

Review of *Ethics of the Algorithms: Digital Humanities and Holocaust Memory* by Todd Presner. University of Princeton Press, 2024.

Review Draft (190 words)

Ethics of the Algorithm (EOTA) centers on archived histories and memories of Jewish victims of the Holocaust and other genocidally targeted communities with ethical implications of technology for humanities scholarship. EOTA addresses ethical concerns surrounding the need to retain integrity and importance of Holocaust testimonies through distant witnessing via computational processes, algorithms, AI, and social media. Seven chapters and two project sections outline the conceptual and methodological framework for this volume. Ethical agency in preserving Holocaust testimonies underscores the dangers of algorithms displacing human judgment as was evident in Demark's use of bare data, maps, and statistics in deporting Jews, using punch card technology, maps, and statistics. Recorded interviews, spectrograms, and network diagrams have enabled David Boder to quantify trauma and develop counter-indexing methods, generating metadata, also allowing switching between close and distant reading. Phonetic and speech analysis tools create the sonic record that also include silence amidst spoken words. Extracted semantic triplets involve the use of rule-based algorithms to enable algorithmic close reading and expressions of agency. New technologies for distant witnessing, such as social media and AI enable future generations to access these testimonies despite concerns about deepfakes.

Notes

The authors take an experimental approach in posing the central question: how can technology in the big data environment be ethically utilized in the understanding Holocaust memory and history without reducing the field (to just data) and objectifying survivors (and victims)? The mass of records—52000 videos and as many if not more printed materials—will take an extremely long time to view, if possible at all for one person. The assertion is that without technology and algorithms it would be impossible to access and view even a fraction of the archived materials.

Introduction

The author described interacting with the platform running dimensions in testimony—or “distant witnessing”—through an “interview” with a recorded figure. The use of AI and hologram has added to the immediacy of the interaction. The gaps between the questions and answers are evident to various degrees as the interviewee does not always answer the questions spoken into the microphone or keyed into the text box. Algorithms –and “algorithmic layers”--are shaping this interaction between human users and the technology driving them.

Authors explain the history behind documenting the holocaust experience beginning in 1939 when Germany invaded Poland and began establishing the ghettos in Kovno, Lodz, and Warsaw. The surviving records (hidden in milk canisters and buried in 1942/43) were rediscovered and

excavation in 1946, followed by the first recorded interviews with survivors. By 1953, institutions dedicated to preserving Holocaust memory were established in the US, UK, and Israel, which established archives of testimonies in audiovisual (analog) formats (more than 131,000 testimonies recorded).

The digitization of these materials began as they transferred analog recordings to digital media and in early 2000s, over 325,000 tapes were digitized and placed on Web accessible platforms. Based on the ethical dimension of video testimony (“the duty to listen and to restore a dialogue”, p. 9), the ethical commitment to guide algorithms around listening and restoring dialogue is made clear to readers, thus establishing an “ethics of testimony” wherein the interviewees are considered primary and the interviewers are as secondary witnesses, eventually leading to the model of “distant witnessing” as necessary in an age when holocaust survivors are dying. Even with the benefits of technology, the authors emphasize that there is no neutrality of objectivity in the computation method. Thus, the perspectives are embedded in the process represent those of the interviewees. New technologies such as AI will present new epistemologies to work with, which will enable current audiences to transcend historical, biographical, and geographical boundaries in ways impossible decades ago.

Chapter 1

Chapter 1 is important because it presents the conceptual framework of the book with three core themes: the role of algorithms, ethical agency and judgment, and a methodology. Algorithm is wide range of computation processes in the form of instructions, calculations, and decision logics but in itself does not contain data and datasets; they ingest, generate, transform, arrange, output, and get trained on data used by human users for analysis, visualization, interpretation and other hermeneutic purposes. The author poses the question: how can human users think, listen, compose, and interpret ethically and judge with and in light of algorithms without delegating any power of ethical agency to machines and algorithms? The chapter covers significant ground in algorithm studies starting with Robert Kowalski’s work on logic programming. The chapter goes further into the works of Ian Bogost, Louise Amoore (who addresses “ethics of algorithms”) and others dealing with the impact of algorithms on culture, ethics, and social relationships. Ethical use of algorithms is critical, as algorithmic violence can target others. Other dangers include targeting inequalities and biases when humans fail to scrutinize algorithmic work.

