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Using social media in natural disaster management: a human-rights based approach

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Abstract

Disaster response authorities in many states have been increasingly using social media data for emergency management. In so doing, it is crucial to consider the ethical and factual provenance of data being processed. This article explores the legal scenario that a software harvesting social media to extract data in disaster management decision support may face. Three legal components are considered: human rights law; international humanitarian law; and the international law on disasters. It is argued that a coherent way of ethically and pragmatically handling this complex regulatory set is by adopting a human rights-based stance. This is also recommended to contrast a shared vision that highlights disproportionately the technological and 'digital' dimensions of the humanitarian action. It is argued that for a software device whose purpose is to surf the Internet and grab information to better manage disaster relief operations, key components are context-sensitive design, interoperability, transparency and people-centeredness.

***Keywords**: disaster law, human rights, humanitarian law, civil protection, social media, social computing*

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Introduction

Over the years, in many states including within the EU, more and more civil protection agencies confronted with natural and man-made disasters have collected and processed texts, images, video and other data circulating in formal and social media, including web-based social network services, in order to distil information likely to support their rescue activities. These forms of 'social computing'[1] – especially when 'big data' are involved – raise ethical and legal challenges.

Social media and social networks may provide data that can and should be used, in accordance with applicable legal and ethical standards, to enhance emergency response capacities. Special skills are needed to manage complex information ecosystem, but also to understand and address the broad societal implications of such technology, including in the legal domain.

From a legal viewpoint, and having in mind the multi-level dimensions (global to local) of civil protection and risk-reduction policies (UNISDR 2015), risks and areas of concern include copyright law and privacy and data protection law, as software collects and analyses data potentially covered by intellectual property laws and potentially intrudes into social media and social networks where personal and even sensitive data may be exchanged. Indirectly, however, many other fundamental rights are involved. Finally, legal matters relating to contract law are also relevant.

The objective of protecting the rights and interests of people affected by a natural disaster carves the scope and the limits of the activity of harvesting social media for disaster management purposes. Ethical and legal regulations therefore are not conceived of as obstacles or impediments to the full deployment of a potentially life-saving dispositive, rather as the normative platform that underpins the system.

This article does not address the specific and highly relevant areas of copyright and privacy/persona data protection[2], and rather holds a more

[1] Social computing has been defined as 'computational facilitation of social studies and human social dynamics as well as the devise and use of ICT technologies that consider social context' (Wang et al. 2007).

[2] There is still little literature illuminating the interplay between data protection principles and rules, and the processing of personal data for disaster management purposes. Nevertheless, the EU General Data Protection Regulation (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC – GDPR) has a significant provision that makes explicit reference to such scenarios. Recital 46 of the Regulation provides that: '[t]he processing of personal data should also be regarded to be lawful where it is necessary to protect an interest which is essential for the life of the data subject or that of another natural person. Processing of personal data based on the vital interest of another natural person should

general stance, trying to consider the whole range of human rights and humanitarian concerns potentially involved. The right to life; the rights to food and water, housing, clothing, health and livelihood, and the right not to be discriminated against, are all of special relevance in the event of a humanitarian crisis. International human rights instruments are however generally reluctant to specify to which extent in humanitarian crises the individual interests of the affected persons are to be treated as rights, i.e. personal entitlements, rather than as simple expectations not creating state obligations *vis-à-vis* the individuals. If human rights (and not just 'needs') are involved, then reparations and redress measures are also required, and therefore 'secondary rules' of human rights protection are to be implemented.

The first part of the paper illustrates the legal setting of international law on human rights and disaster response. A short introduction to international human rights law (IHRL), international humanitarian law and disaster law is provided. The main goal is to delineate the boundaries and mutual interactions between the three main components of the relevant legal scenario (De Guttry et al. 2012; Caron et al. 2014). In this perspective, a special attention will be paid to the work of the International Law Commission on the protection of persons in the event of disasters.

Then, a central section is devoted to discussing the phenomenon of 'digital humanitarianism'. It is argued that while social computing should be viewed as a powerful tool for analysis and decision making in any social domain, including in disaster response, it also raises the risk of detaching civil protection managers from the direct appraisal of the concrete context (physical, social, institutional, etc.) in which a calamitous event is unfolding. This may be detrimental to a human rights-based approach to disaster management and recovery.

Finally, some human rights issues that are likely to emerge in relation to natural disaster response management are presented, along with their possible implications for the development of software prototypes actively searching the Internet and the social media for civil protection purposes.

The broad intent of this paper is therefore to articulate a 'human rights-based approach' to civil protection. This analysis seeks to characterise the inherent limits and counter-limits of the rights claimed by those at the two edges of a natural disaster scenario. On the one hand, relief and rescue providers seek to remove any hindrance to their efforts, and namely to grasp

in principle take place only where the processing cannot be manifestly based on another legal basis. Some types of processing may serve both important grounds of public interest and the vital interests of the data subject as for instance when processing is necessary for humanitarian purposes, including for monitoring epidemics and their spread or in situations of humanitarian emergencies, in particular in situations of natural and man-made disasters.'

and process any information, including personal and sensitive data, likely to facilitate access to people in need. On the other, individuals in distress do not lose their dignified status of rights-holders and wish to keep control over their personal data whose wrong use might expose them to any harm. Whilst 'public safety', 'public order' or 'public interest' clauses – not to mention derogation powers – do allow for restrictions to the full implementation of most (not all) individual rights, a blanket disregard for individual rights would be unacceptable 'in a democratic society'. A proper human rights-based approach – characterised by dignity, transparency and accountability – is therefore required to guarantee both effective humanitarian action and recapacitation of affected people.

1. The International Legal Framework on Disaster Management

In this section, a summary of international sources relevant to the issue of disaster management will be provided. The main assumption underpinning the survey, is that a human rights-based approach allowing for a balancing between the competing calls for public safety and individual rights, would usefully integrate the humanitarian principles associated with emergency management. The link between disaster management and human rights is rather obvious. However, a clear and articulated connection has not been fully explored until recently, as other paradigms, namely the 'humanitarian' one, have monopolised the analysis and set the terms of the debate.

