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New Questions, Old Paradigm: A Retrospective on Collaborative Sense-making

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Abstract

A host of new terms such as crowdsourcing, collective intelligence, and mass collaboration, have recently emerged to explain how new media enable the masses to collaborate transcending geographic and temporal limitations. But a brief overview of history proves that although these terms are new, the use of technology[1] to support mass collaboration is anything but new. This paper explores historical "collaborative sensemaking," where large groups of people use technology, artifacts, information, and social practices to give meaning to shared experiences. It does so through the lens of the Talmud, a central text in Judaism, product of centuries-old dialectic interaction among people and knowledge.

The article will introduce a retrospective analysis of collaborative sensemaking, particularly religious sensemaking. We review the case of the Talmud in order to identify the technological and social strategies that facilitated effective sensemaking. Despite significant technological changes, we believe many of the core principles that support collaborative sensemaking in communities of practice today are not something new, but a reiteration of principles that have already been tested through time. Some of the research questions we will be answering are:

- What does the examination of theories used for social media today under the light of history tells us?
- Is collaborative sense-making a new form of community engagement or a rephrasing of millennia-old human practices?
- How do new, often instable digital platforms alter this practice?
- Do the technological advancements of our era turn engagement with new media into a process of 'creative destruction'?

Keywords: collaborative, sensemaking, new media, Talmud, religion

[1] The word "technology" does not refer only to mechanical or technical means of knowledge production, but denotes the tools used in a broad sense. These can be epigraphs, papyri, even spoken words etc.

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"Let whoever has learned come and teach, and whoever has not learned come and learn."

Song of Songs Rabbah 2.16

Introduction

The Tower of Babel, humanity's first collective attempt to reify our aspiration of attaining heavens (Gen. 11:1-9), is also the first example of a conscious effort to achieve shared knowledge through collaboration with other human beings. God's intervention and eventual confusion of people's languages was not what brought this experiment to an abrupt end. Common language was merely the technology available at that time. What really caused the project's failure was the dissolution of people's ability to communicate: When the medium ceased to exist, members of the community were no more able to communicate, thus to collaborate towards a common, unifying goal: community was no more possible to sustain.

While the Tower of Babel is an etiological construct that aims to rationalize how different languages came into being, it is interesting to note for the purposes of this article that later commentaries and interpretations have perceived this collaborative endeavor as an act of arrogance (*hybris*) against God, and his prescribed order of things. The notion of knowledge as *hybris*, in fact as a forbidden fruit, is repeated elsewhere in the Bible (for example, in the story of

Adam and Eve and the Tree of Knowledge). This is also a feature common to mythologies of other people: Prometheus is punished by Zeus, because he brings the knowledge of fire to humankind.

Thousands of years separate us from this narrative, and today new technologies define how people collaborate. Mass collaborative initiatives (such as Wikipedia, the Encyclopedia of Life, or Galaxy Zoo)[2] are examples of how people develop new knowledge today, shared interpretations, and the scaffolding needed to support effective decision-making.

In this paper, the term collaborative sense-making is used to denote the way large groups of people today use technology, artifacts, information, and social practices to make sense of shared experiences. This term is used throughout the paper instead of other similar but distinct terms, such as crowdsourcing, collective intelligence, collaboration or commons-based peer production.

We are tempted to speak of a "new model of production" (Benkler, 2002) and to think that these practices originate from or only are relevant to our information society and its technological affordances. In essence though what has changed is only the available technology of each era, and the pace of interaction, and not the model, nor the practice. The advent of new technologies, especially the ubiquitous introduction of social media to all aspects of life, has enabled people to communicate, distribute information, and construct knowledge in large scale, and in ways that surpass the physicality of space and time. Due to the slow pace of interaction though, for collaborative products of the past we usually tend to focus on the final product, and we ignore technologies and people that affect composition, dissemination, and preservation, such

[2] www.wikipedia.com, http://www.eol.org/, http://www.galaxyzoo.org/.

as typesetters, printers, editors, illuminators, copyists, and others who through their interaction with the final product added to its corporeality.