This section offers a deeper understanding of algorithms that can be meaningfully integrated into humanistic inquiry instead of delegating it too much ethical agency.

With regards to ethical agency and judgement, The authors note that machines and algorithms may have decision-making agency but they do not have ethical agency to reflect on actions according to values and principles of intersubjectivity, relationality, and historicity. The chapter discusses warnings by Joseph Weizenbaum—credited with the development of the first natural language processing program (ELIZA) in the 1960s—about the “dangers of instrumental reason” and the limitations computing. Hannah Arendt is also mentioned whose thoughts on judgment as

as a naturally human ability to exercise in the context of social and political dynamics. The dangers of AI displacing human judgment is of concern, thus humans should not relegate judgment to algorithms alone but should learn to incorporate them into their ethical decisions. A method to strike balance between algorithms and ethics would be necessary, as ethics alone will not lay down path. Choices are necessary for methodological purposes, and algorithms must be understood as a mix of choices, not just instructions. The authors reiterate the DH focus: to integrate algorithms into humanistic scholarship to ask new questions, and use these new tools to discover, analyze, and judge (for selection) instead of merely relying on algorithms to dominate that part of scholarly work.

The ensuing chapters range across a variety of approaches: analytical, experiential, interpretative, speculative, general and specific.

After this, the book summarizes the ensuing chapter—something that books normally place in the introduction. The main theme, however, is: what should algorithms have to do with ethics?

Chapter 2

The chapter presents the lack of ethics in integrating computing in the Dutch context where the deportations of Danish Jews proceeded solely based on a computational method involving punch cards, statistics, and tabulating machines with no humanistic input. The absence of human judgment has precluded alternative approaches to save lives or used for life-affirming ends; nonetheless, the data gathered from these records and processed through indexing, visualizations, and other analyses have preserved the identity and stories of Holocaust victims. The chapter first focuses on how “bare data” transpired into mass death and subsequently approached how the same data could be used (through geospatial visualizations) to re-capture communities. Thus, it presents technology as a double-edged sword. It pondered the question how data-reliant methods forge ethical relationships across responsibility, understanding, relationality, and attentiveness.

Humans were “reduced to ‘bare data’” as a result of mandatory registration in the Netherlands’ Dutch Jewish Registry under Arthur Seyssinquant who obeyed Hitler’s orders. The same body of data how somehow led to the re-humanization of Jews in Holland. Holland’s population registry had surpassed that of Germany just as “paper people” (with rich biographical data except for the racial composition that Nazis wanted) became surrogates of human individuals. Bare data also served ambitions to degrade human life to the point that their murder was not regarded homicide under the *Homo sacer* concept.

Data visualization began in the form of mapping the Dutch Jewish communities. Racial composition, nationality, rate of growth) were represented on these maps using colored regions and dots, which were ultimately used to arrest and deport Jewish families to death and labor camps of the Nazis. According to the sources cited by the author, the factor in the high rate of Holocaust deaths was the precision of statistical and mapped data. The data was generated through computational processes with technology in the role of human actors.

It is the precision of the data, however, that allowed digital maps to represent data at the individuals’ level along with their gender, age, familial relationships, and other vital characteristics.

The “Digital Monument to the Jewish Community in the Netherlands” project led this effort to visualize the data collected from population registries and statistics—bare data in the form of pixels and colors. This data has also served to conceptualize and implement a public humanities project to create memorials bearing the victims’ names in bricks. The book acknowledges the challenges of presenting a totality of this data while also recognizing the infinity of data due to the sheer volume of unknowns. An analogy was established with the Slave Voyages database mapping the Transatlantic Slave Trade database, which also triggered new questions from historians using the data, technology, and algorithms. While the authors point out that algorithms are not by themselves the stories and the data but can help researchers analyze, interpret, visualize, and e-process that data in more ways with the help of digital technologies. Algorithms also should not be driven by deductive logic, objectivity, or in other dehumanizing methods.