Disaster management systems are grounded on humanitarian and human rights law. Under principles and norms of human rights and humanitarian law states have a duty to protect the population from hazardous events including natural disasters. Normative sources and case law provide examples of how disaster management systems address the issue. The very idea of establishing a law on disasters is premised on the hypothesis that disasters, including natural disasters, are social constructions: 'disasters are social phenomena and should be understood through social systems' inability to encounter naturally occurring hazards or, more precisely, our social vulnerability' (Lauta 2015). In other words, despite the traditional notion that links any disaster to an unpredictable emergency situation where exceptional measures have to be 'invented' and imposed, eventually displacing ordinary legal standards, the line of thought supported in this paper is that disasters can be and are indeed managed under the rule of law and in accordance with human rights regimes. In this sense, it is argued that in disaster situations the humanitarian language, that implicitly incorporates emergency and extraordinary measures, is usefully complemented by a systematic reference to 'ordinary' human rights standards and procedures.

1.1. International Law of Human Rights

The international law of human rights (Alston and Goodman 2013; De Schutter 2014; Shelton 2014) can be conceived of as a set of public international law provisions, both customary (i.e. non-written principles and rules supported by consistent state practice and generalised conviction as to their binding nature) and conventional (i.e. written in treaties and other written binding instruments) law. State consent is therefore at the basis of such principles and norms, but what is peculiar to this branch of international law is that by entering a human rights regime, states accept to undergo obligations not only in respect of other States, but also ultimately *vis-à-vis* any individuals.

After the adoption of the Universal Declaration of Human Rights (1948), whose principles are now generally recognised as customary law, a web of multilateral conventions has gradually unfolded, with the support of the United Nations and other international organisations, involving virtually all states. As a matter of fact, any state is now a party to some of the nine core human rights conventions and of the nine protocols thereof, and bound to protect the rights of all human beings as a matter of international law.

In addition to developments at global level, regional organisations too have adopted their own standards that are meant to integrate and enhance the protection afforded by the UN instruments just mentioned.

The EU, in particular, with the entry into force of the Lisbon Treaty, has incorporated as binding at the same level as the Treaties a Charter of Fundamental Rights, largely replicating the provisions of the European Convention of Human Rights (ECHR) and of other instruments in the area of human rights to which the EU Member States are parties (De Schutter 2016). In so doing it has explicitly expanded the repertoire of arguments at the disposal of the Court of Justice of the EU (CJEU) to include fundamental rights considerations, inasmuch as matters within the competence of the EU are at stake.

Besides an ethically and politically strong kernel of human and peoples' rights whose denial would corrode the foundations of any modern society (a core set of norms sometimes referred to as part of *ius cogens*, or peremptory norms of international law), the recognition of other rights, as well as the interpretation and practical implementation of most of them, depends on historical, political and socio-economic factors and may vary *ratione temporis, loci and personae*. This said, however, it must be pointed out that any limitation or restrictive interpretation of human rights standards motivated by economic, political or strategic interests of the states and of other duty-bearers, have to be carefully justified, as human rights are

inherently associated with the basic interests, aspirations and needs of actual human beings. This human-centric stance explains why, although dispersed in a number of legal instruments, most of which focus on a specific subject (civil rights, torture, economic rights, etc.) or a particular target (children, women, persons with disabilities, etc.), all provisions do share a common pattern and human rights have to be conceived of as 'universal, indivisible and interdependent and interrelated'.[3]

Human rights guarantees operate under all circumstances. Human rights, however, apart from some exceptions concerning for example the prohibition of torture and slavery, are not absolute. States have certain leverage in adopting legislative and other measures that limit the exercise of a given right in order to protect the fundamental rights of others or when it is necessary and proportionate to defend the national security, public health or morals, and the public order. Under certain conditions, states may also enter reservations to international instruments.[4] Sometimes human rights instruments provide for 'clawback clauses', when they dispose that some human rights have to be exercised 'in accordance with the national law', apparently giving back to the state a wide discretion as to the definition of the very nature of the right.

Judicial or non-judicial bodies have been set up by international conventions to monitor the implementation of the respective provisions and supervise to the correct implementation of the international standards. Courts (for example the European Court of Human Rights – ECtHR, established within the Council of Europe) and quasi-judicial bodies (for example the Human Rights Committee set forth by the International Covenant on Civil and Political Rights and operating mostly under the provisions of the Fist Protocol to the said Covenant) use the doctrine of the 'national margin of appreciation' and the principle of harmonization to support alternatively a more State-tailored or more uniform application of the treaty law.

Only in extreme cases do human rights regimes need to be suspended. This happens when a war or another public emergency 'threatens the life of the nation' (art. 15 ECHR). The formula is almost verbatim reproduced in art. 4 of the International Covenant on Civil and Political Rights, which mentions 'time of public emergency which threatens the life of the nation and the existence of which is officially proclaimed'. The same words are used in the Arab Charter of Human Rights, while art. 27 of the American Convention

[3] Vienna Declaration and Plan of Action, Adopted by the World Conference on Human Rights in Vienna on 25 June 1993, § I.5.

[4] See the International Law Commission (ILC) 'Guide to Practice on Reservation to Treaties', adopted at the 63rd session of the ILC, 2011.

on Human Rights has a wider reference to 'time of war, public danger or other emergency that threatens the independence and security' of the state. Although natural (or man-made) disasters are not explicitly mentioned, it is generally accepted that a state can legitimately invoke such events to resort to temporary measures suspending the exercise of fundamental rights, in as much as this is a necessary, non-discriminatory and proportionate ('in a democratic society') measure, and does not breach other international obligations (Sommario 2012) – for example obligations concerning refugee protection – or obligations matching non-derogable rights, such as the right to life, or peremptory norms of international law, such as the prohibition of torture or the ban on genocide.

