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## **The Application of Digital Humanities in Intercultural Studies on the Example of the Project *Elyonim veTachtonim***

### **Note**

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### **Introduction**

*Elyonim veTachtonim* is a Hebrew merism originating from the Babylonian Talmud (e.g., Megillah 11a–b; Sanhedrin 20b; Ketubbot 104a) which literally means “those above and those below” and denotes the totality of the divine creation, both supernatural (i.e., angels and demons) and natural (i.e., humans and animals). This phrase is also the name of a project whose purpose is to develop a system for analyzing traditions that involve supernatural entities in various cultural and religious traditions.

The main purpose of this paper is to present the project *Elyonim veTachtonim* (hereafter: EvT) as an example of applying digital humanities (hereafter: DH) methodology in the sphere of intercultural and interreligious studies. As such, the paper is addressed to current and prospective users who wish to have a deeper understanding of its

mechanisms, as well as to those who would like to employ this system in a different religious and cultural context.

The paper is structured as follows. The first section tackles the essentials of the DH, along with their most important facets, which have proven instrumental for the EvT project. It takes the Babylonian Talmud as an illustration of the hermeneutic problems associated with massive corpuses. The second section presents the basic tenets of the EvT project, with a special emphasis placed on its digital dimension. The third section reflects on the history of the EvT project and sketches out its potential uses.

## Digital Humanities

The simplest and most inclusive way to conceptualize the DH (also known as “humanities computing” or “digitized humanities”) is as the humanities which study digital sources (e.g., social media posts, Internet memes, or digitized classical texts), supplemented with digital methods of study (e.g., quantitative linguistics or stylometry). This big-umbrella definition acknowledges the fact that the discipline has developed as a result of disperse, bottom-up activities carried out by scholars in various professions who rely on various digital means to enhance their humanistic inquiries. Because such an understanding makes it sometimes difficult to distinguish between a digital humanities scholar and a “regular” one who just happens to work with the basic functions of a word processor, some academicians suggest the model of a “digerati” (a portmanteau of “digital” and “literati”), who is not only fluent in their preferred hermeneutical framework, but also able to create things such as databases or models.<sup>1</sup>

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<sup>1</sup> M.K. Gold, *The Digital Humanities Moment*, in: M.K. Gold (ed.), *Debates in the Digital Humanities*, Minneapolis 2012, pp. ix–xvi. S. Hai-Jew, *Preface*, in: S. Hai-Jew (ed.), *Data Analytics in Digital Humanities*, Springer 2017, pp. vii–xii. E. Gardiner R.G. Musto, *The Digital Humanities: A Primer for Students and Scholars*, Cambridge 2015 (electronic edition, no pagination), pp. 19, 88. C. Warwick, *Building Theories or Theories of Building? A Tension at the Heart of Digital Humanities*, in: S. Schreibman,

A crucial factor behind the development of the DH is the phenomenon called “infobesity” – the surplus of cultural data that exceeds the cognitive processing capabilities of a single individual – as it motivates the invention of means to cope with this excess information. The history of such innovations stretches back to at least the 2nd century BC and the work of Callimachus of Cyrene, who produced a catalogue of the Alexandrian library; through the “wheel of books,” a mechanical, hypertextual machine designed by Agostino Ramelli in the 16th century; to modern-era visionaries such as Vannevar Bush, who anticipated the Internet in the form of a hypertextual machine he called a *memex*. The often-quoted 20th-century project that has joined the humanities with modern-day computing is the work of Roberto Busa, a Jesuit priest who with the help of IBM created a concordance of Saint Thomas Aquinas’s corpus (*Index Thomisticus*).<sup>2</sup> All of these means of taming infobesity can be seen as important stages for the subsequent development of the DH.

The essential work for popularizing the digital methods of augmenting the traditional humanities was done by Franco Moretti and his concept of distant reading<sup>3</sup> vis-à-vis traditional close reading. In the latter mode, the meaning is extracted through careful probing of a text, thus revealing what is not apparent after a casual reading. The main problem with this hermeneutic approach is that it requires a great deal of time to process a relatively small amount of text and can result in a tendency to focus on its uniqueness rather than on what makes it typical. Interpretation bias is only strengthened by the fact that the literary canons are formed independently of scholars’ efforts. Moretti quotes

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R.G. Siemens, J. Unsworth (eds.), *A New Companion to Digital Humanities*, Chichester 2016, pp. 538–552.

