Recovering "faith in Humanity": data, content and information curation in confronting violence against women - a preliminary essay

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CHAPTER 4

RECOVERING "FAITH IN HUMANITY": DATA, CONTENT AND INFORMATION CURATION IN CONFRONTING VIOLENCE AGAINST WOMEN - A PRELIMINARY ESSAY*

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ABSTRACT

Violence against women is a multidimensional and interdisciplinary phenomenon. The sources for its study are dispersed, partial, incomplete, or kept in outdated databases, lacking uniformity in indexing. Corrective measures imply designing search, retrieval and sharing strategies, involving process of discovering information, for its selection and monitoring in the field. What public safety data curation strategies will be effective in facing this problem? In response, studies and initiatives are identified over a period of 15 years. The results suggest the relevance of early victim's identification and activation of preventive protocols, using artificial intelligence and machine learning, jointly with the integration, organization and coordination of data

and activities. Future studies should deepen the discussion in transparency in data opening and data governance. As a limitation, the invisibility or dispersion of scientific literature, which constrains its discovery is reported.

Keywords: violence against women, data curation, artificial intelligence, prevention measures, public security information.

RESUMEN

La violencia contra la mujer es un fenómeno multidimensional e interdisciplinar. Las fuentes para su estudio se encuentran dispersas o en bases de datos parciales, incompletas o desactualizadas y carecen de uniformidad en la indexación. Las medidas correctivas implican diseñar estrategias de búsqueda, de recuperación y de intercambio, involucrando procedimientos de localización de la información, para su selección y seguimiento en campo. ¿Qué estrategias de curación de datos de seguridad pública serán útiles para afrontar este problema? En respuesta, se identifican estudios e iniciativas en un periodo de 15 años. Los resultados demuestran la relevancia de la identificación prematura de víctimas y la activación de protocolos preventivos, empleando inteligencia artificial y aprendizaje de máquina, junto con la integración, la organización y coordinación de datos y actividades. Los estudios futuros deben profundizar el debate sobre la transparencia en la apertura y gobernanza de datos. Como limitación, la invisibilidad y dispersión temática de la literatura científica, lo que perjudica su descubrimiento.

Palabras clave: violencia contra la mujer, curación de datos, inteligencia artificial, medidas preventivas; información de seguridad pública.

Humanity is losing faith in the liberal narrative that has dominated global politics in the recent decades, precisely when the fusion of biotechnology and information technology confronts us with the greatest challenges humanity has ever faced.

Yuval Noah Harari, 2018, p. 18, our translation

INITIAL CONSIDERATIONS

Addressing the issue of violence against women is a huge challenge. It is a rhizomatic historical phenomenon[1], with multidimensional roots involving social, cultural, and political aspects, among others, which demand an appropriation of polysemic concepts and an effort towards a "slippery" theme, covered by great complexity, demanding an equally complex and interdisciplinary approach, capable of providing a critical and integral understanding of its surrounding parts.

From a historical point of view, Carneiro (2020, p. 22, our translation) recalls that "[...] there is a structure that creates, feeds and maintains violence against women as an ever-present phenomenon". This structure has its pillars based on the Patriarchy, which establishes the division between men and women, assigns behavioral characteristics and specific social roles to each gender and ranks these same characteristics and roles, establishing, as a norm, the preponderance of men over women. Consequently, in Studart's words (1983, p. 42), "[...] everywhere, women are second-class citizens".

As for the availability of reliable and necessary sources for the development of studies on the subject, we verify dispersion of data and scientific and technological information, which only broadens the gap and inhibits facing the issue. The dispersion also contributes to making the construction of solutions aimed at prevention unfeasible, both in the technical field and in the sphere of public policies, whose development is not only pertinent but also fundamental for the

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1   In Gilles Deleuze and Felix Guattari's conception. For a deeper understanding of the subject, we recommend consulting: DELEUZE, G.; GUATTARI, F. Mille plateaux: capitalisme et schizophrénie. Paris: Editions of Minuit, 1980.

transformative and liberating advance for providing a change of the status quo.

The whole issue, which has to do with the existence of dispersed, partial, incomplete, and outdated databases, as we said, leads to an excessive differentiation of the categories used in indexing the elements constituting the core of the problem. In this sense, this dispersion and multiplicity of sources of scientific and technological information found on the subject, prevent the development of research groups to approach this theme; the situation described here is even more serious when the approaches are developed in multidisciplinary or interdisciplinary fields, precisely the case of violence against women as a research theme.

