Persistence of Collective Memory over 3000 Years: The Case of Ancient vs. Modern Israel

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Abstract

Collective memory is a set of historical narratives, beliefs and customs shared by a social group, such as a community, culture or nation, over generations. In this chapter, I present a few observations concerning the collective memory of the Jewish culture from the vantage point of the science of memory. Evidence for what has later came to be regarded as Jewish culture can be traced back >3200 years (i.e. >130 generations) ago. The early history of the culture amalgamated fact with fiction over scores of generations in orally-reliant communities before being put in writing >2300 years ago in a textual epitome, or credo, of only 63 Hebrew words. The long-term cultural persistence of this foundation core of the collective memory was set at the outset to rely on procedures to ensure regular semantic recitation combined with episodic reenactment. Since then and up to the present time, memories of a number of major collective traumas have been added to the repertoire of Jewish collective memory. In recent centuries the ancient credo has contributed to the revitalization and realization of a national movement; yet in doing so, it has also contributed to a rather fast evolution of Jewish collective memory, manifested in its ongoing differentiation into sub-narratives that differ, inter alia, in their attitudes toward nationalism, and in geographical distribution, religious hue and populist flavor.

Memory, the ability to retain and reconstruct information about past experience, is a faculty of many types of information-processing systems. The human brain is such a system. So is a social group. The shared pool of information concerning factual or fictional, recent or remote past experience of the group, is commonly referred to as collective memory. 'Collective memory' is an umbrella term, "that has as many interpretations as interpreters" (Wertsch 2002). Collective memory of the remote, absolute past, which is no longer capable of being personally experienced and recollected by contemporary individuals, is considered the 'historical memory' of the group (Halbwachs 1950). I will use the term 'collective memory' to denote 'historical memory' as well. Collective memory can refer to the memory of various types of human groups, including cultures and nations, and as such has an immense potential to mobilize and fuel national movements.

In this chapter, I will present a few preliminary observations and remarks concerning the collective memory of the Jewish culture from a vantage point of the 'Science of Memory' (Roediger et al. 2007). I will make the argument that Jewish collective memory should be considered, unless otherwise indicated, as the memory of a culture rather than a nation, and will use the term 'collective memory' and 'cultural memory' interchangeably. However, the reenactment of remote core elements of Jewish cultural memory has contributed in recent generations to the revitalization of an influential national movement that has culminated in the establishment of the modern state of Israel. This has contributed to accelerated evolution of Jewish cultural memory, and its differentiation into sub-narratives that differ, inter-alia, in their national orthodoxy, geographical distribution, religious hue and populist flavor.

The Conceptual Framework

I consider human cultures as biocultural 'supraorganisms' (Hölldobler & Wilson 2009), that store distributed experience-dependent, behaviorally-relevant representations over hundreds and thousands of years. Similarly to other memory systems (Dudai 2002), these supraorganisms encode, consolidate, store, modify and express memory items in the concerted activity of multiple types and tokens of sub-components of the
system; but whereas in the individual brain the sub-components are specialized cells, synapses and brain circuits that can store information up to the individual's life time, in cultures the memory traces are encoded in large distributed assemblies composed of individual brains, intra- and inter-generational interacting brains, and multiple types of artifacts that interact with brains.

My approach is anchored in concepts and findings of neurocognitive science. In the overall approach to the analysis of memory, I follow Marr (1981) in assuming that information processing systems can be heuristically described as operating on 3 levels, listed here top-down: The goal of the system ("The computational Theory"), the algorithms used to obtain the goal, and implementation of the algorithms in hardware. It follows that similar goals and algorithms can be implemented on different types of hardware, for example, in vivo or in silico, or animate and inanimate. Marr's 3-level taxonomy is not free of scholarly opposition (Peebles & Cooper 2015), and among others, interdependence of algorithms and hardware should be taken in consideration. Yet the 3-level account is useful in approaching the analytical and experimental dissection of information processing systems, memory systems included. I find it convenient as a starting point in the investigation of the mechanisms of collective memory, because it promotes exploring the applicability of research on memory in the brain, on which quite a lot is already known, to research on collective memory. At the end of the day, the value of such exploration will be gauged only by its ability to yield productive testable explanations and models and not only similes and metaphors. But similarity of phenomena observed in the memory of individuals and of collectives is still a reasonable starting point. Such similarity has been noted: memory phases (Braudel 1980, Candia et al. 2019), serial position effects (Roediger & DeSoto 2014), reminiscence bumps (Schuman & Scott 1989), false recollection (Welzer 2010), effect of psychological distancing (Zaromb et al. 2018), and induced forgetting (Stone & Hirst 2014).