<sup>2</sup> A. Burdick, J. Drucker, P. Lunenfeld, T.S. Presner, J.T. Schnapp, *Digital Humanities*, Cambridge 2016, pp. 32–35, 123. D. Fiormonte, T. Numerico, F. Tomasi, *The Digital Humanist: A Critical Inquiry*, Baltimore 2020, pp. 44–46. O. Le Deuff, *Digital Humanities History and Development*, New York 2018, pp. 37–58.

<sup>3</sup> For a review of analogical ideas such as “algorithmic criticism,” “macroanalysis,” or “new empiricism” see K. Bode, T. Murphy, *Methods and Canons: An Interdisciplinary Excursion*, in: P.L. Arthur, K. Bode (eds.), *Advancing Digital Humanities: Research, Methods, Theories*, New York 2014, pp. 175–193.

the Hegelian dictum, “the history of the world is the slaughterhouse of the world,” and relates it to the sphere of literature: only a fraction of works are effectively circulated, while the rest become “butchered” by consumers who decide to spend time and money on certain books while effectively ignoring the remainder.<sup>4</sup> To counteract the limitations stemming from small corpuses and the limited capabilities of individual close readers,<sup>5</sup> Moretti suggests supplementing a traditional close reading of canonical works with a distant reading – automatically or collectively processing large chunks of text along with statistical methods, which results in large-scale trends and abstract patterns being recognized. Shifting attention away from the details can open up a broader perspective, from which literature is less an individual endeavor of a single author and more a system of variables which are constantly re-combined in the struggle for symbolic dominance.<sup>6</sup>

With such an understanding of the DH, it goes without saying that some texts – massive and complex works – are particularly well suited for distant reading. This fittingly describes the features of the Babylonian Talmud, the first corpus studied within the EvT project; it has played an essential role in molding the methodology. It is thousands of pages long, offering models of rabbinic piety,<sup>7</sup> and it has a multi-layered

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<sup>4</sup> Moretti deploys two metaphors: the economic one, which explains canonicity in terms of the law of supply and demand, and the Darwinian one, which approaches the specific works, literary motifs, or ideas as locked in the struggle for survival. F. Moretti, *Distant Reading*, London–New York 2013, pp. 65–70. See also J. Flanders, F. Jannidis, *Data Modeling in a Digital Humanities Context. An Introduction*, in: J. Flanders, F. Jannidis (eds.), *The Shape of Data in the Digital Humanities: Modeling Texts and Text-based Resources*, London 2020, pp. 3–25. M.L. Jockers, T. Underwood, *Text-Mining the Humanities*, in: S. Schreibman et al., op. cit., pp. 291–306.

<sup>5</sup> It has been estimated that a human can read about 25,000 books in their lifetime, but only if they start at the age of 15 and read one book a day for the consecutive 70 years. N.K. Hayles, *How We Think: Transforming Power and Digital Technologies*, in: D.M. Berry (ed.), *Understanding Digital Humanities*, New York 2012, p. 45.

<sup>6</sup> F. Moretti, op. cit., pp. 53–56, 87–88.

<sup>7</sup> H.L. Strack, G. Stemberger, *Introduction to the Talmud and Midrash*, Minneapolis 1996, p. 191. B.S. Wimpheimer, *The Talmud: A Biography*, Oxford 2018, pp. 103–109, 163–165.

composition, having been produced by Judean sages living in Palestine and the Sasanian Empire throughout more than seven centuries. Whereas the way it was composed prompts a reading of it as the transcript of a prolonged discussion between rabbis, academics such as Jonah Fraenkel, Eliezer Rosenthal, and David Weiss Halivni in the 1970s suggested perceiving it as a deliberate literary creation. This approach acknowledged the fragmentariness stemming from various social backgrounds and religious outlooks of the three main groups of Talmudic contributors: Tannaites, Amoraites, and Stammites.<sup>8</sup> Seen from this perspective, the Babylonian Talmud does not offer a coherent system of teachings, but a pool of various religious, moral, and juridical statements representing the opinions of the given groups of sages.<sup>9</sup> Thus, to facilitate overcoming the limitations associated with the close reading of selected passages, it is beneficial to resort to digital methods.