Considering the profile of the researchers interested in these research data is also necessary. In general, researchers and professors are more guided by formal channels (articles, papers, conferences, preprints, among others), while technicians, administrators and other agents of the civil society prefer informal channels; as they are faster, they appear to be more effective in solving immediate problems related to their information gaps and, for that very reason, generate sprints of action, increasing their performance.

In the academic environments, however, the problem of (non) integration of databases and information to be disseminated through formal and informal channels and intended to support decision-making remain an already "classic" problem. It is assumed in an interdisciplinary way and becomes critical, especially when interest turns to the search for bibliographic references, aiming at selecting them and composing literature reviews that may be at the origin of scientific works of varying magnitude, presented in prestigious vehicles for scientific dissemination and targeted at a specialized public interested in updating their knowledge.

On top of this problem is the fact that new and more complex scientific databases and information sources of different nature are published all the time and in real time, which, on the one hand address the topic, but on the other, they are not necessarily indexed and may be made available in places other than those normally used or within the reach of scholars. Hence the invisibility of this produced knowledge.

Along with the scientific literature, products, materials, processes, and good practices that may be relevant to the subject are produced, but due to the lack of monitoring, they can contribute to the unwanted failure of researchers, funders, public agents, and social organizations of civil society in tackling the issue.

The challenge posed to the integration of databases and information implies the design of search, retrieval and sharing strategies, and involves the use of a set of procedures and technological mechanisms capable of locating information and enabling its selection and monitoring so that the evolution of the theme and the interaction across researchers in the field of investigation can be followed.

Another posed challenge concerns the need to provide long-term management of selected data and information due to its usefulness and potential in promoting interaction between groups of researchers focused on the subjects in question.

In a scenario such as the one outlined above, the following questions immediately arise: what would be the definitions and contours wrapped in the aura of the theme violence against women? How to support the selection and monitor the development, updating and sharing of data and information in the field of violence against women? What strategies or potentialities are envisaged in the scope of data and/or information curation, and in what way could they be useful or effective in the study and deepening of this theme? What role do data, content and information about women play in the development of digital curation on the topic of public safety? Given its relevance and evident complexity and centrality, answering these questions, even if in a preliminary way, becomes the specific objective of this text.

As constituent parts of the problem and in the role of researchers who are active and deeply concerned with – and impacted by – these questions, we intend to see them answered, even if in a preliminary way. The conceptual framework thus begins with the identification of national studies and initiatives and extends to some international approaches. The selected texts are consistent with the last 15 years, with some exceptions for the use of older texts, admitting their relevance to the present topics. The main objective is to systematize some knowledge and shed light on the subject, with a view to their better understanding and study.

1 BASIC CATEGORICAL ELEMENTS ON DOMESTIC AND FAMILY VIOLENCE AGAINST WOMEN

Initially, it is worth highlighting the difference between sex and gender. This is provided by Harari (2020). For the author, conventionally, the first term ("sex") is a biological category, which refers to a set of objective and constant characteristics over time, which differentiate female human beings from male human beings. The second term ("gender"), the author continues (Harari, 2020), refers to a cultural category, constructed intersubjectively, marked by geographical, historical, political, religious, and social particularities and by transformations undergone in its conception over time. Thus, based on gender as a specific difference, a distinction is established between human beings, mainly as men or women, with the possibility of including other categories. According to the different conceptions pointed out by Harari (2020), Table 1 illustrates the distinctive categories of the female sex and the gender woman, considering their constancy or transformation over time.

Table 1: Differences in conceptions between sex (female) and gender (woman)

Female sex individual = Biological category		Woman = cultural category	
Classical Athens	**Modern Athens**	**Classical Athens**	**Modern Athens**
XX Chromosomes	XX Chromosomes	Cannot vote	Can vote
Uterus	Uterus	Cannot be a judge	Can be a judge
Ovary	Ovary	Cannot have a public job	Can have a public job
Low testosterone	Low testosterone	Cannot choose a partner to marry	Can choose a partner to marry

Female sex individual = Biological category		Woman = cultural category	
Classical Athens	**Modern Athens**	**Classical Athens**	**Modern Athens**
High estrogen	High estrogen	Typically illiterate	Typically literate
Can produce milk	Can produce milk	Is legally owned by father or husband	Is legally independent
Exactly the same		Completely different	

Source: Harari (2020, p. 206, our translation).

Thus, the hierarchy and asymmetry of powers and possibilities between genders advocated by the Patriarchate (Carneiro, 2020, p. 22), which establishes the division between the sexes and assigns behavioral characteristics and specific social roles, is grounded on the bases from which unequal relationships between men and women develop, thus contributing to creating, perpetuating, updating, and justifying the different forms of violence exercised against women in families and in society.