The Model System

Scientific practice encourages the selection of model systems for the investigation of research questions. The selection of Jewish cultural memory illustrated in this paper is not done solely because I am Jewish, but also because several attributes render it
suitable for the investigation of long-term cultural memory. These include: Long yet identifiable past, continual to present (>130 generations; Liverani 2014); Rich archeological, textual and historical research; Memory traces that for millennia have exceeded the sphere of interest of the specific culture; Memory maintained mostly in the absence of the supportive binding of the physical borders of a homeland; Importance of memory and reenactment of the past is inherent in the culture; and last, geopolitical and cultural developments in recent centuries promote the potential for observing differentiation of collective memory on the fly.

At this point in the discussion it is apt to readdress the question why is it memory of a culture rather than of a nation. Definitions of 'nation' vary greatly, from the highly concrete to the theoretical. Two examples cited by Smith (2010) illustrate the spectrum. "A nation", so Stalin (ibid, p. 11), "is an historically constituted, stable community of people, formed on the basis of a common language, territory, economic life, and psychological make-up manifested in a common culture." Compare to "... the nation: ... an imagined political community - and imagined as both inherently limited and sovereign" (Anderson 2006). Yet the Jews lacked throughout most of their existence both territory and sovereignty. Even today, >70 years after the establishment of the state of Israel, about half of world Jews live outside it and most of them consider themselves members of other nations.

The Approach

One straightforward method to take a snapshot of cultural memory is to test its recall or recognition in contemporary individuals. Such tests are commonly considered to tap into semantic memory (Roediger & Crowder 1976), as opposed to episodic memory, which reflects personal experience. As discussed below, the traditional semantic-episodic dissociation is not always applicable in this context. The 'stimulus' that had been the source of the collective memory trace may have a well-documented, verifiable historical source, or remain a mystery. Sometimes, archeology, geology and anthropology manage to dispel the mystery engulfing even prehistoric collective engrams (Nunn & Reid 2016, Matchen et al. 2020). In other cases, ancient artefacts or texts are identified, that reflect events at the time of their composition or recount
earlier events or myths, and had served as the kernel of the remote memory. This is the case for a critical element of the 'core memory' of the Jewish culture.

What is 'core memory'? The concept stems from research on individual human memory (Dudai 1997). In attempts to estimate the capacity of human episodic memory, one identifies a rather limited reservoir of elemental experiences that keep surfacing in free recall, and serve as anchors for the reconstruction of richer recollections. These were dubbed 'core personal episodes' (ibid.). It is of note that core sets of events were also reported in collective memory (Zaromb et al. 2014; Abel et al., this volume). I will define here the Core Memory of a Culture/Nation as the minimal set of cross-generational mnemonic items that are considered by members of that culture/nation to define their collective origin, history and distinctiveness.

The Saving Story, The Original Core of Jewish Collective Memory

The foundation core of the collective memory of the Jewish people is encapsulated in the terse text of Deuteronomy 26, 5-9. These 63 Hebrew/112 English words, are the epitome of Israel's postulated ancient history, termed in Biblical studies The Credo (von Rad 1962, Note 1972), alias The Saving History or The Confession of the First Fruit. It is composed of 5 maxims that together comprise the origin myth of the Jewish people (not yet called 'Jews' at that time), which is centered around the saving from slavery in Egypt by God, Yahweh (i.e., Exodus from Egypt; the reason for The Confession of the First Fruit will become apparent shortly). The five maxims are the following: 1. A wandering Aramean was my ancestor; 2. He went down into Egypt and lived there as an alien; 3. The Egyptian treated us harshly, we cried to Yahweh, the God of our ancestors; 4. Yahweh brought us out of Egypt with a terrifying display of power, signs and wonders; 5. He brought us and gave us this land, a land flowing with milk and honey. It is hypothesized by the majority of Biblical scholars that the Credo represents the outcome of amalgamation over >30 generations of multiple ancient narratives from multiple regions of the land of the bible (Finkelstein 2013, Na'amani 2014, Noth 1980, Schmid 2012). Discussion of these hypotheses far exceeds the scope of this chapter. The same applies to the question of the historical veracity of the events claimed in the Credo (e.g., Cline 2014, Levy et al. 2015, Liverani 2015). Suffice it to say that from the point of view of memory research, once the Credo is considered
as a memorandum consolidated already over >2300 yrs ago, the earlier ontogeny of its narrative(s) and the historical veracity at the time of their composition are inessential for the investigation of its subsequent fate in collective memory.