## Basics of EvT

The EvT project was initiated in late 2016 as a natural continuation of another endeavor, whose goal was to analyze the cognitive metaphors used to describe the demons in early rabbinic literature. This purpose required a clearly delineated textual base, which entailed compiling a comprehensive list of all the Talmudic and midrashic literary accounts involving these creatures. As soon as such a concordance was compiled, three things became apparent. Firstly, the subject of demons constituted only a fraction of a much broader issue of supernatural entities. Therefore, it was necessary to acknowledge other classes of entities and

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<sup>8</sup> For the review of scholarship which gradually led to the change in perspective on rabbinic literature from historical to literary, see I.M. Gafni, *Rethinking Talmudic History: The Challenge of Literary and Redaction Criticism*, "Jewish History" 25 (2011), pp. 355–375; J. Neusner (ed.), *The Formation of the Babylonian Talmud: Studies in the Achievements of Late Nineteenth and Twentieth Century Historical and Literary-Critical Research*, Leiden 1970; and A. Walfish, *The Nature and Purpose of Mishnaic Narrative: Recent Seminal Contributions*, "AJS Review" 32: 2 (2008), pp. 263–289.

<sup>9</sup> A. Samely, *Forms of Rabbinic Literature and Thought: An Introduction*, Oxford 2007, pp. 2–22, 137–144.

to offer an adequate theoretical framework for the sources being used. Secondly, although the database had been compiled for a specific purpose, it could be utilized in a plethora of ways and as such presented a potentially valuable academic tool which might be developed in its own right. Given the possibilities offered by Internet technology, it took only a few steps to turn it into an accessible online inventory. Thirdly, in the face of such a complex task, it became obvious that although the initial purpose of the scrutiny was to cover the early rabbinic literature as a whole, each corpus deserves to be treated separately. These considerations ultimately led to the publication of the project website together with the first version of the database back in February 2017. The following years witnessed the production of subsequent versions of the Talmudic inventory, the evolution of the theoretical and methodological basis, and – most importantly – the application of the project in the study of other corpuses and media.

In its current form, the EvT project offers a customizable system for quantitatively and qualitatively analyzing the traditions involving supernatural entities in various cultural and religious contexts. The system consists of two basic components: a theoretical/methodological one and a practical/technical one. The former is built out of several more specialized modules,<sup>10</sup> the first of which is evolutionary psychology, according to which humans have evolved as a species that possesses well-developed cognitive and social abilities. Humans' ability to plan ahead and coordinate complex operations involving a large number of individuals gave them an edge over other species; because evolution proceeds slowly, the physiological and psychological characteristics of humans have remained basically the same since the Stone Age and across civilizations.<sup>11</sup> This means that underneath often hyperbolized differences between the disparate cultures lies a shared biological legacy of "human universals."<sup>12</sup>

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<sup>10</sup> Due to obvious space limitations, what follows is a significantly abridged version of the full account of the theoretical basis.

<sup>11</sup> D.M. Buss, *Evolutionary Psychology, The New Science of the Mind*, London–New York 2016.

<sup>12</sup> D. Brown, *Human Universals*, Philadelphia 1991 (digitized edition, no pagination). Chapter 4 contains a detailed listing of such features manifesting in various cultures.