What today makes mass collaboration initiatives seem different than before is that most are complex projects that do not follow "market-based, firm-based, or hybrid models" as defined by Benkler (2002, p. 373). What was different before however was the fact that lack of communication and technology and associated costs in time and resources rendered large-scale collaborative projects impossible or excruciatingly slow. This does not mean that such projects did not exist. They did exist but because the process was much slower than today, they often were imperceptible or were seen as products of one central authoritative figure. In fact, as much as we go back in time we will see that many more people than today were involved in a final product, and greater cooperation, commitment and involvement were necessary to do so. Historic initiatives (such as the Talmud, the Septuagint, or the Homeric Epics) products of a specific community of practice, now considered part of humanity's shared heritage, were not intended to benefit everyone, and sometime did not start out as such.

This paper explores historical "collaborative sensemaking" through the lens of the Talmud, a central text in Judaism, product of centuries-old dialectic interaction among people and information. The paper will assess how the community of practice that developed around the Talmud used technology, artifacts, information, and social practices in order to give meaning to shared experiences and how specific technological and social strategies facilitated effective sensemaking. Despite significant technological changes, we believe many of the core principles that support collaborative sensemaking in communities of practice today are not something new, but a reiteration of principles that have already been tested through time.

The Talmud

The word "Talmud," essentially meaning "study" or "learning," has come to denote the "totality of spiritual, intellectual, ethical, historical, and legal traditions produced in rabbinic circles from the time of the destruction of the Second Temple in the first century until the Muslim conquest at the beginning of the seventh century" (Stephen, 1972, p. 470). "Learning," the focal component of the Talmud, firmly positions this monumental undertaking in the discourse of communities of practice.

Central to the Talmud is the *Mishnah*, a collection of rabbinic traditions redacted by Rabbi Judah ha-Nasi at the beginning of the third century CE. These traditions, faithfully transmitted according to tradition by Moses to the earliest rabbis through each generation, formed the "Oral Torah," a large part of the revelation that was granted to Moses orally, beyond the smaller revelation in writing, the *Torah* (the Pentautech or first five books of the Old Testament). The ancient rabbis saw the Torah as a divine text that included all of God's will and knowledge of life. They also considered that only they knew both the written and oral Torah, and as such they were the ones that qualified for leadership over the people of Israel (Goldenberg, 1984, p. 130). Additional commentaries by subsequent rabbis up to the 7th century were later added to the Mishnah. As a literary form, the Mishnah enabled the oral tradition to be repeated and memorized.

The text of the Mishna is set in the middle of the page, and it is surrounded by commentaries by later rabbis.[3] Although it follows a prescribed pattern, each page is fluid and changes according to the length of the Mishna portion and the accompanying commentaries. The "meandering" layout of the text (Neusner, 1973) allows a dialectical construction, comprehension, and interpretation of the text that is quite different than the linear way of reading texts that we are used to in our era. The reader can see concurrently available sources and commentaries on the same page, and they can selectively navigate and interact with the text as they want.

The Mishnah though should not be seen as a consistent and unitary whole: Rabbi Judah ha-Nasi's preoccupation was not to put forth an authoritative treatise of legal stipulations, but to preserve material, both laws (*halakhah*), as well as narratives (*aggadah*), as he received it, even when it was contradictory to other parts of the Mishnah. Variants and contradictions in the text do not reflect errors, but rather conscious editorial revisions, dissenting opinions, and emendations of the text during subsequent centuries (Stephen, 1972, p. 327). Revisions and emendations became rarer only when the text became more and more sanctified in the eyes of scholars (Stephen, 1972, p. 477).

Alternative readings of the Talmud

There are numerous treatises on Talmud's history and literary evolution. Recently the dialectic character of its basic page that allows multiple voices to be heard, and includes commentaries and references in an easy-to-see display format has been adopted as a sample

[3] For an interactive explanation of the text, see http://people.ucalgary.ca/~elsegal/TalmudPage.html.

layout in a variety of articles that discuss the subject. Such examples discuss the Talmud as an example of a multivalent document that permits incremental addition of content (Phelps & Wilensky, 1996). Others see the Talmud as a metaphor for a scientific text (Rozenberg, M., Munk, M., & Kainan, 2006), while others see it as a format that lends itself to the presentation of qualitative research (Rodgers, 2009).