As explained by Harari (2020, p. 207, our translation), "[...] at least since the Agricultural Revolution, most human societies have been patriarchal societies that value men more than women". Since then, and until now, this has been a stable and universal social norm based "[...] on unfounded myths and not on biological facts" (Harari, 2020, p. 219, our translation).

As Carneiro (2020) recalls, this ideological apparatus, which comes from the patriarchal structure and which places women in a situation of vulnerability, is maintained and guaranteed by culture, traditions, and the legal and institutional apparatus. In this context, violence emerges as a way of exercising power – of men – over women.

Unlike other groups, targets of violence, it is noteworthy that violence against women occurs mainly in domestic and family contexts and in intimate relationships of affection, which means that between the woman in a situation of violence and her aggressor (here personified in man) there are ties of kinship and affection, which grants greater

complexity to the problem and greater challenges to be tackled.

       According to Walker (1979 apud Conselho Federal de Psicologia (CFP) [Brazil], 2013, p. 106), domestic violence is cyclical and occurs in three successive phases: tension, explosion, and honeymoon. For the CFP (2013), one of the reasons that reinforce the maintenance of this cycle of violent relationship is the promises of change made by the aggressor (in this case, the man) and the desire for this change to actually occur, expressed by the woman. These phases can have different durations and intensities, depending on the case, and the time it takes for each woman to realize the seriousness and the physical, psychological, and emotional damages of this violent relationship is also very variable, and can take months, years or never occur. From this perspective and considering that each situation has contours and is of unique complexity, a rigid model is impossible to be fitted, therefore, the CFP adapted the cycle of violence proposed by Walker, in 1979, and added a fourth stage – "Repent and promise of change" – as shown below (Figure 1).

Figure 1: The vicious circle of domestic violence against women

Source: adapted from CFP (2013, p. 106, our translation).

In the Brazilian legal framework, Art. 5 of Maria da Penha Law, Law nº 11.340/2006 (Brasil, 2006, our translation) defines that "[...] domestic and family violence against women is any action or omission based on gender". From this definition, Marques (2020, p. 39, our translation) clarifies that "[...] any action or omission that causes harm to someone" is violence, whether physical -, this one the most recognized form -, sexual, patrimonial, or symbolic. These various types (or nuances) of violence against women are manifested in different contexts in which they are inserted, such as: work, educational, religious, or public; although they are considered particularly (potentially) more dangerous, for reasons that are generally known, all those cases that occur in the domestic and family environment.

Another important aspect to consider in the debate on violence against women is that the risk of violence can be higher or lower, depending on the racial, socioeconomic, educational, and sexual orientation characteristics of these women. Women with more than

one of these characteristics are more vulnerable or exposed and are at greater risk of suffering this type of violence than others.

And in this framework, we find some of the arguments that justify the need to analyze and understand violence against women from the established intersectionality, that is, from a crossing of intervening factors or variables. The studies carried out today based on this intersectionality have their origin in others, which relate gender, race, and class. According to Gomes (2020, p. 84, our translation), intersectionality is a term used to explain "how the power relations that structure society intersect and directly affect the lives of certain groups, placing them at a specific disadvantageous position". From the perspective of this approach, concerning the Brazilian reality, it is understandable why, for example, black women, lesbian women, and poor women are especially considered as targets of violence, which intensifies when this woman is black, lesbian, and poor (coexistence of factors).

Naturally, the term domestic and family violence has a wider range than violence against women, referring to violent acts between people who have affective ties with each other, whether they are related - or not - and who share the same place - or not. Thus, within the framework of domestic and family violence, different groups can be found, such as: children, adolescents, adults, or elderly people, of both sexes.

However, violence against women is highlighted here, not only because it is the focus of this study, but also because it occupies a central place in the experience of this phenomenon, which is understood by the centrality women play in families, which is largely due to the historical, social, and culturally constructed role of caregiver and main responsible for the well-being of the members of the family nucleus. Furthermore, as Marques (2020, p. 43, our translation) states, "when a woman suffers violence, the whole family suffers". In this sense, reflecting on domestic and family violence is, above all, and in the first place, reflecting on violence performed against women.

Thus, and as stated by Veloso (2020, p. 169, our translation), the act of "[...] transforming domestic and family violence into a public issue is part of the historical struggle of women". In this sense, disclosing issues traditionally considered restricted to the private

sphere to the public scene implies showing that domestic and family violence are social problems and that, therefore, society and the State need to recognize and face them in an open and transparent way. This becomes especially relevant as Harari states,

> [...] over the last century, social gender roles have undergone an enormous revolution. Today, societies not only grant men and women equal legal status, political rights, and economic opportunities, but also completely rethink their most elementary conceptions of gender and sexuality. While gender differences are still significant, things are moving fast. (Harari, 2020, p. 218, our translation).