The second module stems from the cognitive revolution which took place in the humanities and social sciences of the 1980s. One of its crucial statements was that the human mind is not a blank page or a general-purpose computer, but a prewired and preprogrammed tool shaped through evolution by instinctive priorities and operating with a number of segments that specialize in particular domains.<sup>13</sup> This way of approaching the human mind served as the bedrock for two other paradigms which are crucial for the present project. The first one is the cognitive science of religion, according to which the human mind is evolutionarily tuned for particularly efficient processing of information pertaining to social contexts. As such, it is particularly easily triggered by even minuscule cues from the environment, which are experienced on the phenomenological level as the readiness to perceive human animacy, or the results thereof. In turn, this natural panhuman tendency serves as the basis for a more generalized, socially shared, and rationalized explanatory framework involving specific anthropomorphic supernatural agents. Although the latter may differ in terms of their appearance and specialization (angels, fairies, zombies, gnomes, etc.), in essence they are all anthropomorphs possessing some counterintuitive features, especially those which are important from the perspective of human survival, such as knowledge of future events, the ability to move quickly from place to place, invisibility, and the like.<sup>14</sup> The second paradigm is cognitive linguistics, according to which human cognition is embodied: perception, memory, language, and other functions directly depend on the biological and physiological qualities of the human body. This means that humans perceive the world not “as it is,” but only insofar as their hunter-gatherer cognitive apparatus permits. Furthermore, what we experience is expressed in language, which we use not only

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<sup>13</sup> D. Kenrick, R. Hogan, *Cognitive Psychology*, in: M. Maxwell (ed.), *The Sociobiological Imagination*, Albany 1991, pp. 171–186. K.N. Laland, G.R. Brown, *Sense and Nonsense: Evolutionary Perspectives on Human Behaviour*, New York 2013, p. 155.

<sup>14</sup> S.E. Guthrie, *Faces in the Clouds: A New Theory of Religion*, Oxford 1993. P. Boyer, *Religion Explained: The Evolutionary Origins of Religious Thought*, New York 2001. J.L. Barrett, *Why Would Anyone Believe in God?*, Lanham 2004. I. Pyysiäinen, *Supernatural Agents: Why We Believe in Souls, Gods, and Buddhas*, New York 2009.

as a tool for communication, but also as the rudimentary vehicle for thinking. The crucial role is played by a metaphor: the understanding of one, usually more abstract phenomenon through the framework of another, usually more immanent phenomenon.<sup>15</sup>

The EvT project was developed with the study of textual materials in mind, be they ancient grimoires or contemporary television series, and in order to treat these sources appropriately, it involves two more modules. The first is the DH, for reasons already discussed, the main one being the will to go beyond the limited anecdotal evidence. The second is formal analysis – a notion that focuses on the formal features of a given work: recurring elements such as genres, tropes, or stock characters, and their hermeneutic impact on the readers' experience.<sup>16</sup>

The practical/technical component is the organic consequence of the theoretical/methodological foundation of the project: it is designed for the quantitative and qualitative analysis of textual accounts about supernatural entities understood along the lines of the cognitive science of religion with an emphasis placed on the cognitive metaphors used in the description of their appearance and behavior, especially in contrast with human actors. The central tool of this analysis is the database, understood as a structured collection of data combined with methods for accessing, organizing, selecting, retrieving, and modelling the data.<sup>17</sup> The database was produced and developed using the standard binary spreadsheet Excel file format (.xlsx). The textual material regarding traditions about specific supernatural entities is divided into units, that is, the smallest portion of a given text subject to classification and annotation. Every unit gets its own row in the spreadsheet, while the subsequent columns have annotations for it in the relevant categories.

The contents of the database are managed according to the knowledge organization system used in the project, which relies on three specific processes: classification – a grouping of elements (e.g., sources

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<sup>15</sup> V. Evans, M. Green, *Cognitive Linguistics: An Introduction*, Edinburgh 2006, pp. 156–160.

<sup>16</sup> G. Castle, *The Blackwell Guide to Literary Theory*, Malden 2007, pp. 174–180.