The Talmud as an international collaborative sensemaking project

In this paper, the Talmud is understood as the embodiment of collaborative sense-making. In fact, its printed form (5,894 folio pages in the standard editions) is the infrastructure whereupon a continuously evolving body of knowledge has been constructed through centuries of commentaries, interventions, and interpretations by generations of Talmudic scholars. While the text exists as a collection of traditions, underlying and overarching strata of continuous interpretation, study, and codification by countless individuals throughout the centuries have produced a much larger corpus of knowledge that is not cut from reality, since it also reflects ordinary life and people. In this corpus, every interaction with the text (be it its reading by students of a religious school or online study groups, or its setting in print and the pagination it underwent) has left traces upon the main body of work.

In its printed form, the Talmud presents the totality of rabbinical tradition and knowledge in two distinct ways:

1) The totality of the text presents a hierarchical classification of knowledge and is divided first into six "orders" (*sedarim*, sing. *seder*), each dealing with a fundamental area of law and tradition. The six orders are further subdivided into tractates (*masekhtot*, sing.

masekhet), and the tractates into chapters (*perakim*, sing. *perek*). Chapters are further subdivided into groups of *halakhot*. Thus each *halakha* retrospectively belongs to a higher hierarchy.

2) The layout of the pages presents a faceted classification of this knowledge. The material is arranged in a ways that denote the historical stage, the nature of the contributor, the topic, the nature of the argument (question, objection, answer, justification), and the nature of dichotomy represented (e.g. if something is "forbidden" or "permitted," "ritually pure" or "impure").

As a product, the Talmud is truly an example of international collaboration: In ancient and medieval times, it was produced by individuals as far apart as in Babylonia, Palestine, North Africa, Muslim Spain, and Christian Europe. In modern times, North America is leading the way in its scholarship, and new media have changed the ways people interact with the text and thus the community itself.

Mass collaborations are perceived as something that technology and the Web has enabled, even more so what social media have made possible. As a successful example of mass collaboration across time and space, the evolution of the Talmud highlights the challenges that its community had to overcome in order to collaborate. Wenger, White and Smith (2009) define these challenges under three categories:

Rhythms: togetherness and separation. The formation of the Talmudic community over time and space required sustained and mutual engagement in a continuous and intense way. The notions of togetherness and separation had different implications in this context: Physical separation of members of the community due to historical conditions (mainly the dispersion of

Jews) promoted a longing for a common point of reference and for spiritual togetherness, while learning together promoted practicing in different contexts. For the community of people around it, beyond being merely a product, the Talmud was and is a technology, a platform that they can use in order to converse across time and space.

Interactions: participation and reification. Participation and reification are two important components of the sense-making process. Direct participation in a community (activities, conversations, reflection, debates etc.) has as a result the reification of the community's lived and experienced knowledge through words, methods, stories, documents, links to resources and other forms. In the Talmud, the emphasis is "on process and debate rather than authority or literalness," thus it engages the reader in an open-ended way to interact with the text (Rodgers, 2009, p. 268). Moreover, the Talmud is not read, but sung in the yeshivot (religious schools). This process embodies the collective and collaborative character of the Talmud, and the fact that each reader participates in this creative community (ibid.).

As a concrete example, the Talmud as a whole, and each page in particular, is the reification of this community's learning. This shared product is an outward expression of a community of practice and reinforces the community's identity, memory, and impact. This reification makes use of existing forms (language), but also provides new ways of producing, sharing, storing or organizing the material (printing press). Moreover, the layout of the Talmudic page as a technology itself combines participation and reification on the same surface (i.e. the possibility to comment on a document).

Identities: Individuals and groups. Community does not mean homogeneity. In the case of the Talmud, it is obvious that challenges and disagreements promoted the learning curve of the

community. The Talmudic community is not a static one, on the contrary throughout the centuries it was composed by members who entered or left according to their aspirations, motivations or purposes. Community members could also belong to other communities (e.g. printers would also be members of guilds), thus they had to deal with complex relationships. At times an available technology might contribute to tension and conflicts among members (for example, efforts to print the Talmud in alternate forms or layouts. At the same time this promotes greater possibilities for learning, since it offers novel ways for interaction and discussion.