1.2. International Humanitarian Law

In the exceptional circumstances envisaged in the derogation clauses, namely in wartime, a more specific set of international rules apply: the international law of armed conflicts, also known as international humanitarian law (IHL). IHL originated in the XIX Century with the fundamental aim of limiting and regulating the use of force in international armed conflict as *ius in bello*. Codification of IHL took place on the occasion of major international conferences (e.g. the Hague peace conferences of 1899 and 1907, the Geneva conferences of 1949 and 1977), often thanks to the input of the International Committee of the Red Cross (ICRC) and of the Red Cross and Red Crescent movement. Many treaties and an expanding set of customary law constitute contemporary IHL, complemented by domestic laws and the jurisprudence of national and – namely after the 1990s – international criminal tribunals/courts that have been applying humanitarian standards on war crimes. The most relevant instruments in the field of IHL are the four Geneva Conventions of 1949 – whose provisions have largely become general international law considering their virtually universal acceptance – and the Additional Protocols thereto, adopted in 1977 (on international and non-international armed conflicts) and in 2005 (on an additional distinctive emblem of the Geneva Conventions). While taking into account the 'necessities of war', IHL provisions do include basic human rights and, generally speaking, the law or armed conflicts and human rights law are meant to be mutually supportive.

What is true in wartime also applies in other emergencies occurring in peacetime, including natural disasters. Humanitarian disaster response operations are therefore also aimed at human rights protection and promotion, besides re-establishing the conditions for the 'life of a nation'. Disaster response managers operating for the state may therefore trigger the state's

international responsibility for human rights violations in cases where they do not meet the standards set forth in international law. Even in wartime, military personnel may commit war crimes (which trigger the personal responsibility of the perpetrator but also may engage the international responsibility of the concerned state), as well as violations of human rights provisions from which the state has not derogated or that are non-derogable. Many judgments of the ECtHR, for example, have found Member States of the Council of Europe responsible for committing violations of the right to life or the right not be tortured while waging combat or other military operations, within or even outside the territory of the Council of Europe, in an international or internal armed conflict.[5] (Connections between disaster and the international human rights framework will also be discussed below, in connection with the Draft Articles on the protection of persons in disasters, being elaborated by the International Law Commission.)

In conclusion, it is safe to maintain that the web of human rights and humanitarian law provisions that have been quickly summarised above confirms the assumption that any 'exceptionalism' that would discard the relevance of law provisions and accountability thereof whenever patterns of emergency occur, including in natural disaster scenarios, is to be rejected. The *juridification* of facts such as armed conflicts and national emergencies is a consolidated reality in present-day societies. A 'law of disasters' is therefore not an oxymoron ('disasters know no law'), and managing a disaster situation in strict accordance with human rights is a real possibility.

1.3. International Disaster Response Law

In emergency situations other than armed conflict, the applicable international legal framework is not fully articulated. Indeed, the area of 'civil defence' has emerged as distinct from the domain of IHL during the first half of the XX Century, but for many years it continued to be largely associated with the functions and methods of military or paramilitary forces. A clear separation from the military milieu was achieved with the adoption, in 2000, of the *Framework Convention on Civil Protection Assistance*, which defines 'civil defence service' as 'a structure or any other state entity established with the aim of preventing disasters and mitigating the effects of such disasters on persons, on property and the environment' (art. 2).

[5] Cf., among others: *Isayeva and Others v. Russia*, nos. 57947/00, 57948/00 and 57949/00, 24 February 2005, and *Al-Skeini and Others v. the United Kingdom* [GC], no. 55721/07, ECHR 2011.

A human rights approach to disaster management necessarily embraces the ethical and legal standpoint centred on basic needs and emergency, and epitomised in the *triage* process. Integrating human rights into civil protection activities does not change the priorities of relief officers. Nevertheless, it makes them aware of the wider societal implications of their work, and prevents the risk of giving full attention to fragmented, technical indicators of performance while neglecting human and social indicators. In other words, '[i]ncorporating human rights, or adopting a human rights-based approach, does not necessarily mean that priority must shift away from the primary objective of saving lives: it simply requires that human rights be mainstreamed into each stage of the humanitarian relief effort' (Harper 2009). However, it is not obvious to conclude that a thing such as a human right to receive humanitarian assistance in case of a natural disaster exists as such in international law.

Since the early decades of the XX Century, a *corpus* of International Disaster Response Law (IDRL) has been taking shape at regional and global level, aiming at harmonizing domestic legislations, facilitating international delivery of disaster response operations, and coordinating activities performed by international actors both domestically and in trans-border missions, in any phase of disaster management. The IDRL development has however been fragmented and inhomogeneous, negatively conditioned by political divides and lack of trust between states and blocs. Evidence of this was, *inter alia*, the flop of the International Relief Union, an international organisation established in 1927 and eventually discontinued in 1982, that utterly failed to carry out its ambitious mandate of coordinating international assistance in disasters. Similarly, the *Framework Convention on Civil Protection* mentioned above, adopted in 2000 on the initiative of the Geneva-based International Civil Protection Organisation and entered into force in 2001, with the aim of reducing obstacles to offers and requests of assistance among states in case of natural or man-made disasters, has been ratified by only four states. The role of supplying soft-law instruments and political input, and of coordinating governmental and nongovernmental humanitarian actors in the field, when the affected state is overwhelmed by a crisis, has been taken up by the UN, especially after the enactment in 1992 of UNGA Res. 46/182, that set up a comprehensive structure to address humanitarian crises and disasters. The UN currently ensures the coordination of humanitarian and disaster response activities through the Office of Coordination of Humanitarian Assistance (OCHA), established in 1998.

In contemporary state practice, IDRL is to be understood as encompassing not only the response phase of a disaster when strictly rescue or relief operations are performed, but also the phases of disaster prevention,

mitigation and recovery (Farber 2014). Relief interventions need be put in context; to this end, a thorough understanding of the disaster lifecycle is indispensable. The cycle includes first of all pre-crisis risk mitigation efforts, as factors such as the climate change or other large scale environmental occurrences affect the unfolding of minor and major disasters. The 1992 UN *Framework Convention on Climate Change* and the subsequent agreements, including the 2015 *Paris Agreement*, have mandated states to undertake measures of adaptation to the adverse effects of climate change – namely in the framework of the *Cancún Agreements* (UNFCCC 2010) – by establishing, amongst others, early warning systems, and enhancing emergency preparedness. For example, the EU with its international partners, in the effort to 'achieve climate resilient sustainable development', has supported 'the integration and building of climate resilience into relevant multilateral frameworks, such as at the recent Third World Conference on Disaster Risk Reduction, which resulted in the *Sendai Framework for Disaster Risk Reduction 2015-2030* and the on-going post 2015 Development Agenda'. It is also worth mentioning that Goal 13 of the UN Sustainable Development Goals[6] includes among its objectives to '[s]trengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries', once again linking climate change adaptation, disaster risk reduction and development. The next layer in the crisis cycle is of course crisis response, the core of IDRL. A large number of treaties on diverse issues, from environment to aviation, from transboundary activities to trade, contain provisions of relevance for national civil protection services.

