will require additional attention. Building trust among participants will require involvement by international, independent and impartial institutions. This will also be important to prevent the program from being taken over, and provide guarantees to different sectors of society while the war continues. Certain humanitarian organizations will be of use in this regard. Given that the development of this upgrade has proceeded ahead with certain UN and NGO actors, they prefer that we be discrete in hinting at their involvement prior to the end of certain wars. Security of the information provided by participants will be a concern, and the authors have begun exploring the utility of block chain in this regard, which is already being used for HLP work. Addressing different levels of technology literacy is currently being explored by the authors' ongoing research among dislocated populations in Iraq. Preliminary findings indicate that while there do exist different levels of technology literacy, to a large degree this occurs within families such that those with lower levels of literacy are still able to be assisted by family members. A related issue, however, are the different capabilities of the mobile devices used by participants. While smart phones are most useful for the approach described here, simpler devices can still be used to 'push' information in an awareness raising context. Our current work in Iraq indicates that even some of the simplest devices are still able to get on the internet.

Restitution processes for HLP will continue to grow in importance to attend to the size, complexity and urgency of the world's forced dislocation problem. To facilitate this, it is important that these processes take advantage of developing technologies and trends. This article proposes some of the techniques that could be upgraded for a quicker, more effective and lower cost approach to one of the more important problems facing the world today.

Notes

[1] The term 'restitution' as used here includes a variety of remedies not limited to return of one's HLP.

² The Fuerzas Armadas Revolucionarias de Colombia (FARC) was the primary rebel guerrilla group.

³ Transitional justice (TJ) exists in a variety of aspects, war, authoritarianism/dictatorship, development, humanitarian efforts, and gender among others. While a discussion of these different aspects is important, TJ is presented in the paper only in an introductory way with regard to HLP mass claims. The interested reader is referred to Duthie 2012.

⁴ 'Out of mandate' claims are those that fall outside of the mandate of specific restitution programs. For example outside of specified dates of dislocation or areas of the country.

Competing Interests
The authors have no competing interests to declare.

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