The Talmud: Legacy of a Community of Practice

The Talmud exemplifies the learning component which is the focal point of a community of practice (Wenger, 1998). A diverse set of people came together and using various technologies (spoken language, alphabets, writing systems, typography, computers and the Web more recently) and a variety of media engaged in the production of knowledge, transcending place and time. In every era, the Talmud community assessed and used available technologies, and extended and adapted them to fit its purposes. The appropriation of a variety of practices enabled the creation of a robust, successful community. Members connected and interacted in meaningful contexts and were bound by a balance of independence and interdependence, by an emphasis on horizontal relationships, dynamic boundaries, and strong leadership (Wenger, White & Smith, 2009).

In this paper, in order to define the Talmud as a community of practice, we use the framework of three fundamental dimensions of a community of practice, as developed by Wenger, White & Smith (2009, p. 4-12).

Domain: The rabbinical legal, historical and spiritual traditions form the domain, a shared space around which the members of the Talmud community gather. The issues, challenges, and passions that these traditions incite bind the Talmud community together and through the learning process allow them to explore, define, and express their identity.

As the focal point of the community's learning process, the domain was not without controversies. On the contrary, the Talmud exemplifies how centuries of debating, disputing, arguing, commenting, interpreting, and contesting among the members of the community helped define better the domain. A highly competitive, even combative ethos prevails within the academy (Rubenstein, 2003, p. 2). Anecdotal and textual evidence shows how Talmudic scholars in Babylonia would engage in heated and vehement arguments, and although they would go until "wounding" each other, they held in high esteem the sharpness and vigor of their discussions (Rabinowitz, 1972, p. 467).

Practice: Their common and personal experience enabled members of the community to "live" knowledge, not just acquire it in the abstract. Scholars were expected to be pious, and behave in an ethical way, and in this sense, they were not only scholars but practitioners too. In fact there was a whole array of injunctions that both regulated the behavior of Talmudic scholars but also promoted the practice of what they studied. By learning in practice, they learned from each other and with each other how to be a person that well represented their community.

Community: The process of learning is not something that takes part outside of the community, nor is it a distinct part of the community. Scholars were immersed in the study of the Talmud, and this engagement made possible the interweaving of socializing and learning. Living in proximity, and immersed in the common study of the law, Talmudic scholars embodied this approach. This is not a linear process though. Diverse members come together athrough inquiries and debates. At the same time, comments and additions challenge community boundaries. Some of the members take upon them an active leadership role and this helps move the inquiry forward. In this they follow the Reader-to-Leader framework (Preece & Shneiderman, 2009), where from being only "readers" of content, they evolve to contributors, then to collaborators, and eventually to leaders, who participate in the governance of the community, set and uphold its "policies" and mentor novices. Strong leaders were crucial for the survival and success of the Talmudic community.

Analysis of technologies used

If we want to study the change in technologies used in the Talmud, we will recognize five discrete historical periods that roughly correspond to the evolution of literature and interpretation of the Talmud, but also to the technologies available in each era and to the state of readiness of the community, e.g. the degree to which the community was ready for change. These discrete periods can be summed up as follows (Stephen, 1972, p. 479):

a) Up to the 1st century C.E.: Development of the Oral Law (Technology used: Speech)

b) 1st to 7th century C.E: Codification of the Oral Law in the *Mishnah* and *Gemara*, commentaries by *Tannaim* (1st to 2nd century commentators) and *Amoraim* (3rd to 5th century commentators), and the *Stam ha-talmud* (anonymous Talmudic editors). Commentators located primarily in Palestine and Babylonia. (Main technologies used: Speech, writing, parchment)

c) Up to the 10th century: *Geonim*. Activity concentrated still in yeshivot in Babylonia, but considerable influence exerted over developing communities in Christian Europe, Moslem Spain, North Africa, and Eastern Mediterranean. (Main technologies used: Speech, writing, parchment)