Even without a dedicated comprehensive framework, the IDRL has expanded and evolved in a wide web of bilateral and multilateral agreements, and a growing body of principles and soft-law. The covered areas include state international obligations in case of disasters affecting their territory, cooperation between states in delivering assistance, and the rights of the populations and individual victims of the disaster (De Guttry 2012). Examples of the renewed efforts towards a more consistent regulation of some key areas of the international disaster response frame are the following treaties:

- Convention on Early Notification of a Nuclear Accident (1986);
- Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency (1986);
- Convention on the Transboundary Effects of Industrial Incidents (1992);
- Tampere Convention on the Provision of Telecommunication Resources

[6] UNGA Res. 70/1: *Transforming our world: the 2030 Agenda for Sustainable Development*, 25 September 2015.

for Disaster Mitigation and Relief Operations (1998);
- Food Aid Convention (1999);
- Convention on the Safety of United Nations and Associated Personnel (9 December 1994), and the Optional Protocol thereto (2005);

The latter Optional Protocol specifically mandates states parties to prevent crimes like murder or hostage taking committed against UN and UN-associated personnel while 'delivering emergency humanitarian assistance' (in addition to UN peacekeepers) and to prosecute or extradite the authors of such crimes (the Convention does not cover violations of humanitarian law). The International Law Commission of the UN has recently elaborated some draft articles on some aspects of IDRL, which will be presented below.

Not only states may be party to such agreements; in the European context, a certain role is played by sub-national authorities, operating under the umbrella of the Council of Europe's *Outline Convention on Transfrontier Co-operation between Territorial Communities or Authorities* (adopted in 1980, entered into force in 1981, currently ratified by 39 European States, the UK, Denmark and Greece being among the non-Parties).

A powerful support to the development of IDRL both world- and region-wise has been provided by the UN and namely the UN Office for Disaster Risk Reduction (UNISDR), a unit established in 1999 within the Secretariat-General to coordinate the International Strategy on Disaster Risk Reduction, and in particular to assist implementing the *Hyogo Framework for Action* of 2005 and the *Sendai Framework for Disaster Risk Reduction* of 2015. An key contribution to IDRL has been provided by the Red Cross and Red Crescent Federation, under its 'Disaster Law Programme' (formerly 'International Disaster Response Laws, Rules and Principles (IDRL) Programme'), [7] that since 2001 has consistently fuelled research, publications and the sharing of good practices in this domain. The Programme has prompted, among other things, the adoption in 2007 of the *Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance*, a soft-law instrument that has inspired domestic legislation in many Countries worldwide. Along with other humanitarian NGOs, the Red Cross and Red Crescent Federation has launched in 1997 and subsequently maintained and enhanced the SPHERE project, providing guidelines and evidence-based advice on how to bring humanitarian help in an ethically sound and victim-oriented fashion (Sphere Project 2011).

Compensation, rebuilding and resettlement are aspects of the recovery phase of a disaster. They are clearly connected with the way relief was

[7] Information at http://www.ifrc.org/en/what-we-do/disaster-law/.

provided, as timeliness and effectiveness of previous measures necessarily condition the way disaster-affected individuals and communities may receive redress. Rules and practices in this domain influence the whole cycle of the crisis, not only because the way reparations, rebuilding or resettlement are handled may condition the impact a subsequent emergency may have on the same community or territory; but also, because the prospective post-event scenarios may influence retroactively on the way civil protection actions are carried out during the relief delivery (response) phase.

1.4. IDRL and Human Rights. The ILC Draft Articles on the Protection of Persons in the Event of Disasters

Among the natural disaster issues that international law has addressed, it is worth mentioning the human rights dimension of disaster response operations.

As said above, a disaster scenario necessarily involves human rights deprivations and creates material and socio-political conditions likely to trigger further human rights violations, including by exacerbating the weaknesses of the most vulnerable sections of a society. Human rights instruments have not articulated in detail their applicability in the context of emergencies, including natural and man-made disasters. Nevertheless, international practice and case law corroborate the idea that human rights are relevant entitlements in such circumstances.

Legal grounds for framing protection from natural disasters as a human right can be found in some conventions and declarations where reference is made to 'the right to a standard of living adequate for the health and well-being of [an individual] and of his [*sic*] family […] and the right to security […] *in circumstances beyond his control*' (art. 25 of the *Universal Declaration of Human Rights*, emphasis added). It may be assumed that such 'circumstances beyond control' of the individual include natural disasters. A reference to the right to a special protection in case of emergency can be found in art. 22 of the *Convention on the Rights of the Child*, where refugee children are entitled to the right to receive humanitarian assistance and protection, especially if separated from the family. The *Convention on the Rights of Persons with Disabilities* has set forth a more focused language. Art. 11 provides that:

'States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.'

The treaty that maybe most explicitly recognises the human right to receive assistance when in distress is the *African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention)*, adopted in 2009 and entered into force in 2012, stating that:

'[a]ll persons have a right to be protected against arbitrary displacement', including when forced evacuations are caused by 'natural or human made disasters or other causes if the evacuations are not required by the safety and health of those affected' (art. 4.4 and letter f).

The same Convention adds that internally displaced persons have the right 'to peacefully request or seek protection and assistance, in accordance with relevant national and international laws, a right for which they shall not be persecuted, prosecuted or punished' (art. 5.9, emphases added).