The advances achieved in the scope of gender conceptions and in the confrontation of domestic and family violence, as we said earlier, are historically and socially constructed. For example, regarding the contribution of education to the transformation of society, Pontes (2020, p. 68, our translation) highlights "[...] the importance and responsibility of a dialogical and liberating education so that, in fact, this transformation occurs based on critical sense". Although education is built within the family and other spaces of social interaction, the school is the institution formally constituted for this purpose. Therefore, this space needs to be committed to critical reflection and to changing minds, which includes building a clear perspective on facing the problem. Therefore, as Pontes says, it is up to the school to exercise a

> [...] direct and permanent action with students and their families to build narratives and actions in favor of social justice and forms of prevention and opposition to domestic and family violence against women, adults, adolescents, or children. (Pontes, 2020, p. 68, our translation).

However, the author recognizes that as the school and its agents are immersed in the values spread by the patriarchal society, in which the empowerment of men to the detriment of women is considered "natural" (or intentional), "the current educational model [...], has to do with a colonizing, patriarchal and drilling project, which teaches about obedience and restriction of the body, increasingly distant from

the emancipatory perspective, especially for women" (Pontes, 2020, p. 78, our translation).

Therefore, it is necessary to constantly reinforce "the role of the school as a space for reflection and transformation of society, strengthening the struggle against sexism and patriarchy manifested in violence against women" (Pontes, 2020, p. 78, our translation). Consequently,

> [...] it is through education that the viewpoint of the people involved in the cycle of violence can be broadened in terms of rights, gender, justice, and citizenship. And the school, as the primary locus of knowledge construction, must contribute to the narrative dispute and deconstruction of this naturalization of immutable genres, towards a social reconstruction of gender roles. (Pontes, 2020, p. 70, our translation).

In this context, the role played by the media in the perpetuation or confrontation of domestic and family violence against women is noteworthy. As indicated by Thompson (1998 apud Veloso, 2020, p. 169, our translation) "[...] far from being a mirror of reality, the media acts as an agent in the construction of representations about the world and influences social practices". In this sense, the media and network communication also play a significant role, both in the visibility of the phenomenon of domestic and family violence against women and in the construction of a critical narrative of the phenomenon, questioning socially constructed prejudices and offering a vision that contributes to a more just and egalitarian culture and that provides freedom and respect for all.

In the current scenario, based on the intensive use of social media, on the constant and diversified production of digital content and on the continuous action of prosumers[2], society experiences the challenges of excess or information overload which, among other things,

2   Term coined by Alvin Tofler, in 1980, in the well-known work "The third wave". For a critical appreciation of the term and a more current reading of it, see: LANG, B.; DOLAN, R.; KEMPER,J.; NORTHEY, G. Prosumers in times of crisis: definition, archetypes and implications. **Journal of Service Management***, [s. l.],* v. 32*,* n. 2, p. 176-189, 2020*.* DOI: 10.1108/JOSM-05-2020-0155.

prevents the implementation of the process of identifying sources of quality information. As Carvalho (2020, p. 179, our translation) says "the great challenge in working with information is, more than ever, to select the right information, in suitable time and format for a specific information need". Thus, content curation, especially the one applied within the scope of Social Communication and Education, but not exclusively, can contribute to a critical reflection on the phenomenon of domestic and family violence against women, revealing itself as a promising tool in facing this same problem.

2 THE POTENTIALS OF DIGITAL AND CONTENT CURATION FOR CONFRONTING DOMESTIC AND FAMILY VIOLENCE AGAINST WOMEN
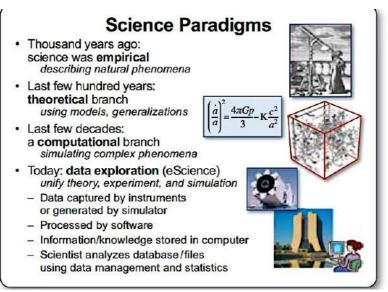
Confronting the problem of domestic and family violence against women is situation in which adequate information offered at the right time so that it can make a difference is increasingly understood as the role and importance of content curation. Evidently, this entire process of searching, selecting, editing, and adding value and quality to the content, especially on digital environments, followed by its sharing, use and reuse, generates direct and indirect benefits for people and society[3].

In the work *The Fourth Paradigm: Data-Intensive Scientific Discovery*, edited by Hey, Tansley and Tolle (2009)[4], the four paradigms were approached from the perspective of its author, Jim Gray, and his considerations on the subject (figure 2).