d) 11th to 15th centuries: *Rishonim*. Decline of Babylonian centers. New academies and centers of study in Western Europe, North Africa and Spain(Main technologies used: Speech, writing, parchment)

e) 16th to 20th centuries: *Aharonim*. Undoubtedly the single most important characteristic of the period is the adoption of the printing press. ((Main technologies used: Speech, writing, parchment, paper, printing press)

f) 19th centuries to today: *Hokerim*. Historical developments, and particularly the Holocaust, have resulted in increased interest in the study of Talmud. The introduction of the digital medium to its study has introduced new opportunities, but also reservations in the study of Talmud. (Main technologies: Speech, writing, paper, printing press, Internet).

The Talmudic community adopted new technologies as they became available. At the same time would maintain technologies that suited the communication and collaboration among its members. In fact it would be interesting to study the pace of interaction of the community, since increasingly its scope expanded to include the whole known world.

We can see the layout of a Talmud page as the culmination of the community's learning process. In fact, it is an interface that structures the knowledge distilled in the community through the years. It would be interesting to see if other communities in turn adopted, adapted, or reshaped this concept.

But technology-mediated learning in the Talmud community is not a simple, static, or linear process. Its members experienced and maintained community through different orientations, i.e. activities and modes of communication and connection (Wenger, White, Smith, 2009). Each orientation has implications for the selection of the means and technology that the community selected throughout the centuries. It is interesting to note that the Talmudic community employed all of the orientations as presented in Wenger, White and Smith (2009), using each as needed in each era to support and promote community activities and interaction of its members. These orientations are as follows (to be further developed):

1) Meetings
2) Open-ended conversations
3) Projects
4) Content
5) Access to expertise
6) Relationships
7) Individual participation
8) Community cultivation
9) Serving a context

Utilizing six key dimensions of social media in the analysis of Talmud

Social media today have enabled greater interaction among users, and promote collaborative sense-making. Hansen, Schneiderman and Smith (2011) apply a framework of six key dimensions in their analysis of social media. We will use this framework in order to understand if these dimensions that define social media today are something novel, or if they are reiterations of centuries-old practices. Specifically in the case of the Talmud, we will see if and how such practices were applied. These key dimensions are:

- *Size of producer and consumer population*

  In most social media systems, the boundaries between producers and consumers are blurred, and roles are not clear cut, or inimitable. Furthermore, different social media systems accommodate diverse populations (individuals, small groups, masses).

  The Talmud exemplifies a system where producing population (commentators) are also consumers (readers of content), and the other way around. The boundaries among individuals in the Talmudic community were both hierarchical, but also blurred since everyone lived and learned together, benefitting from the other person's wisdom. Furthermore, the community used different technologies (alphabets, page sections, ways of interaction) in order to accommodate individuals of diverse backgrounds, education or skill levels.

- *Pace of interaction*

  A distinction has been traditionally made between synchronous (i.e. members interact at the same time) and asynchronous (i.e. member interaction can spread over

time) communication among various patterns of interaction, but this has also been blurred recently.

Because the Talmud is a body of knowledge based in the dialectic relationship of the community members with the content and with each other, the pace of interaction has always been both synchronous and asynchronous, and at times it has been blurred.

The pace of interaction does not seem to have been important for the expansion or the codification of the Talmud. On the contrary, the fact that people continued to be involved in it through a variety of available technologies and during long periods of time promoted its "sanctification" in the eyes of the community members, and this resulted in the work's continuity, persistence, and success.

- *Genre of basic elements*

The building blocks of social media systems are digital objects that can vary in type and size (e.g. tweets are limited to 140 characters). Variations and differences in type and size can fundamentally affect interaction patterns, and design choices.

The building blocks of the Talmud are the different chapters, tractates, and sugyot of the text that permit different levels of interaction, and different ways of expressing the material.

In fact, basic element of the Bavli is the *sugya*, a dialectical argument in Aramaic. It interweaves the different sources composing the Talmud joining them together through questions, objections, answers and justifications. What initially were distinct and unconnected parts of the Talmud are now connected with the *sugyot*. At times, the anonymous editors (stam ha-talmud) who inserted the sugyot did so in a way that

redefined the agenda in ways not compatible with what was initially in the source, or that combined various sugyot into overarching themes.