The UN International Law Commission in 2007 started a study project aimed at better articulating the relationship between public safety and international standards on human rights and humanitarian action, including refugee and internally displaced persons' assistance. The study, still in progress, concerns the progressive codification of international law standards on protection of persons in the event of natural or man-caused disasters.

The focus on human rights in the ILC Draft Articles on Protection of Persons in the Event of Disaster (DAPPED) is apparent since in the title. The word 'protection', however is revealing of the double-edged nature of the Draft Articles. On one hand they are intended to 'facilitate an adequate and effective response to disasters that meets the *essential needs* of the persons concerned'; on the other, they aim at granting the '*full respect for [the] rights'* of the affected persons (art. 2 DAPPED, emphases added). 'Rights' and 'needs' are therefore equally relevant in the approach to disaster relief endorsed by the ILC. Similarly, the equal relevance of both a 'technical' and 'social' approach to catastrophes characterises the definition of 'disaster': ' "[d] isaster" means a calamitous event or series of events resulting in widespread loss of life, great human suffering and distress, or large-scale material or environmental damage, thereby seriously disrupting the functioning of society' (art. 3). The principles of human dignity and human rights are the object of arts. 5 and 6 DAPPED: the 'inherent dignity of the human person' is to be respected and protected by all relief actors, and '[p]ersons affected by disasters are entitled to respect for their human rights.' 'Dignity' is seen as crucial not only in human rights, but also in humanitarian law. Human rights are referred to as encompassing all legal regimes applicable to any disaster situations. They include therefore the corresponding obligations on states and on any other entities that concur to the disaster response, according to the conventions the concerned states have ratified, the legislation they have enacted, the restrictions or derogations that might apply, the responsibilities

of international organisations or of non-governmental entities, (such as the Red Cross and Red Crescent, enjoying a specific international competence in this domain). As regards humanitarian principles, those are summarised in 'humanity, neutrality and impartiality', to which are added the principle of non-discrimination and a mandate to take into account 'the needs of the particularly vulnerable' (art. 7 DAPPED).

The fundamental provision of the DAPPED is the duty to cooperate in case of a disaster:

'States shall, as appropriate, cooperate among themselves, and with the United Nations and other competent intergovernmental organizations, the International Federation of the Red Cross and Red Crescent Societies and the International Committee of the Red Cross, and with relevant non-governmental organizations.'

Other obligations codified in the Draft Articles are the duty to reduce the risk of disaster through measures aimed at preventing, mitigating and preparing for disasters (art. 11 DAPPED); the duty of the affected state to protect persons in its territory (art. 12 DAPPED) and to seek external assistance, in case the situation exceeds its response capacity (art. 13 DAPPED). A key provision is then art. 14, establishing that '[t]he provision of external assistance requires the consent of the affected State'; the consent can be made conditional (art. 15). Reciprocally, 'States, the United Nations, and other competent intergovernmental organizations have the right to offer assistance to the affected state. Relevant non-governmental organizations may also offer assistance to the affected state' (art. 16 DAPPED). Once the consent is granted, the affected state shall not withhold it arbitrarily and has the duty to facilitate the delivering of assistance and protect the relief personnel provided by the assisting state (arts. 17-18).

The Draft Articles codify a number of norms scattered in treaties and soft law instruments, seeking to draw a reasonable compromise between progressive development of international law and instances more inclined to defending state sovereignty. Despite the emphasis placed on human dignity and human rights, however, as noticed above, the ILC fell short from affirming a right of affected persons to receive assistance in case of disaster. On the actual crystallisation of such a right in international law there is little consent. In light of the trend illustrated above and leading to a human rights-based approach to humanitarian action, it might be maintained that humanitarian assistance from any competent actors, including foreign states, international organisations and non-governmental humanitarian organisations, is a crucial enabler for a range of human rights, from the right to life to the right to food, shelter, housing, etc. A right to seek and receive humanitarian assistance is therefore complementary to all these human rights.

1.5. Accountability for Disaster Management in European and Italian Case Law

The jurisprudence of the ECtHR has tackled the balancing of civil protection emergency services against individual human rights. The most relevant case in this connection is *Budayeva and Others v. Russia* (nos. 15339/02, 21166/02, 20058/02, 11673/02 and 15343/02, ECHR 2008).

The facts took place in the Russian city of Tyrnauz, situated in an area where mudslides were frequent since the 1930s. In 2000 a particularly destructive mudslide killed eight persons, including the husband of Ms Budayeva, and injured the other applicants. A monetary compensation scheme and a relocation programme for those families that had lost their homes and all their belonging was set up, but the new houses were in extremely bad conditions and caused a serious deterioration of the applicants' health, and the lump sum provided proved to be inadequate. The local prosecutor decided not to start any criminal investigation over either the disaster or the death of the husband of Ms Budayeva. Civil claims brought against the authorities were dismissed on the grounds that the risk of the mudslide in the area was well known and that all reasonable measures had been taken to mitigate it. This position was also defended by the state before the ECtHR, maintaining that the mudslide of 2000 was unpredictable in its particularly devastating unfolding and that the applicants on the occasion of the catastrophic event did not behave in accordance with the instructions given by civil protection officers. The applicants, for their part, accused the state authorities of ignoring specific warning issued by a specialised agency since 1999, and of having failed for many years to make essential repairs and to implement a proper early-warning system. As a result, the Court found Russia in breach of art. 2 ECHR (right to life) and art. 1 of Protocol No. 1 (right to the peaceful enjoyment of one's property).

The case is interesting as an example of how human rights obligations require states to implement positive measures of civil protection – risk prevention, mitigation, effective relief and reparation – as well as procedural measures, aimed at ascertaining in an independent and effective way any criminal responsibility or civil liability for the death or injuries suffered by the claimants and their relatives. In particular, the responsibility of the state authorities for failing to take the legislative, administrative and technical measures that were reasonably likely to mitigate the risk and reduce the harm caused by the natural disaster had never been tackled. As a result, the right to life was seriously jeopardised. As for the right to property, instead, the Strasbourg Court found that the house compensation offered by the state to those families that had their homes destroyed was not manifestly disproportionate and therefore concluded for a non-breach decision.