One must recognize the model of these projects as a starting point for other projects of genocidal history, including the data on forced boarding schools established to cleanse Native American culture in the US and Canada.

Chapter 3

This chapter focuses on the earliest audio interviews with Holocaust survivors in 1946 conducted by David Boder who took a pioneering approach to archiving survivor narratives using computational methods, quantitative and qualitative analysis, media specificity, computational linguistics, trauma theory, and a markup approach to track and quantify trauma and develop a traumatological lexicon. His approach has significantly contributed to the practices of listening with a critical perspective.

The interviews were conducted in nine languages (eventually translated into English) using a wire recorder that met the needs of Boder’s team with regards to sound quality and mobility. “Testimony” (although he did not call them as such) became a genre since the personal accounts were completely and verbatim relying on recorded sound as were recording of the 1930s’ and 40s’ interviews with former slaves.

The chapter offers a history of Boder’s approach to recording and analyzing the interviews using the technological capabilities of the time. He was influential in this approach in creating a new genre of “spoken Holocaust testimony” in that many projects have adopted his method for projects undertaken later. He was also instrumental in making these interviews available to anglophone audiences, as a large part of support came from US institutions. The chapter relies on visualizations in its zoomed-out, statistical and structural approach to the interviews in which Boder himself has offered input—sometimes more and less at other times. Counting, classifying, and analyzing 16,360 questions has also yielded rich data about the topics deeply related to Holocaust survival experiences. The chapter shifts attention to humanistic computational analysis

leading to a new art of listening to recorded testimonies. Boder integrates a psychological approach to framing the interviews with a guide used for autobiographical work, which allowed him to gain a deeper understanding of the trauma through a multidisciplinary approach. His approach to quantifying trauma included developing a system to rate trauma through measuring the frequency of traumatic experience, and identifying 46 traumas based on socioeconomic and geographical terms. This approach has led to establishing a traumatological lexicon—an ontology—which involved marking up interviews to supply a part of this data dimension, approach that contributed to the ethics of algorithms—a computational approach relying on humanistic perspectives and sensitivities.

Digital Project 1: Two methods of counter-indexing

This section (not really labeled as chapter) focuses on Boder's approach to indexing: topical and two approaches to counter-indexing: N-grams (to measure the frequency of terms) and semantic triplets (to visualize expressions of agency). Indexing informs the listener what to focus on, but instead of working with his interviewees' terminologies, he focused on higher level keywords. In his most extensive interview with Kimmelman, there appears a gap between partiality of truth and representing reality and completely and accurately capturing the accounts in Boder's indexing. The value of indexing lies in its ability to make general content of a record more discoverable and accessible to listeners (in the case of recordings) and readers (in the case of textual documents). Related to indexing is whether it can support text mining with specific isolated (trauma-related) terms (trauma inventories) rather than semantic units [triplets?]. The topical indexes were significant as they helped in making sense of Holocaust testimonies on a massive scale, and Boder approaches this by transcribing and translating testimonies that identified people, places, events, objects, and trauma. The indexes were also instrumental in ranking testimonies based on the frequency of key index words. Kimmelman's testimony was not conducive of supporting conclusions based on topic indexing, so Boder utilized counter-indexing methods.

N-grams refer to recognizable word groupings [phrases] consisting of n ($n=2-6$) number of words (nouns, articles, verbs, which are shorter than sentences). Thus, N-grams can answer questions about how and how frequently words were uttered, not just what words were as counted by keyword-based indexing. Upon transposing each interview transcript into an XML-encoded format [TEI?], the text was annotated using a Part of Speech (POS) tagging tool, adding context to indexed words and phrases, and the chapter presents data visualizations. In many cases, the data reveals that the interview contains more information than what is asked in the interview and invites the interviewer to the interviewee's perspective.

Using semantic triplets differs from n-grams because it focuses on networks of agency (of actors) and actions taken by these actors, and Boder's interview data has yielded a significant variety of visualizations after identifying the semantic triplets. The two methods are not merely distinct approaches to counter indexing; they are two methods to textual analyses using data from a "grey zone" not known in topic indexing.