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3   For an in-depth look at the subject, consult: YILDIRIM, I. E.; & ERGÜT, Ö. Research on the subject of "violence against women": a bibliometric analysis since 2000. **Marmara University Journal of Economic & Administrative Sciences**, [s. l.], v. 38, no. 2, p. 311–333, 2016. Available at: https://doi.org/10.14780/muiibd.281417. Access on: 3 Sept. 2021.

4   This work is dedicated to Jim Gray, who coined the term.

Figure 2 - Science paradigms, from Jim Gray's perspective.

Science Paradigms

- Thousand years ago:
  science was **empirical**
  describing natural phenomena
- Last few hundred years:
  theoretical branch
  using models, generalizations
- Last few decades:
  a **computational** branch
  simulating complex phenomena
- Today: **data exploration** (eScience)
  unify theory, experiment, and simulation
  - Data captured by instruments
    or generated by simulator
  - Processed by software
  - Information/knowledge stored in computer
  - Scientist analyzes database/files
    using data management and statistics

$$\left(\frac{\dot{a}}{a}\right)^2 = \frac{4\pi Gp}{3} - K\frac{c^2}{a^2}$$

Source: Hey, Tansley and Tolle (2009, p. xviii).

In Jim Gray's perspective (2007), cited by Hey, Tansley and Tolle (2009, p. xviii), the four paradigms would be: "empirical branch", "theoretical branch", "computational branch" and "data exploration (eScience)". As seen in figure 2, the four research models proposed at that time are historically marked and outline an evolutionary line. And the focus in current studies, on the so-called "fourth paradigm" – eScience or data science – leads us to reflect on its roots and the place it has been occupying in society.

A little further on, Mayer-Schonbeerger and Cukier (2013) highlighted the role of information and communication technologies in the way science was being done. In their view, among the technological challenges to be faced, in the near future, it would be the need to improve the capture, analysis, modelling, visualization and preservation of scientific information, formal sources of knowledge construction, which would highlight the systems computational tools and their centrality in research processes.

Add the fact that the informal sources can (and should) be

aggregated to generate knowledge which are particularly important in the context of domestic and family violence against women.

In this sense, and as highlighted by Beagrie (2004), a decade and a half ago, digital curation would be increasingly used in actions with a strong potential to add value and make digital information resources available for as long as they were required, as one of its principles.

In the current context, it really appears, although not in a generalized way, as a strategy used to carry out a good data and digital objects management identified as relevant in the access to updated and reliable information on a given subject, comprising the entire data or object life cycle and with a view to their accessibility, in this case, monitoring and preservation are considered inherent aspects of the process.

Beagrie (2004) also mentioned that digital content management, with the consequent preservation, would imply increasingly important processes in the education and research agenda. A large part of knowledge bases and intellectual assets of institutions and collaborators were already (and still are) available on digital environments. Unless significant efforts are made towards digital preservation, ensuring long-term access to these digital resources, uncertainties about archiving would continue (Beagrie, 2004) to prevent the growth and adoption of new services and new work practices. Consequently, the investment to be made in the content digitization would probably not be enough to guarantee anything more than just short- or medium-term benefits, not appropriate to the identified needs[5].

For Higgins (2011), comparatively, in the past, preservation implied, on the one hand, safeguarding access to a relatively small core of face-to-face users and, on the other hand, maintaining document integrity and authenticity. Currently, there is a shift in focus, mirrored in the need to ensure that digital resources are managed throughout their entire life cycle, ensuring their accessibility over time so that they are available for use to whoever needs them.

In addition, the scientific literature on Digital Curation in Brazil has several contributions regarding its theoretical aspects. However,

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5   In the United Kingdom, a workshop held in 1995 by the University of Warwick also explored several strategic issues related to digital preservation, including methods, policies, and practices.

given the pragmatic aspects and the diversity of information sources associated with the complex problem of violence against women, it appears that the traditional use of digital curation (that is, in a scientific and technological sense) is clearly insufficient to cope with the prevention of a phenomenon that involves several agents and informal sources not found in libraries and public archives, such as, for example, those that come from social networks, oral sources, police and public safety information.

Acknowledging the origin of the data to be curated brings the discussion of its production. In the context of the already widely known FAIR Principles (Findable, Accessible, Interoperable, Reusable), it will be necessary to ensure that the ties linking the data to the entities that produce them (people, laboratories, companies, etc.) are not lost over time or a crucial component for their future interpretations will be lost. Thus, the schemas and data plans must include guarantees that clearly go in this direction.