The adoption of a human rights approach to civil protection matters necessarily implies at any stage of the disaster response a requirement of awareness of the importance of the victims' right to an effective remedy – that is to have their case heard before a court or an equally effective body – and to reparation – that is to a redress in form of restitution, compensation, rehabilitation, satisfaction, and/or guarantee of non-repetition. This right – that is arguably a non-derogable one, at least as far as it is necessary to guarantee substantial non-derogable rights (right to life, protection from torture, etc.) – is enshrined in all major human rights agreements (e.g.. art. 2.3 of the International Covenant on Civil and Political Rights, art. 13 ECHR, art. 47 EU Charter of fundamental rights, etc). The importance of accompanying life-saving measures of humanitarian nature with dignity-saving actions based on considerations of justice, equality, non-discrimination, can hardly be overestimated and is a cornerstone of a human rights approach to disaster management.

In some recent case law, the avenue of criminal prosecution has also been tested. Reference is made to the judgment of an Italian court that in 2013 sentenced for manslaughter six scientists and a civil protection officer (Alemanno and Lauta 2014; Lauta 2014). They were members of the Major Risks National Committee, a body of the Italian civil protection system, allegedly responsible of having downplayed in their public statements the risk of a strong earthquake affecting Central Italy within short time, so inducing the population of the city of L'Aquila to suspend some life-saving habits they had been observing, like for instance leaving home at any earth tremor above a given threshold. When, on April 6, 2009, a few days after the accused persons released to the media some reassuring interviews (March 31), a devastating earthquake of 6.3 magnitude actually stroke the city, killing 309 and almost completely destroying the old town, the suspect was raised that the death toll was so high also because of the Committee members' gross negligence in evaluating the risk and in conveying to the general public the message that the risk of major earthquake was diminishing. In 2011 the Prosecutor of L'Aquila issued an indictment against the seven members of the Committee who met and made public statements on March 31, charging them with the death of a certain number of victims of the seism who, according to some evidentiary elements, failed to abandon their houses despite the obvious risk, and died at the collapse of their homes. The judgment of first instance found that the incautious behaviour of the victims (especially considering that a swarm of low-intensity earthquakes had been shaking the area for months) was due to the reassurances provided by the media quoting the Committee's members.

The trial court eventually sentenced the seven defendants for manslaughter.[8] In the appeals, the six scientists were acquitted.[9] It was demonstrated that their statements had only concerned the scientific aspects of the issue and could not be interpreted as conveying any instructions to the population concerning how to face the seismic risk. The civil protection officer instead – the highest representative of the National Department of Civil Protection at that time in the area – was found guilty and the Presidency of the Council of Ministry – from which the Civil Protection Department depends – was condemned to pay compensations to 13 victims. The Court found that in the statements he delivered to the media, the defendant contravened the professional standards that civil protection officers have to observe in their activities of risk prevention and protection. Communication to the public is indeed a risk prevention task. Finally, the Cassation Court endorsed the Appeals judgment,[10] arguing, among other things, that the capacity of disaster response officers to condition the behaviour of citizens addressed through institutional communication, including press conferences, is confirmed by the language of the Italian law on Civil Protection, which lists 'information to the population' among the 'non-structural means' of disaster prevention. Negligence in performing communication tasks may therefore causally link (as a form of psychological causality) the officer's fault and the death of those individuals who omitted to take prudential measures in the eve of an earthquake, based on the reassurances of an authoritative source.

The L'Aquila case illustrates not only the role that the judiciary – including criminal investigations – may play in connection with natural disasters in safeguarding the rights of individuals *vis-à-vis* the negligence of disaster response officers, and thus the importance of accountability in this domain; but also the key relevance of communications to the public in disaster prevention and mitigation. It also evokes the issue of compensations that accompany findings of criminal liability and more generally the problem of effective redress for victims.

An obvious problem arises when a State, ravaged by a disaster, cannot reasonably provide meaningful avenues of redress to its nationals who are victims of the event. Foreign states and /or the international community are not of help. As it has been pointed out,

'[c]laiming a right to be guaranteed by the international community is nonsense according to present-day international law. Individuals may have

[8] Trib. dell'Aquila, 22 ottobre 2012, Barberi e a., Giud. Billi.

[9] Corte d'Appello dell'Aquila, sent. 10 novembre 2014 (dep. 6 febbraio 2015), n. 3317, Pres. Francabandera, imp. Barberi e a.

[10] Cass., sez. IV, sent. 19 novembre 2015, n. 12478/16, Pres. Izzo, Rel. Dovere e Dell'Utri, P.G. in proc. Barberi e a.

a right vis-à-vis their own State, but they are merely beneficiaries of external aid. At present, the international community does not guarantee any right which an individual may claim from a foreign State, unless a specific set of rules has been established'.

European states are generally able to provide for the needs of most of their nationals who are victims of natural disaster, and have institutional and economic resources to provide them remedy and reparations, be it through tort litigation, government aid or private insurance schemes (Bruggeman 2010). For this reason, provisions like those set forth in the EU Treaty, that connect disaster relief actions to solidarity, and potentially extend solidarity also to third countries (see below), represent a valuable, principled and pragmatic response to the challenge posed by IDRL.

2. Human Rights, Disaster Management and 'Digital Humanitarianism'

From the analysis above it can be inferred that disaster management is an activity infused with humanitarian and human rights values and that should honour the dignity of human beings in all phases of its deployment. As observed, however, a more 'technocratic' approach to disaster response is also emerging (the same can be maintained for humanitarian aid and human rights activism, advocacy and litigation, of course). This trend has been induced in recent times by the massive incursion into disaster management of smart technologies, and specifically information and communication technologies (ICT).

Humanitarian work and disaster response is more and more affected by ICT, social computing and 'big data'. Such technologies are increasingly seen as crucial not only in post-disaster scenarios as a tool to assess the effectiveness of emergency interventions and therefore improve preparedness and design risk-reduction and mitigation strategies for the future (Kryvasheyeu et al. 2016), but also before a disaster, as early-warning instruments, and during a disaster to collect, process and dispatch real-time information and thereby influence how humanitarian operations are managed and affect the outcome of disaster management actions.