- *Control of basic elements*

Different social media systems provide different levels of control over their basic elements. Defining boundaries and setting barriers to entry for a community is critical as it defines the community's governance structure, and its distributed or centralized nature. The existence or lack of boundaries and barriers can have a regulatory effect on the behavior, interaction, and contributions of members. All these can eventually affect the success or failure of a community.

The Talmudic community had strict barriers of entry. But the boundaries of who could interact freely and contribute to scholarship had a regulatory effect on the community and strict governance and centralized nature of the community obviously contributed to its continuous success. Only Talmudic scholars were deemed pious and competent enough to meaningfully interact with the text. This does not mean though that the text was forbidden to the rest of the people. As the immense popularity of the study of the Talmud during recent decades shows people were not forbidden from seeking to understand it.

Frequently used and authoritative in the text is the phrase "Amre inshe" and Rieser (2001) argues it shows the centrality of the understanding of everyday life in the Talmud. The Talmudic text is not merely an abstract dialogue among rabbis, nor is it cut from reality. In fact rabbis incorporate and give voice to folk wisdom and traditions in their commentaries, and in this way they extend their community of practice to include simple people.

- *Types of connections*

Basic elements of social media can be connected in explicit or implicit ways, and their connection can be directed or undirected. Users intentionally and consciously create explicit connections (e.g. hyperlinking a wiki page to another one, friending someone etc.), while implicit connections do not imply intention of connecting to someone, but rather a connection are inferred in subtle ways (e.g. replying to a post, editing the same wiki page etc.). Furthermore connections and relationships in social media systems can be reciprocated or not: if two people are mutually connected, then we can speak of undirected connection, but when connections from one person to another one are not necessarily reciprocated, then they are called directed, in that they flow towards a specific direction. The strength of a connection can have different values and weights according to the number of digital objects that are exchanged between two individuals. Although usually people are connected to other people or objects, recently location has been introduced as a connecting tie.

The Talmud offers a rich tapestry of connections among its members and from members to content. Commentators, but also subsequent editors, and typographers of the text created explicit connections and references between sections of the text that can be easily seen in the printed form of the Talmud. Implicit connections are obvious among commentators who comment and interact with the same building blocks of the text. If one were to make a visualization of this network of scholars, one could also infer the weight of a connection according to the number of basic elements that each scholar interacted with.

- *Retention of content*

Retention period of content vary among different social media systems. Depending on the product or user settings, content can be fleeting (e.g. VoIP), "mildly" archived (e.g. Twitter), or permanent (e.g. wikis), or can fall anywhere between.

While social media rely on the longevity (or not) of the digital media, the Talmud has enjoyed centuries of persistent retention through different technologies. Before the codification of the Mishnah in the 3rd century, the rabbinic traditions were memorized and transmitted from generation to generation of rabbis. After its codification in the Mishnah, the traditions were augmented by commentaries, and formed the Talmud. In the 16th century, the text was put into printing through an elaborate layout and intervention by the printers and typographers. In fact, the study of the Talmud was defined by the new realities of the creation, transmission, and consumption of books and their contents, introduced by the shift from manuscript to print, and the impact of this shift on levels of literacy, modes of thinking and on the organization of knowledge (Cooperman, (date), p. 1).

Today, the Talmud tries to harmonize its "meandering" nature with the hyperlinked character of the Web. New Talmudic communities of practice are forming around this new medium.[4]

[4] http://www.e-daf.com/, http://dafyomi.co.il/.

Discussion: Reasons for success

The Talmud exemplifies the notion of collaborative sensemaking across time and geography. Its community of practice has been alive and thriving for over 2,000 years in an uninterrupted way. Here are some observations that we can deduce when we apply the frameworks of communities of practice to the Talmud.

- The Talmud does not leave any lacunae. Wherever there is an apparent lack of an authoritative postulation, this is meant so in order to entice commentaries and discussion by subsequent scholars. The Talmud provides content that people can build on. The Talmud was not constructed in a haphazard way. The Bavli (the Babylonian Talmud) was actually organized as a superstructure that rests on the foundation of the Mishnah. All subsequent different commentaries were constructed over this.