The Credo was intended from the outset to serve as an item-to-be-remembered by its anonymous author(s)/redactor(s). Several lines of evidence support this assumption. First, this was the only text in the bible that had to be recited by biblical law at least once annually by every adult (male) member of the community, not only by priests. This had to be done during the First-Fruits Ceremony, in which farmers travelled in the summer to the temple with offerings of the first products of the soil, acknowledging Yahweh as the source of their land fertility and the true owner of its products as well as the guide of Israel's history (Tigay 1996). The 'Saving History' alias 'Confession of the First Fruit' hence came engulfed in a procedural mechanism that promoted its encoding into both personal and collective memory. We will return below to this mnemonic strategy. After the destruction of the 2nd temple in Jerusalem in 1C AD, an alternative mnemonic procedure was introduced to ensure annual recitation, by integrating the saving story into the earliest Passover Haggadah (2-3C AD, Bokser 2002). Over time, elements of the saving story were also integrated into prayer cycles.

Second, the text was equipped with mnemonic devices. A salient one already at the beginning of the text is alliteration (in Hebrew the first 3 words start each with Aleph and are exceptionally memorable, אֲבִיאָד, Arami Oved Avi = A wandering Aramean was my ancestor). Another mnemonic device, throughout the text, is poetic parallelism. Third, the short narrative is remarkably full of action and dramatic. Altogether, a text to remember.

What is Remembered?

Though the Credo is a good starting point for gauging Jewish cultural memory over the ages, and its influence on Jewish self-identity and national aspirations can't be overestimated, it is clearly not expected to have remained in isolation over thousands of years in the depository of Jewish collective memory. We set out to also identify the spectrum of items that have been accumulated in that memory since the Credo was formulated.
Toward this end, we subjected a total of 679 adults (age 18-91) in two major Jewish communities, Israel and the US (NYC), to a free recall test. To reduce excessive variability in exposure to traditional and secular sources of information, ultraorthodox sects were not tested in both locations. The test was as follows: Individuals were requested to participate in what was defined as a simple, short, memory questionnaire with one question only, without being told beforehand what this question is going to be. The test was preceded by a 2 min oral introduction, in which the notion of collective memory was defined. The printed instructions on the test forms handed to the participants were: "What in your view are the 10 most important elements of the Collective (Shared) memory of the Jewish People throughout the ages but before the establishment of the state of Israel in 1948. Please provide intuitive, fast answers, 1-2 words each. No need to explain your selection. The order of items in the list is not important". The instructions were in Hebrew in Israel, Amharic for Ethiopian Jews in Israel, and English in the US. The only personal information requested was age and gender. The task was completed in ~10 min. A total of 6384 replies were thus obtained.

Contemporary Israelis came up with 4 items at the top of their list. The Holocaust was listed by 81% of the participants. Fifty-three percent listed at least one event that took place in Palestine during half a century before the establishment of the modern State of Israel in 1948, including pre-independence immigration waves and clashes between Jew and Arabs. Exodus, i.e. the Saving Story, was listed by 50%, and the destruction of the Temple(s) in Jerusalem by 45%. Since each participant was allowed to list up to 10 items, many included more than one event that took place in Palestine in the aforementioned half century before the establishment of the state. Hence of the total replies, 15% referred to these local recency events, whereas 10% referred to the Holocaust, and 7% each to Exodus and to the destruction of the Temple(s). The probability of recall the aforementioned items as well as of the other most frequently recalled items was independent of age, demonstrating collective memory stability over at least 3 generations.

Recency, Bumps and Lacunae
Multiple phenomena stand out in a plot of the magnitude of recall vs. the factual or fictional time of the recalled event (Fig. 1). First, a recency effect, in line with a previous report on collective memory (Roediger & Crowder 1976). Second, multiple reminiscence bumps, a concept borrowed from personal autobiographical memory (Bernsten & Rubin 2004; see also Schuman & Scott 1989). The earliest of these refers to the Saving Story (Exodus allegedly ~14-13C BC). Additional ones are traces of traumatic events: Destruction of the 1st Temple in Jerusalem and the Babylonian exile (6C BC); Destruction of the 2nd Temple and the deportation of the local population by the Romans into the Diaspora (1C); the expulsion of the large Jewish population from Spain (15C); and the Holocaust (included in Fig.1 under 'collective recency').

A 'mnemonic lacuna' is detected for events between the 1C and the 15C. This extended period was not devoid of major historical and cultural events in Jewish life, including the flourishing of Jewish scholarship in Europe on the one hand (e.g., the Golden Age of Jewish Culture in Spain in the 8-13C) and terrible pogroms on the other. The former left a rich corpus of religious and secular writings and the latter were recorded either in real time or shortly afterwards (e.g., Bar-Yakov 12C, HaCohen 1575). Relevant information is also included in present-time history books and school curricula, but specific events do not surface intuitively in the recollection of the shared past. This lack of consolidation into collective memory raises the possibility that inhibitory mechanisms were engaged. One possibility that comes to mind, given demographic estimates (Jacobs 1906, DellaPergola & Even 2001), is that low density of contemporary Jewish populations prevented integration into collective memory. The minimal population density and kinetics of information transfer required for effective encoding of an item in collective memory, is a cardinal question that interfaces with multiple research frontiers in collective behavior of populations, social structure network, percolation theory, and last but unfortunately recently not least, epidemiology (Brazowski & Schneidman 2020, Hagen et al. 2018, Lee et al. 2010, Saberi 2015, Walters et al. 2018). This question far exceeds the scope of the present comments.