ICT, in particular, plays a key role in framing the overall discourse concerning natural disasters and emergency, and in creating the context in which disaster response activities, from early-warning to post-crisis measures, are carried out. The way a specific disaster situation is displayed in computer screens or on TV, captured in satellite images or reproduced through the social media, is crucial for the unfolding of civil protection operations, for the social appraisal of the events, for shaping the post-

disaster phases, and for the overall aftermath and the legacy of a crisis. As it has been said,

'ICT is often seen as a key element in improving sense-making before, during, and after crises. However, it is important to realise that although technology can greatly leverage capability, it can also be associated with various forms of vulnerability, the distraction of leaders away from their core role, and constitute a serious threat to privacy, civil liberties and trust.' (OECD 2015).

A wave of 'digital humanitarianism' has invested the world of the humanitarians, including in monitoring IHL violations and 'crisis mapping' (Hersberg and Steinberg 2012). The risk is that the 'thick', context-based, socially embedded actuality of the 'real humanitarian work (and the complex legal context of a conflict) is overlooked and replaced by an oversimplified narrative. In the case of natural disasters, such narrative often features the smart 'digital volunteers' as the main players, with virtually infinite computing capacity at their disposal, potentially capable of solving any problem basically 'for free', as opposed to a wasted mass of *victims*, who can gain some relevance only by connecting to the web, turning into data producers or at least data-subjects that the digital hero can interrogate to predict how things will transform.

This narrative stresses the lack of knowledge and intrinsic operational limits of traditional disaster management agencies. As it was noticed,

'this configuration obscures the funding, resource, and skills constraints causing imperfect humanitarian response, instead positing volunteered labor as "the solution." This subjectivity formation carves a space in which digital humanitarians are necessary for effective humanitarian activities [...] Within digital humanitarianism, the epistemologies privileged by Big Data are often data-centric and focused on correlations, rather than epistemologies highlighting qualitative understanding, communal and situated lay knowledges, and connections with social theory.' (Burns 2014).

The technological revolution that is investing all sectors of economic and social life has reached also the domain of humanitarian action. Indeed, this domain was one of the first to be affected by the digital shift, although with huge diversities from one area to another, from one operative field to another. In the last couple of decades, a 'new humanitarianism' (Terry 2002) rhetoric has fostered the idea that technology, 'big data', and the market are the key elements for success in humanitarian action and disaster response. A giant digital divide exists between the technological capacities of the most modern structures of civil protection in some Western states – or more precisely in some developed areas of such states – and the ICT tools that disaster responders can access in remote areas of some of the least developed

countries. Despite the apparent disparity in resources stressed by the 'new humanitarian' narrative, however, the gap between old and new forms of disaster response is not necessarily so stark.

In particular, the emphasis put on the availability of ICT or other technological equipment and the scant consideration sometimes given to the institutional and legal landscape in which the disaster response activities take place, and to the human rights frame thereof, may turn out as detrimental in the medium-long term to the effectiveness of the most high-tech civil protection operations. Controversial phenomena of 'dataveillance' (Hu 2015) (as reproducing the infamous policies of mass surveillance allegedly required as a response to the global terrorism) are taking place in many fields, not only in intelligence and counterintelligence; with vast implications in terms of legality and threat to the democratic institutions (Rubinstein et al. 2014).

Within the domain of 'digital humanitarianism', a recent trend has developed that tries to take stock of such legal and ethical pitfalls and link ICT and the 'traditional' disaster management, namely by facilitating the access of civil protection officers to 'selected big data', and making the latter's use conditioned by contextual analyses provided by institutional actors, instead of imposing a ICT-driven epistemology.

In the US and in Europe, software systems and prototypes are being developed to collect and process texts, images, video and other data circulating in formal and social media, including web-based social network services, to distil information that civil protection agencies may use to aid natural disaster response decision making. Social media (YouTube and others) and social networks (Twitter and Facebook in particular) have been hugely used in connection with emergencies of all kinds, including natural disasters (Houston et al. 2014). Social computing devices have been engineered so as to respect, among others, privacy/data protection and copyrights regulations, and 'mine' social media and social network platforms to extract only those data that are *prima facie* relevant for civil protection officers. Disaster response officers then, in accordance with their best practices and of the social and legal environment, may use ICT (social media, but also satellite images, etc.) in conjunction with any other more 'traditional' context-sensitive technologies for monitoring the territory. In this way, internet-based data do not disband data not produced by the Web (Ahmad and Vogel 2014).

This development is to be viewed positively. Any detachment from an alienating vision of social computing that restitutes to communities and institutional disaster responders capacity, legitimacy, and accountability, positively contributes to build a human rights-based approach to civil

protection. Considering the increasing socio-political relevance of disaster response and emergency actors, an epistemological paradigm driven by Big Data and Internet-based research could bring about a disproportionate deprivation of local communities and local actors of knowledge and power in a decisive dimension of any society, culture and body politic (Mulder et al. 2016).

3. Some Implications for a Web Crawling Software

In the light of the above, some considerations can be drawn at the intersection between humanitarian and disaster response on the one hand, and the objectives of any project that aims at using big data, and namely data generated by social media and social networks, to improve civil protection response in case of natural or man-made disasters.

At the outset, it is important to underline the need to conceive of social computing as an innovative tool integrated into the system of civil protection of the respective national and (in the EU case) supra-national legal framework.[11] This implies that the whole range of legal and institutional dimensions that characterise such systems are fully and explicitly embedded in the software's design. As suggested above, a clear integration of technological devices within the thick and dense societal and institutional reality in which they are deployed is not a weakness, but a recipe for a more socially accepted and effective use in the medium to long run.