<sup>17</sup> J.A. Rydberg-Cox, *Digital Libraries and the Challenges of Digital Humanities*, Oxford 2006, p. 15.

or supernatural entities) with a certain shared property into sets in order to distinguish them from other elements sharing different features; ontology – a hierarchized system of all elements, such as actors, items, and actions, along with their properties and relationships; and taxonomy – a naming system made of controlled vocabulary used in the ontology.<sup>18</sup> The basic device of the knowledge organization system used for annotation is the tag, understood as an index or metadata given to a specific piece of information, which in turn facilitates searching, collecting, and counting.<sup>19</sup> The ontology of tags utilized in the EvT project has been gradually developed over the years and currently consists of well over 600 hierarchically arranged items, each one operationalized with an abstract ideal type.<sup>20</sup> The tags can be roughly divided into two groups. The first pertains to the hermeneutically essential formal features of the material and includes categories such as literary genre, language, attribution, or actor. Acknowledging these facets provides additional guidelines in terms of interpreting the contents, insofar as it allows us to estimate the origins of the given tradition, the significance it had for the authors, or the emotional response it was supposed to evoke. The second group strictly concerns the content and covers such categories as class and type of supernatural entity, topic, or type of relationship which unfolds between the given supernatural entity and a human.<sup>21</sup> The ontology is based on the open-world assumption that the information

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<sup>18</sup> N. Crofts, M. Doerr, T. Gill, S. Stead, M. Stiff (eds.), *Definition of the CIDOC Conceptual Reference Model Produced by the ICOM/CIDOC Documentation Standards Group, Continued by the CIDOC CRM Special Interest Group Version 5.0.4 November 2011*, 2011, <http://www.cidoc-crm.org/html/5.0.4/cidoc-crm.html>, pp. ix–xviii. Ø. Eide, C.E.S. Ore, *Ontologies and Data Modeling*, in: J. Flanders, F. Jannidis (eds.), op. cit., pp. 181–183, 187. L. Hughes, P. Constantopoulos, C. Dallas, *Digital Methods in the Humanities: Understanding and Describing their Use across the Disciplines*, in: S. Schreibman et al., op. cit., p. 163.

<sup>19</sup> D. Fiorimonte et al., op. cit., pp. 145–155. J. McGann, *Marking Texts of Many Dimensions*, in: S. Schreibman et al., op. cit., pp. 358–359.

<sup>20</sup> P.C. Hogan, *The Mind and Its Stories: Narrative Universals and Human Emotion*, Cambridge 2003, pp. 57–59.

<sup>21</sup> A detailed explanation can be found in W. Kosior, “Six Things Are Said Concerning Demons” (*Hagigah 16a*): *The System of Topic Tags Used in the Elyonim veTachtonim*

contained within the database is incomplete relative to the world it is supposed to model,<sup>22</sup> and as such it can accommodate future expansion.

Currently, two databases are offered within the EvT project. The Talmudic one has been in development since 2016 and reached its nearly final form (version 006, codenamed *Uzzah*) in 2021. The biblical one was first published in July 2021 (codenamed *Ariel*) and its second version (codenamed *Behemoth*) came in August 2021. The construction process was almost identical for both the Talmudic and biblical databases and very similar in the case of the others; thus, one can assume that it may serve as a template for future endeavors of this kind. The first step is investigating the literature on the subject in order to populate a tentative list of supernatural entities. This list in turn is supplemented with the results of dedicated electronic searches in the corpus in question. In the second step, the raw collection of texts is transformed into units: formally coherent portions of text.<sup>23</sup> The third step is entering these units into the database and annotating them using the tag ontology. In the fourth step, the data are revised in order to unify the classification and annotation.

## Applications of the EvT

The previous applications of the EvT can be divided into two main groups, depending on how central it was for the given study. The first group of applications contains the instances in which the system has played a secondary, supplementary role for a study which relied on the methodology for the traditional humanities. In a number of cases, the EvT simply provided a coherent set of categories, which in turn have been utilized in the close reading of the selected passages. Thus, my analysis of

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*Inventary to Describe the Features of Supernatural Entities and Their Relationships with Humans*, “The Polish Journal of the Arts and Culture. New Series” 13 (2021), in press.

<sup>22</sup> N. Crofts et al., op. cit., pp. ix–xviii; C.M. Sperberg-McQueen, *Classification and its Structures*, in: S. Schreibman et al., op. cit., pp. 384–389.