Chapter 4

This chapter focuses on the USC Shoah Foundation's Visual History Archive (VHA) containing Holocaust testimonies spanning over 50 years, attempting to answer what makes a digital archive, its system, and interface more ethical also considering the indexing methodologies [and metadata strategies? AS], and information infrastructures. There are over 52000 interviews amounting over 120,000 hours with victims of the Holocaust and over seven million tables of metadata. As such, the VHA is the largest in the world. The chapter examines the interrelationships of narrative, data, and information architecture through various methods of microanalysis (or distant reading) focusing on the creation and structure of the digital archive and what can be learned about the VHA's development from the standpoint of its data system and what insights and analysis can such an approach yield, and whether there are ethical and epistemological consequences to transforming narratives into data.

One way to assess the enormous narrative structure of the archive was through visualizations using indexing terms, which themselves comprise a structure (or ontology) in the interface of the VHA and its searching feature. Time streaming is one method explained in the chapter, which accounts for the relative weights of top-level indexing terms. Visualizations not only guide the exploration of the archive but understanding the information architecture and database is critical to understanding the representations of indexing terms. The VHA also contains data related to the Rwandan and Armenian genocides, Nanjing Massacre, eugenics survivors, and other atrocities. The chapter explains through analyzing the visualizations how indexing represents the narratives generated through interviews. Switching between close and distant reading enables researchers to test the representations of narratives in the databases and visualizations.

Chapter 5

This chapter focuses on the linguistic dynamics of the voice using phonetic and speech analysis tools, computational sound analysis, forcing users to deep listening of silence, breathing, and the range of sonics recorded and analyzed increasingly training AI to evaluate human performances, qualities, and competencies. To what extent will we reach the boundaries of ethical and unethical techniques of listening? The chapter opens with a brief account of the interview with Abraham Bomba who was a barber at Treblinka cutting victims' hair before they were gassed. When asked to repeat the motions, Bomba was protesting that he couldn't but eventually shared the last minutes with the victims' before they were gassed. Bomba was able to escape and return to his town Czystowska and others about the horror awaiting deported Jews, and he helped organized the ghetto uprising, which provides a biographical context to his interviews. The chapter underscores the importance of attention to speaking mannerisms, silence, and variation in Bomba's responses, which were visualized using spectrograms (zoomed-out representations) and were recorded on betacam tapes. The computation tools used in the analyses "facilitate an ethics of distant witnessing" through the sonic record (recording and spectrogram), which have semantic and phonetic dimensions. An ethics of algorithm necessitates listening that humanizes the listening process and "preserve the singularity of the human voice in the data". Thus, ethics focus on

humanizing the aspect of data that relates to human experience. The chapter addresses the deeper links between the semantic content and phonetic meanings. The chapter demonstrates various approaches of distant listening (spectrograms, vocal intensity plots, graphs of silence) accomplished through visualizations of the sonic record (and changes within the audio) using computational tools, spectrograms, and algorithmic methods. Silences were particularly compelling as they were in the context of utterances marked by significant vocal intensity as well as breathing (inhalation, pause, exhalation) at emotionally intensive parts of the testimony

Digital Project: What were survivors asked?

Given the nearly 90,000 interview questions from four massive archiving projects, the question arises about what questions were asked and what can be learned by comparing questions asked over 70 years. Lee's project aimed at analyzing these interviews through DH machine-learning methodology for "parsing, clustering, and classifying semantic meaning in big data." This methodology relied on an algorithmic model that generated subjunctive metadata for comparative analysis. Lee's approach was "algorithmically guided", thus not generating final and definitive results but ones that might answer research questions and interrogate using computational methods to analyze humanistic big data.

The project involved extracting questions from four corpora of interviews, starting with the transcripts, excluding camera crew lines, and marking up the interviewer lines, also approaching the process chronologically. The use of the Dimensions in Technology platform enabled end-users to ask questions to survivors based on the captured interviews. The architecture involved using the BERT contextual language model – a natural language processing model -- combined with K-Means clustering algorithm scaled to handle large datasets and topic modeling. Visualizations were instrumental in the comparative analyses of nearly 90,000 interview questions across the four archives, interrogating the data from different perspectives. Lee addressed the problem of racial bias in the way algorithms worked but those could be adjusted to eliminate some errors while the problem of undetected biases remain in the language model.