This requires a high level of sophistication and flexibility in the design of the software to grant interoperability and adaptability to the various components of a multi-layered and multi-actor system of civil protection. It requires also a careful preliminary analysis of the legal and regulatory environment in which the prototype is going to be used. As initially indicated, special features concerning the right to privacy and data protection, copyright and internet regulations are not within the scope of the present study. In

[11] The EU has a relatively long history of engaging in disaster response activities, both within the borders of its Member States, as an instance of coordination among the national civil protection systems, and with third countries in the context of humanitarian aid activities. The internal and external dimensions of the civil protection initiatives of the EU have been undergirded by the common ideal of solidarity (cf. Treaty on the Functioning of the EU – TFEU, arts. 6, 122, 222, and especially art. 196). As far as disaster management is concerned, the main reference is the EU Civil Protection Mechanism (UCPM), currently regulated by Decision 1313/2013 of the European Parliament and of the Council, of 17 December 2013. This solidarity claim however is somehow detached from the human rights dimension. Human rights do not feature prominently in the instruments concerning the UCPM, nor in the recent Council Regulation 2016/369 of 15 March 2016 on the provision of emergency support within the Union, which mostly stresses the humanitarian needs of disaster-stricken people.

this paper, the focus is on general provisions concerning human rights guarantees and humanitarian principles and on the implications that those norms and principles may have on the software design, as a contribution to build a normative framework of guidelines that embodies human rights and humanitarian concerns. In the last paragraphs, some considerations are submitted to frame the disaster management in an era of ICT and social computing in a form that valorises human rights. The key concepts here are: dignity (of individuals and communities); transparency (also a trust-building tool), and accountability, which may include also in some cases the liability of civil protection agents.

3.1. Human Dignity

Internet crawling software is meant to enhance the capacity of civil protection officers to respond to natural disasters. It is also a technology that allows people who are victims or potentially affected by disasters to share data and information and therefore contribute to the general humanitarian efforts. Inasmuch as the privacy and the personal data of individuals are not jeopardised, this form of agency that ICT-based systems assign to the individual, including people in distress, is likely to promote a sense of membership in a community, an ethic of solidarity, ownership and responsibility and ultimately human dignity. All of these elements are components of a human rights based approach to disaster response operations and are compatible with the principles of humanitarian action.

3.2. Transparency and Trust – Information and Access to Information about Risks

It is a specific responsibility of disaster management authorities, as part of risk prevention and mitigation action, to inform the public about the risks connected to old and new vulnerabilities of the territory and of the environment. A social computing device, as a component of a broader system that integrates various sources of information and datasets, should increase the quantity and – more importantly – the quality of information at the disposal not only of the disaster managers, but also of the general public. A wider and more reliable set of data has the potential to support finely tailored training activities, facilitate the sharing of good practices along the layers of the multi-level governance of civil protection policies. Interoperability between national systems could also be facilitated by providing since the outset a multi-lingual platform.

3.3. Liability for Human Rights Infringements

One of the most relevant means to avoid the pitfalls of digital humanitarianism is the importance for civil protection managers of having a clear idea of the nature of the web of legal obligations and opportunities in which they operate as disaster response officers. The stress here is put on 'opportunities'. The reference to the principles and norms of humanitarian law, human rights law and international disaster law is to be taken as a fresh opportunity to reassess the place of civil protection agencies in the current global debate on old and new risks connected to the natural environment, and to reframe the formerly narrowly-construed approach to the legal dimension of humanitarian work.

Legal awareness also enables realisation that individuals and organisations – including the state – can be held accountable for failing to appropriately respect and implement such standards – since standards correspond to rights. Although international case law concerning violations of European or global human rights standards in direct connection with civil protection actions or omissions is quite scant – as most litigations or prosecutions are understandably carried out at the state level – the principle of accountability is a natural counterpart to the right to an effective remedy and to reparation for breaches of human rights. The jurisprudence of the ECtHR has accordingly argued based on the right to life, violated under many aspects by state negligence in undertaking suitable risk mitigation or offering civil or penal procedures to provide remedy and reparation. Other cases may find violations of the right to personal data protection or to intellectual property. Violations of fundamental rights in natural disasters however are unlikely to be effectively handled by an international court. An international body like the ECtHR can only ascertain the international liability of the State, with a very limited capacity of granting proper damages to the victims (eventually they are only entitled to a 'just satisfaction'). Given the characteristics of the EU legal system, the CJEU is not the most plausible instance where civil protection cases will be heard, as the competence of the EU in this field is only complementary. National legal systems have the task of assessing the liability of the civil protection structure and officers, under torts law or based on criminal charges. In this connection, an important case that marked the recent Italian jurisprudence has been the one concerning the earthquake in L'Aquila, discussed above. Significantly, the criminal liability of the civil protection officer and the responsibility for damage of the national civil protection structure stemmed from negligence in delivering information to the public. The capacity of handling communication tools has proved to be critical in risk prevention and disaster response.

Conclusions

In this paper, the legal framework supporting a human rights-based approach to civil protection activities has been illustrated, with the aim of providing a sound normative and institutional context within which to locate the activity of social media data harvesting performed by an automatic web-based system (social computing).

The main findings that have been reached concern, first, the importance of fully integrating such software into the institutional and legal architecture of the civil protection structures at the local, national, European and international levels. Secondly, the analysis demonstrated that the dignity of the human person is a consensual principle underpinning the various legal regimes that are involved in framing civil protection functions. A web harvesting software should be consistent with such an approach, namely in stimulating the agency of individuals, including people affected by disasters and disaster response officers, avoiding the risks associated with a de-contextualised, purely Internet-driven data treatment methodology. Thirdly, transparency and locally appreciable effectiveness in processing quantitative and qualitative data is a key component of a civil protection system and web-based software is supposed to enhance this attitude. Finally, the analysis evidenced that ethical and legal awareness by the civil protection officers reflects the embodiment in the disaster response system of a genuine human rights based approach to the delivery of humanitarian assistance.

In conclusion, it can be safely maintained that in the general framework of a human rights-sensitive understanding of civil protection and disaster response management, and keeping in mind the implicit flaws of 'digital humanitarianism', sound arguments can be found in support of testing and eventually implementing data harvesting software systems likely to meet the criteria of respect for human dignity, transparency and accountability as illustrated. Moreover, a context-specific analysis is required to carefully test the legal and ethical legitimacy of social computing in disaster response, namely as regards of the right to privacy and data protection and intellectual property rights.

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