<sup>23</sup> The project identifies three main genres: anecdote, pragmatic advice, and general statements.

the story of King Solomon and Asmodeus, the demon from BT Gittin 68a–b, relied heavily on the typology of relationships between humans and supernatural entities. The operationalization of various kinds of social exchanges revealed the complexities in the hierarchies and struggles for power that permeate the sources: the scuffles took place not only between Solomon, the king of humans, and Asmodeus, the king of demons, but also between specific supernatural entities.<sup>24</sup> Another example is my analysis of *Pirke de-rabbi Eliezer* 10, which contains a retelling of the *Book of Jonah* with an emphasis on the means of repelling or placating various supernatural entities. These were classified by the typology of apotropaic techniques used in the EvT, which in turn facilitated speculation about the possible origins of this passage.<sup>25</sup>

Apart from providing the categories, the EvT has functioned as a convenient concordance. The system allows one to quickly isolate specific passages that meet one's criteria and it thereby significantly facilitates the research process. This proved important in my investigation into the origins of particular classes of the supernatural entities in the Babylonian Talmud against the literary motif of fallen angels being responsible for begetting giants and demons, which is prevalent in the religious literature of the era.<sup>26</sup> The concordance was similarly important in the study of supernatural entities' role in humans' intimate lives. With the help of electronic searches and based on the classifications developed in the project, it was possible to recognize the range of functions played by the specific classes of supernatural entities.<sup>27</sup>

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<sup>24</sup> W. Kosior, *Przypadki demona Asmodeusza i króla Salomona według Talmudu babilońskiego (Gittin 68a–b). Przekład i komentarz z perspektywy projektu Elyonim veTachtonim*, "The Polish Journal of the Arts and Culture. New Series" 11 (2020), pp. 93–111.

<sup>25</sup> W. Kosior, *Apotropaiony w midraszu do Księgi Jonasza według Pirke de-rabbi Eliezer. Wstęp, przekład i komentarz*, in: K. Kleczkowska, W. Kosior, A. Kuchta, I. Łataś (eds.), *Zwyczaj i akcesoria apotropaiczne w cywilizacjach świata*, Kraków 2018, pp. 35–51.

<sup>26</sup> W. Kosior, "The Affair of Uzza and Azazel" (b. Yoma 67b): *The Creation of Demons and the Myth of the Fallen Angels in the Babylonian Talmud*, "Henoch" 2 (2021), in press.

<sup>27</sup> W. Kosior, *Rola istot nadprzyrodzonych w pożyciu intymnym ludzi według Talmudu babilońskiego*, Ogólnopolska konferencja naukowa "Pasja, pożądanie, miłość. Interpretacje, paradygmaty, znaczenia, konteksty", December 14, 2019, Jagiellonian University, Faculty of Philology, <https://www.youtube.com/watch?v=DLpb4cjpkuI>.

The combination of these functionalities as a supplement to close reading proved very helpful in a more detailed study of Satan and two associated figures: the angel of death and *yetzer ha-ra* (an anthropomorphized “evil inclination”) in the Babylonian Talmud. The quantitative analysis was able to go beyond the apparent fragmentariness of the Babylonian Talmud and to show some discrete tendencies in its portrayal of Satan, thus challenging the popular assumptions found in the literature on the subject. While it is true that the Satan of the Babylonian Talmud does not resemble the Christian Satan, understood as the principle of evil, the more in-depth study revealed that he was deeply associated with the spheres of death and sexual life, thus somewhat paralleling the role postulated by other religious traditions.<sup>28</sup>

While the above examples prove that the EvT can be useful as a supplementary tool for close readings of specific Talmudic passages, it is clear that it is the quantitative studies which extract its full potential. In this regard, an apt example is my inquiry on the subject of the apotropaic methods described in the Babylonian Talmud. In my earlier research, conducted between 2012 and 2016, I analyzed the apotropaic aspect of several basic Jewish customs: performing circumcisions, wearing fringes (*tzitziyot*) and phylacteries (*tefillin*), and attaching mezuzahs to doorposts. One of the observations I made from these earlier studies was that the Babylonian Talmud provides much textual evidence for the protective role of these customs. In 2017, following the publication of the project website, it was only natural that I continue my prior studies using the new methods and, to my surprise, I realized that the quantitative data demanded a reevaluation of my earlier theses. From almost 150 units tackling the subject of various apotropaic means, only a tiny fraction spoke about these four customs – and in most cases, these references were less than obvious.<sup>29</sup>