- It provides a variety of possibilities of interaction and gives people the possibility to participate according to their skill level: Various people participated in the construction of the Talmud in various different ways, according to their level of religious authority, interest, or technical skills.

- The Talmud had clearly outlined barriers of entry and regulatory policies for the members of its community. Scholarship alone was not enough for someone to be called a Talmudic scholar. Beyond mastering the while Bible and the Oral Law, a Talmudic scholar had to be pious and practice what he studied. Most importantly he should learn from and come under the influence of his teacher.

At times, tension and even enmity existed between *talmid hakham* (the Talmudic scholar) and *am ha-aretz* (common, uneducated people). Talmudic scholars were expected not associate with commoners by being in their company or dining with them.

- Authority figures were crucial for the perseverance of the Talmud throughout the centuries. In fact, people's involvement was in great part due to the bond-based influence emanating from an authoritative person. Authority was gained through knowledge and not any other kind of external bureaucracy or aristocracy. The status and rank of rabbis is defined by the degree they excel in their involvement in the dialectic argumentation of the Talmud. Within the academic hierarchy, a sage gains respect if he can successfully engage in verbal sparring against his disputant, while being unable to answer is seen as shameful and a type of social death (Rubenstein, 2003).

In fact the presence of authoritative figures explains the surprising degree of uniformity among different parts of the Talmud and reveals an increased degree of centralization in the preservation of the form of the Talmud. This of course is in sharp contrast to the multiplicity of master-disciple circles and competic academic centers (Stephen, 477).

- The Talmudic community was not only based on asynchronous, remote interaction. In fact, the tradition of commentary and explanation started when groups of rabbis and their disciples started gathering in order to study the tractates of Mishnah, to clarify their meaning, and apply their instructions to situations arising in their own lives (Rozenberg, 1984, p. 135).

The settings in which those discussions took place were various: private house, study-house (bet midrash), assembly house (bet vaad), academy (yeshiva), upper-story (aliya) (Rubenstein, 2003).

- The Talmud and its study are immersed in rituals. Before the codification of the Mishnah, the rabbinic traditions must have been transmitted orally in a ritualistic way that would facilitate memorization. Later on, throughout the centuries the rabbis developed such a complicated etiquette for Torah study that study became a religious ritual in its own right (Rozenberg, 1984, p. 167).

Conclusion

The Talmud accommodates many alternative notions of authority that introduce polyphony in the text (Rodgers, 2009). Because it is in essence a multi-authored document, some issues do indeed remain unresolved; the term "teyku" is then used ('it remains standing'), denoting that in the absence of authoritative proof, there is no solution to the problem (Rodgers, 2009, p. 267). This though is not seen as a weakness.

In fact, this is what makes the Talmud valid for today's world too, since still today scholars and lay people can actively be involved in its study. By incorporating such elements, it offers to people new possible points of entry through which they can interact with the text.

Initially, the printed text of the Talmud was a scholastic text. Its chief purpose is to preserve the record of earlier generations studying their own tradition and provide materials for later generations wishing to do the same (Rozenberg, 1984, p. 156). In modern times, the Talmud has not been studied as a means to arrive to the ultimate truth—as given by God. Modern scholars approach the text for information, not "truth" (Rozenberg, 1984, p. 165).

It is interesting to see how modern technology has introduced a new way of collaboration for the Talmud. While initially it was oral, it then was codified and commented upon. A third

stage can be seen when it was put in printed form and its present published version became the canon. A later period (19th through 20th centuries) can be understood as a return to orality, since the Talmud is studied everywhere, but people cannot really interact with the printed text. The online world offers new possibilities for interaction with the text.

What is the fate of Talmud or rather the fate of the representation of the Talmud, and its implications for its community of practice, in the digital age and the age of linked data and mash-ups? While people before could complain or "revolt" if the standard edition and layout of the text was changed, what are the implication in a postmodern world that seeks to give alternate meanings to reality?

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