Chapter 6

This chapter focuses on algorithmic close reading involving the use of rule-based algorithms to "extract, index, and visualize mentions of agency in testimonies and individual expressions". It relies on using semantic (ontologically related) triplets or three-word sets extracted from articulations of agency as a basis of metadata. In contrast to the distant reading approaches, this chapter focuses on close reading which enables people to get the details of actions narrative in the individual testimonies, which would not be possible with distant reading. Fan cites Latour's action-network theory although does not frame the analysis around ANT. Action is nonetheless a crucial element in history, which is "a record book of actions (Arendt)" out of which rise networks of actions and relationships, which then manifest agency. This chapter, therefore, focuses on the representations of agency in survivor testimonies through algorithmic close reading. Computational approaches can help us "search, query, and correlate disparate narrative elements"

across a massive archive. Expressions of agency are specific descriptions of actions to make a difference, and algorithms can help in identifying and classifying these expressions, which can then be subject to visualization.

Close and distant reading leads to writing micro- and macrohistorical accounts of agency, respectively. The algorithmic work in this chapter involves semantic triplets: subjects (nouns, pronouns, mostly human actors), relations (passive/active verbs, modifiers, prepositions), and objects (nouns, adjectives, adverbs). Software such as SpaCy was used to analyze sentences and classify the direction of actions by agencies, resulting in four subcategories of speech: active, passive, coercion/necessity, speculative/modal speech. This approach to analyze vectors of agency enabled the project team to extract a large number of semantic triplets which represented agency—or expression of agency.

Semantic triplets were ideal to focus on as they “represent the fundamental grammatical units of expressions of agency, and indexing these triplets lays the foundation for linking and analyzing multiple vectors of action. This chapter follows two methods of extracting triplets in four testimonies: “context-based” and “meticulous” to extract simpler and more complex triplets, respectively.

The microhistorical accounts yielded compelling acts of resistance, risk, and defiance.

Network visualizations were employed in representing triplets as semantic networks to interpret patterns of agency and relationships the interwove throughout the testimonies and serving as links to other testimonies. This method outlines the ontological structure of the entire archive of testimonies, which eventually serves as the foundation of the macrohistorical dynamics with many testimonies in a pan-European context but with a purely personal voice. This approach require filtering the semantic triplets for those with first-person pronouns in the subject.

The authors then address the shortcomings and limitations, such as the the extraction process butchered part of the more expressive parts of the testimonies. At other times, the algorithms had problem parsing vernacular passages. Thus ther is an ongoing effort to develop better algorithms and visualizations for more expressive passages in testimonies. Therefore, human judgment must co-exist with algorithmic methods when performing close reading. “Computational methods and algorithmic analyses of big data do not get us closer to an underlying truth but offer new interpretive frameworks and heuristics for thinking.”

Digital Project: Mala Zimetbaum

This chapter focuses on Mala Zimetbaum whose life and actions can only be reconstructed through the testimony and witness accounts of survivors. This project describes and demonstrates how computational text analysis and visualizations can contribute to collective witnessing, and in this case about MZ who died without any autobiographical record. The project aimed to create an algorithmically constructed testimonial ensemble to reconstruct MZ’s actions at Auschwitz before she died. The author describes a “computational methodology of narrative creation and analysis that brings together a multiplicity of voices and perspectives to create aggregate narratives as new possibilities for attending to testimonies” wherein emerges the concept of testimonial ensemble,

which is different from individual testimonies with fixed structures and linear narrative. “A testimonial ensemble extracts pieces of many different testimonies [in different languages] and brings them together in an interactive, reconfigurable montage format.” Fan explains the process of using computation methods to transform “aggregated narrative into a paratextual set of testimonial fragments called “semantic triplets” using a spreadsheet. The network diagrams present a visualization of the triplet elements to provide a characterization of MZ based on a single testimony. From an ethnical standpoint, the use of algorithms in processing the data allows for asking what is remembered in the testimonies but also generate new questions and speculative narratives that were not present in the testimonies.