<sup>28</sup> W. Kosior, “*Cierpiał bardziej od Hioba*” (*Bawa batra 16a*). *Postać szatana w Talmudzie babilońskim*, public lecture in the Centre for Comparative Studies of Civilisations, Jagiellonian University, Faculty of Philosophy, December 9, 2020, <https://www.youtube.com/watch?v=JUiH6RZ5YqU>.

<sup>29</sup> W. Kosior, “*Arrow in the Eye of Satan*” (*bSukkah 38a*): *Apotropaic Customs and Paraphernalia in the Elyonim veTachtonim Electronic Inventory of Angels, Demons,*

April 2021 witnessed the publication of the Talmudic database, version 006, codenamed *Uzzah*. It was the first one to recognize the categories pertaining to the formal literary features, such as the language, the attribution of a given tradition to a specific rabbinic figure, and the presence of a rabbinic or biblical actor in the account. These new features opened up a number of research possibilities. Firstly, it turned out that the lion's share of the traditions that speak of supernatural entities from the BT are provided in a form that suggests Palestinian origins. It points to the common lore which has shaped the rabbinic teachings about supernatural entities in both Palestine and Babylonia, and hence it affected later works. Secondly, this provided insight into how real these traditions appeared for the Stammaitic redactors of the Babylonian Talmud. Based on the results of Bayesian revolution in epistemology and contemporary empirical research into the psychology of beliefs, it was possible to offer a formula for assessing the perceived reality of the specific Talmudic texts that speak about supernatural entities.<sup>30</sup> Thirdly, I approached the BT with the question of whether the accounts concerning supernatural entities can be seen as literary horror. I conceptualized this genre as a quality of a text which appears as mysterious, real, fearful, and disgusting; I then operationalized it using the existing categories of the Talmudic database. Next, I proposed an algorithm which acknowledged the combination of these features and calculated a single score. Although very few of the Talmudic accounts met the criteria of literary horror defined in this way, unsurprisingly, this turned out to be a great opportunity to test the method itself.<sup>31</sup>

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*and Ghosts in the Early Rabbinic Literature*, Second Demonological Conference: Deliver Us from Evil... Apotropaic Customs and Objects in the Civilisations of the World, May 5–7, 2017, Cracow.

<sup>30</sup> W. Kosior, *Właściwości literackie Talmudu babilońskiego a realność przedstawionych w nim istot nadprzyrodzonych*, public lecture, Jewish Studies Section of the Student's Club of Inter-Epochal Historical Research, University of Warsaw, May 12, 2021, <https://www.youtube.com/watch?v=xYITq2Exm-Q>.

<sup>31</sup> W. Kosior, *Measuring the Literary Horror of the Talmudic Accounts Involving the Supernatural Entities*, PhilosophyCon 6: Metaphysical Horror conference, panel: "The (Not So) Dunwich Horrors," May 16, 2021, <https://www.youtube.com/watch?v=p1suExazev0&t=6156s>.

In addition to the above, the EvT system has been deployed in the study of different textual corpuses. First and foremost, this includes the Hebrew Bible, but some unpublished reconnaissance has also been made in Midrash Rabbah and Jerusalem Talmud. It is no surprise that the EvT system has worked in these corpuses “out of the box” or with only minor adjustments. Certainly, the main challenge for the universal aspirations of this method is to apply it in contexts that are significantly different from those in which it was initially used. To date, there have been two such endeavors, and both cases were students of mine writing theses under my supervision.<sup>32</sup> The first such undertaking was carried out by Anna Korzonek, who studied the commercially successful television series *Sex in the City* and focused on the way it portrayed men. Using a modified EvT system, Korzonek built an inventory of the series’ male protagonists and annotated it using a customized system operating with both formal and thematic features. Although the medium significantly differed from the Babylonian Talmud, the study in its essence was very similar: Korzonek recognized both the formal features, such as on-screen time, and thematic ones, such as personal and temperamental traits. The main question posed by the author was what specific male traits are favored in the series. Using an inventive way of measuring it that acknowledged both the formal aspects (e.g., frequency and length of on-screen appearance) and the thematic ones (e.g., the number of times a given male figure was physically intimate with one of the female protagonists), Korzonek was able to show the tendencies in the series and to confirm her hypothesis, grounded in evolutionary psychology: slightly older and well-off womanizers appear as the most attractive as long as short-term mating strategies are employed by the women.<sup>33</sup>