A few years ago, when discussing the contribution that Archival Science could offer to the emerging area of Data Science, more specifically in the context of archiving research data, Fear and Donaldson (2012, p. 320), citing the studies by Vardigan and Whiteman (2007), considered that the principle of provenance, well known in the archival environment, was repeatedly mentioned as descriptive information that should appear in Archival Information Packages (AIP) and be incorporated into the data record metadata to account for its provenance and ensure its accessibility and interpretation in the future, functioning as an added value to the archived data ''by providing enhanced resource discovery and richer comprehension about the data and its provenance'' (Corti, 2007, p. 48 apud Fear; Donaldson, 2012, p. 320). This "enhancement" of the data through information about its provenance was considered a critical factor for improving visibility and facilitating its effective use by researchers and teachers. Fear and Donaldson (2012) identified, as a research gap to be filled in future studies, the need to increase the perception around how information end users interacted with all this information related to the origin of the data they received, claiming that there was little evidence on how they actually used such sources.

It is not difficult to understand the relevance of these issues

related to the origin of the data (one of the requirements associated with the FAIR Principles), in the context of subjects with such a sensitive character and with such evident social relevance in the present, and probably in the future, as the case of violence against women. Increasing the guarantees data can be used by whomever need them is a contemporary imperative and an endorsement to avoid erasing or fading that memory in the future.

From another line of reasoning, mastery and experience in using tools or methods associated with the selection and automated analysis of data appear to be useful. The field of data analysis, whether through data mining or statistical analysis, has received special attention such is the volume and variety of accumulated data, it is difficult to express in quantitative values accumulated in the most diverse areas of knowledge. It is now possible to compare research methods and techniques applied to the discovery of knowledge in databases in different domains (medicine, music, security, law, veterinary and others). The tasks (grouping, classification, and association) and steps (cleansing, selection, transformation, mining, and appraisal) of the knowledge discovery process in databases (Knowledge Discovery in Databases [KDD]) have been widely studied.

Solutions and/or tools can also be assessed and compared depending on their domains. Among these, due to their potential for use or popularity, the following stand out: the Waikato Environment for Knowledge Analysis (WEKA) tool, developed at the University of Waikato (New Zealand). This tool implements a package of quite interesting data mining algorithms for database integration. Other platforms with interest for extracting large volumes of data are Pentaho, Rapidminer and KNIME[6]; and within the scope of standard programming languages, Python and R. Among the various data analysis tools with great potential for use, R Studio and SPSS stand out in statistical analyses. The Atlas.Ti tool, in turn, is an excellent resource if the option falls on the treatment of qualitative data. All this range of tools can bring interesting and fundamental results for the development of a digital curation applied to the problem of confronting violence against women.

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6   The KNIME Analytics platform was proposed in 2004 and launched in 2006 by a team of software engineers from the University of Konstanz. It is an open-source software that includes data wrangling and machine learning techniques based on visual programming.

However, it is worth recalling that information curation can be developed through the analysis of a human specialist who, aided by these tools or computer systems, will be able to extract and interpret information and thus provide a significant and relevant value to a determined audience (Languens García, 2013). The process of adding value naturally appears to be eminently human. In this way, information curation is an activity that must be based on the skills and abilities of information professionals.

However, as it is a relatively new process in several sectors on which national scientific production is scarce, it is still little explored in terms of training professionals in the area at undergraduate and graduate levels. Research around these subjects can also contribute to increasing this knowledge. Consequently, it may have repercussions on improving the skills and competences required to cope with these vital and emerging processes.

3 DATA, CONTENT AND INFORMATION ABOUT WOMEN AND THEIR CENTRAL ROLE IN THE DEVELOPMENT OF DIGITAL CURATION ASSOCIATED WITH THE THEME OF

PUBLIC SAFETY

The data and information collection and processing on violence against women within curation processes may be able to generate the expected capillarity in prevention systems (Federici, 2019). In this way, critical inputs can be collected with relevant outputs in the construction of outcomes, which extends to the theme of public safety due to the evident relationship with the present topic.

The latest data disclosed by the Gender Equality Observatory for Latin America and the Caribbean (OIG, 2021)[7], an institution linked to the United Nations (UN) and responsible for recording and monitoring statistics associated with these types of crimes, visualized by country, when added together, reveal an absolute number of 4684 women victims of femicide, in the 21 countries of the region (Latin America and the Caribbean). As well known, in these geographic areas, the rate of this type of crime is twice as higher as in other regions of the world.

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7   Available at: https://oig.cepal.org/pt/indicadores/feminicide- or-feminicidio. Access on: 7 Sep. 2021.