Chapter 7

The last chapter focuses on affordances and limitations of algorithms and AI as frames of new testimonial experiences that involve people other than the survivor.

The introduction ponders the sustainability of the Dimensions in Technology (DiT) project hundreds of years from now after migrations, upgrades, remediations, and transformations of the platform and data (in light of the dominance of social media and AI) and the relevance of the Holocaust to future users. It will be important to explore media practices and computational technologies that facilitated interactions with Holocaust technologies in ways dramatically different from those decades ago (wire, cassette, and video recordings). The chapter points out the gaps in the archive and the fact that while archives are a privileged space for stories that were recorded and curated, stories never told and recorded) will never be accessible regardless of the power of computational methods and algorithms....a fact true about both conventional and digital archives.

The chapter addresses how future learning may be possible from recordings of survivors who are no longer around to answer questions. One advantage was that DiT offered end-users to interact with the platform from remote locations and with no time limits and a great degree of privacy. Automatic speech recognition (ASR) allows voice to be recognized by DiT. The chapter argues that AI is not so much about machines being able to think but about the perception of human users to believe that they are interacting with intelligence behind the user interface—in this case DiT. Human-computer interactions have combined more naturally as algorithms reach new capacities in training and speed. Given the greater probability of DiT to feature testimonies of now deceased survivors, the issue of ghosting has emerged, whereby the machine animates the survivor thus preserving their testimonies. The ethics of data integrity, access, bit-level preservation, and metadata curation aim to underscore trust in the integrity of technological systems.

The chapter addresses Storyfile, which is a company that aims for the preservation of testimonies through human-centric AI-powered technologies similar to DiT, but in this chapter, the platform aims to preserve recorded testimonies for future generations. Replika is another platform that uses chatbots that use data to mimic users and preserve them. This is where the question arises about deepfakes and ethical concerns because it may clearly cross ethical boundaries where preservation is coupled with amplification as data is preserved and harvested. As such, these technologies focus on distant witnessing and testimony creation, but the chapter also explores two social media platforms aiming to accomplish similar things: Instagram and Twitter (X). In the case of Instagram a profile of a Holocaust victim killed in Auschwitz contains photographs to tell her

story through a third-party agency curating those photos based on the deceased victim's diary. In order to reach audiences unfamiliar with the Holocaust, its victims and survivors, the testimonies and other materials such as photos and diaries must utilize technologies familiar with such technologies. Issues of access (due to required subscriptions) had consequences given the masses of followers of such profiles as Eva Hayman's.

Twitter's microblogging format allowed posting of short messages representing the plight of Holocaust victims aboard the St. Louis who were refused entry at US and other Latin-American ports and were killed in Auschwitz upon return to Germany. In a much different format, Twitter's microblog format was also a form of distant witnessing whereby the creator of those tweets was in a role of a facilitator between the chatbot and the social media platform serving as cultural memory machine.

CONCLUDING WORDS

EOTA makes a case for how computation methods can be used to curate cultural memory in the age of "big data, new technologies and distant witnessing". New metadata was created with the help of algorithms, visualizations, and other analysis tools, semantic triplets were extracted for purposes of producing testimonial ensembles. Although the present volume views this technology mainly within the domain of Holocaust testimony and with specific ethical standards, this approach may well work in other digital worlds and historical topics such as slavery, systemic racism, apartheid, American Indian experience, Roma experience, and others.

Review

While the volume focuses on the history and memory of the Holocaust, it primarily deals with the implications of technology for digital humanities scholarship and the ethics surrounding the need to retain the integrity and importance of the Holocaust. This is a definite read for historians, digital humanists, archivists, librarians, students, and scholars of other human groups that have experiences (or are still experiencing) genocide.

AS: Ethics of the algorithm poses multiple requirements: 1) to capture every piece of data in the narratives contained in the testimonies, 2) interrogate them through algorithms to expand knowledge of the events, people, places, circumstances, and possibilities, and 3) generate new knowledge.