The second such project was conducted by Paweł Grzywna, who analyzed the bestiary manual in the first edition of *Dungeons & Dragons* – a staggeringly popular role-playing game created by Gary Gygax.

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<sup>32</sup> I should also add that in both cases the EvT proved to be a useful didactic tool and allowed for a relatively smooth entrance into the role of novice researcher.

<sup>33</sup> A. Korzonek, “*Nie wybieram złych mężczyzn – to oni wybierają mnie.*” *Analiza męskich cech promowanych przez media na podstawie serialu Seks w wielkim mieście*, [MA thesis], Kraków 2018.

Grzywna listed all the supernatural entities mentioned in the manual and annotated them using a complex system of categories that acknowledges such features as the continuum between anthropomorphism and theriomorphism, civilizational development, intelligence, and the cultural and mythological context. In combining all these features in a quantitative/qualitative analysis, Grzywna was able to convincingly show several interesting regularities: the closer the supernatural entities were to the cultural and mythological circle of Gygax, the more likely they were to be portrayed as evil, theriomorphic, and less intelligent – exactly as was the case with the European pre-Christian supernatural entities. Conversely, the supernatural entities originating from the Middle Eastern, Far Eastern, and Indian mythologies turned out to be the most benevolent, intelligent, and human-like. The results of Grzywna’s study provided a solid basis for further nuancing the problem of portraying the cultural other as inhuman and prone to evil.<sup>34</sup>

## Conclusions and Potential Future Applications

Even though most of the previous applications of the EvT project concerned the Judeo-Christian context, it seems safe to say that the system has much to offer in cross-cultural research. The quantitative perspective, abstract categories, and relative ease of use translate into a wide range of potential applications for studying different cultural and religious traditions as well as media. In addition to this, it is possible to envisage at least two other aspects of the EvT which can be developed. The first such area is online collaboration in the production of a specific database. The Talmudic inventory was created entirely by me with just a few occasional contributions from the users; it was similar in the case of my students’ projects. The matter was slightly different with the Biblical inventory, which was developed with the help of appropriately trained students participating in a thematic seminar, but even then the

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<sup>34</sup> P. Grzywna, *Analiza kulturoznawcza właściwości postaci w pierwszym bestiariuszu do Dungeons & Dragons*, [BA thesis], Kraków 2020.

working group remained minimal. Meanwhile, the possibilities offered by online collaboration are vast, and as examples of projects like Wikipedia show, it is clear that much more can be achieved with the help of volunteers worldwide. The second area for development is basic automation in producing the inventory, in either data collection or annotation. So far, during the earlier stages of the project, much conceptual work had to be done; for this purpose, it was necessary to perform nearly all the work manually. Now, with much of the theoretical and methodological groundwork completed, it seems the right time to gradually introduce automation. In turn, incorporating artificial intelligence processing would open up even more possibilities “than are dreamt of in your philosophy.”

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**Abstract**

The main purpose of this paper is to present the *Elyonim veTachtonim* project as an example of applying the digital humanities methodology in intercultural and interreligious studies. It also serves as an occasion to reflect on previous achievements and sketch out prospective applications. The paper is addressed toward project users who wish to have a deeper understanding of its mechanisms as well as those who would like to employ it in different religious and cultural contexts.

**Keywords**

Digital Humanities, Religious Studies, Cultural Studies, angelology, demonology