Moreover, according to data published in the United Nations Children's Fund (Unicef, 2017) report entitled "A familiar face: violence in the lives of children and adolescents"[8], there is a perverse record of almost 300 million children between two and four years old, all over the world, who are victims of "[...] some kind of violent discipline by their caregivers; 250 million (about six in ten) are punished with physical punishment" (Unicef, 2017, p. 2). These data add to others, present in the same document (Unicef, 2017, p. 2), which give due account that, worldwide, about 130 million students are bullied and that approximately 15 million adolescent girls (between 15 and 19 years) have already been subjected to the experience of sex without consent at some point in their lives. Of these, as the same report complements, about 9 million had already been victims in the past (UNICEF, 2017, p. 4). Add to that the record of an increase in the number of ill-treatment suffered by elderly people within their own families.

As a response to these inhuman statistics, the United Nations 2030 Agenda for Sustainable Development explicitly declares that there can be no sustainable development without gender equality and that, to tread this path, it is essential to address ways to prevent violence, abuse, and harassment in the domestic sphere, strongly aggravated during the restrictions posed by Covid-19, all over the world[9].

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8   Available at: https://prceu.usp.br/wp-content/uploads/2021/04/violencia_na_vida_de_criancas_e_adolescentes_unicef2017_resumo_port.pdf. Access on: 7 Sep. 2021.

9   According to the head of the National Secretariat for Policies for Women (SNPM), Cristiane Britto, there was an increase in cases in several countries, but the data, even earlier, already represented a pandemic in the sense of violence against women. One in three women has suffered or will suffer some form of physical or sexual violence. Most homicides committed by a partner or relative are against women (2 out of 3), 38% of the woman murders are committed by a male partner (BRASIL, 2020).

In Brazil, many cases of violence against women are not even reported[10]. However, it is believed that they could be avoided or mitigated by implementing effective data and information curation processes and integration across platforms. However, while the problem of information dispersion on databases generated by various entities, public or private, mainstream sources or social networks persists, little will be done preventively, which often appears to be the only dimension on the which action can be taken, especially in extreme cases. Add unpreparedness to deal with these situations to the problematic and we are really in debt with the victims who suffer the consequences of these acts daily[11].

Some isolated technological initiatives can be identified as responses to confronting violence against women. Due to their relevance, we will discuss them.

The first initiative to mention is the *Call 180* - Women's Assistance Center[12], available by the Ministry of Women, Family and Human Rights. This service can be activated through a toll-free call, made through the Human Rights Brazil application[13] or through the National Human Rights Ombuds website[14].

Some initiatives in the computational field such as the Electronic Police Station of the Civil Police of the Federal District allows the online report of incidents, and the Electronic Judicial Process (PJE), a digital platform aimed at monitoring the electronic lawsuits procedures.

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10   The various forms of violence against black women aged between 15 and 29 years, mostly range from symbolic, financial to physical violence, the latter involving beatings, firearms, pocketknives, sledgehammers, scissors, strangulations, hammers, sickles, iron bars, forks, screwdrivers, knives, among other objects (TATSCH, 2019).

11   For an analysis of the phenomenon, we suggest: SAGRILLO SCARPATI, A.; KOLLER, S. H. Atendimento a vítimas de violência sexual: revisão da literatura acerca do treinamento de policiais. **Psico**, *[s. l.],* v. 51, v. 1, p. 1-13, 2020. Available at: https://doi.org/10.15448/1980-8623.2020.1.32435. Access on: 3 Sept. 2021.

12   Available at: http://www.gov.br/mdh/pt-br/navegue-por-temas/politicas-para-mulheres/ligue-180. Access on: 3 Sept. 2021.

13   Available at: https://www.gov.br/pt-br/apps/@@galeria-de-aplications. Access on: 3 Sept. 2021.

14   Available at: https://www.gov.br/mdh/pt-br/ondh/. Access on: 3 Sept. 2021.

Solutions using technologies linked to artificial intelligence working from applications and conversational robots offer services and information that help in reporting and identifying situations of abuse and violence. We can mention as examples: i) the application PenhaS[15], developed by Revista AzMina; and ii) the robot MAIA (Minha Amiga Inteligência Artificial)[16], developed by Microsoft and the São Paulo State Prosecution Service.

Unfortunately, these applications and/or technologies may not be as useful in all cases. Many of these victims – women – do not have access to cell phones, the internet or are simply unaware of how these digital tools are used, or in some situations the use may become unfeasible to warrant their safety. As we know, all this lack of resources or this vulnerable situation of digital illiteracy cannot be resolved overnight. However, it must be, in parallel and rigorously, faced.

Some international initiatives can also be highlighted. In this context, IEEE Innovation[17], for example, presents preventive tools using a combination of Artificial Intelligence (AI) and Machine Learning (ML), at the service of trained experts in human security to verify e-mails, texts, documents and track social media activity. These private, student-oriented technology companies are looking for warning signs posted on social media. The objective is to monitor indicators of cyberbullying, sexism, drug and alcohol use, depression, and other identifiers of risk of violence, not only for the people responsible for these messages,

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15   The PenhaS application grants access to any woman as long as they register on the platform, where personal data will be required, such as full name, date of birth, contact telephone number, e-mail and Individual Taxpayer Identification Number (CPF). After filling in the data, the platform directs them to a safe environment, in which registered women will be informed on how to act in cases of abuse, harassment and other types of violence. The aim is to give proper support to those experiencing these situations. Available at: https://azmina.com.br/projetos/penhas/. Access on: 3 Sept. 2021.

16   The MAIA robot is available to provide information on "how and when to act to impose limits" in relationships, interacting as a friend of the user. There is no need to register to dialogue with MAIA and, also, it is not necessary for the woman to be going through a risk situation to start a conversation with the robot. It is therefore a prevention tool aimed at teenagers and young women, aged between 15 and 24, with an appealing language that inspires confidence. Available at: http://www.104 mpsp.mp.br/namorolegal/. Access on: 3 Sept. 2021.

17   Available at: https://innovationatwork.ieee.org/can-artificial-intelligence-prevent-school-violence/. Access on: 3 Sept. 2021.

but for others, who may be their potential victims. Thus, any signs discovered by the tools trigger different levels of alert, which are brought to the attention of agents with intervention power (school administration, parents, and law enforcement officers), depending on the severity of the situation[18].

4 FINAL CONSIDERATIONS

Contributing to guarantee equity and social justice will be one of the great challenges to be taken on in the development of technologies (smart technologies) based on the use of algorithms (AI) capable of influencing decision-making in public life and in enhancing good social welfare, public safety, and urban planning.

In these data-based decision-making processes, some social groups may be excluded, either because they do not have access to the necessary devices, or because the selected data sets are simply not capable of considering the needs, preferences, and interests of marginalized or disadvantaged people (Furber *et al.*, 2018).

However, paths that can be tracked by digital curation have already been tracked, focusing on the theme of violence against women. In the public or private sphere, the search for integrated and preventive solutions, based on structured databases and the support of artificial intelligence and machine learning highlight geolocation, the recording of violent behavior, the identification of risk factors, on-line reports and authentication with legal validity for public safety bodies that are part of the National Public Safety System (SINESP), among other initiatives.

In an environment where life and death play a dangerous game, solutions that permit, for example, to identify potential victims of violence, in families and communities, and activate preventive action protocols corresponding to their vulnerability levels or solutions that are activated online, anonymously, to aid and care for victims based

18   Bark Technologies reported, for example, that by running a test pilot of its program with 25 schools in 2017, it encountered alarming situations, including the threat of bombing and school shooting. The interview, published in the digital press, is available at: https://eu.usatoday.com/story/tech/2019/02/13/preventing-next-parkland-artificial-intelligence-may-help/2801369002/. Access on: 3 Sept. 2021.

on crossing data and information are welcome. Although some of its strategies are relatively recent, both artificial intelligence and machine learning can have a strategic role and an increased presence when applied to these types of cases and populations.

In this sense, it is urgent to investigate and develop digital solutions supported by data and information integration to promote the articulation, organization and coordination of activities and reach favorable levels of effectiveness concerning the prevention of violence in families and communities, in general, but with a focus on violence against women, the target of this text. As stated above, it is an urgent and strategic issue in the field of Information Science.

Far from intending to exhaust the topic, which remains entirely open on the current agenda, we highlight the importance, for further studies, of deepening these aspects, combining them with others of the same content, which were not explored in this text, as they escape its scope, such as: transparency in opening data and information and its relationship with governance, as challenges in facing the problem of violence specifically directed against women.

As a limitation, the aforementioned difficulty related to the assumption of invisibility or thematic dispersion of, probably, much of the scientific literature that we believe cover the subject, but which is diluted in bases of referential data and indexed differently, which hinders its discovery. Also, attention is paid to the fact that the results of this study are anchored in the activity of an ongoing Research Group and that, as such, are preliminary and not conclusive.

As a corollary, the increasingly present certainty that the future data will be as good as our abilities are in the present to mobilize society and science to identify and select them and to choose the most appropriate strategies to preserve and make them accessible so that they are continually used and reused.

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