Another possibility is retroactive interference (Dudai 2002) by successive trauma, leading either to disrupted consolidation, inhibition of expression, or summation of memory of earlier events with that of the most salient one at the end of the series (e.g., the expulsion of the Jews from Spain, which is well remembered).
example of the concept in Jewish cultural memory itself is in the Talmud: "A parable, to what is it like, to a man who was travelling on the road when he encountered a wolf and escaped from it, and he went along relating the affair of the wolf, he then encountered a lion and escaped from it, and went along relating the affair of the lion, he then encountered a snake and escaped from it, whereupon he forgot the two previous incidents and went along relating the affair of the snake. So with Israel, the later troubles make them forget the earlier ones." (Babylonian Talmud, Berakhot, 13:71).

Retroactive or proactive interference may have also affected the fate of memories of earlier events in Jewish history. One example is Jeconiah's exile. Jeconiah was the king of Judah dethroned by Nebuchadneszer II, king of Babylon, and taken into captivity in 592 BCE together with thousands of Jerusalem's elites. This was no doubt a highly traumatic event, yet today, scholars excluded, few remember it. Another example is Shesbazzar, the First Prince of Judea that led the return to the Jewish elite to Jerusalem to rebuild the Temple by decree of King Cyrus of Persia in 538 BCE. The first Jewish prince that returned from the banks of the rivers of Babylon surely made a strong impression on contemporary Jews. Yet his memory disappeared from the collective. One can come up with the possibility that Jeconiah's and Shesbazzar did not survive in collective memory because of proactive (Shesbazzar) or retroactive (Jeconiah) interference by the destruction of the 1st Temple (586 BC). The role of retroactive and proactive interference in collective forgetting deserves a full discussion elsewhere.

Split Engrams

The US Jewish cohort came up with 3 items at the top of their list. The Holocaust was listed by 71% of the participants. Fifty-seven percent listed at least one item that reflect current Jewish family and community traditions, including holiday meals and dishes that originated or shaped in eastern European Jewry and imported to the US in the late 19- early 20C. Exodus = the Saving Story was listed by 42%. Since each participant was allowed to list up to 10 items, many included more than one item that referred to the aforementioned family traditions and folklore. Hence of the total replies, 26% referred to these traditions, whereas 9% referred to the Holocaust, and 7%
Exodus and the saving story. The US participants clearly prioritized folklore from the forsaken European diaspora over Zionist history.

The test was also performed on Ethiopian Jews in Israel. They were members of a Jewish community (Beta Israel, 'the House of Israel') that lived in Ethiopia in small villages alongside Christian and Muslim communities, and have been isolated from mainstream Jewish communities for over a millennium. We identified members of the community in Israel that were upbrought in Ethiopia and immigrated to Israel when they were >25 yrs old. Although a relatively small sample, the data were rather clear. First and second on their list were the elements of the core memory in the Credo: 73% of the participants listed the Exodus = Saving Story, and 37% at least one of the Patriarchs. In terms of percentage of total answers, 24% referred to Exodus, 12% to the Patriarchs. Only 2% of the answers mentioned the Holocaust.

Persistence and Updates

Taken together, the data indicate 3 main processes. 1. Preservation of an ancient core memory over thousands of years. 2. Memories of a few collective trauma have been added to the collective memory in the past >100 generations (Figs. 2,3). 3. Differentiation is taking place in Jewish collective memory, evident in separation of the memory of 'collective recency' as a function of geography. Social, ideological and geographical differentiation, accompanied by splintering of collective memory, occurred in Judaism many times in in the past. For example, between Jews in the land of Israel and those in the diaspora already before 1C (Barclay 1996), between Ashkenazi and non-Ashkenazi populations from the middle ages onward (Gerber 1992, Polonsky 2010), between sweeping religious movements and sects from the 17-18C onward (Scholem 1973, Biale et al. 2018), between orthodox and progressive movements in the enlightenment (Feiner 2002), and subsequently, among reform, orthodox, conservative, and nonpracticing Judaism (Plaut 2015). Some of these multiple dissociations still evolve. However, the unique situation at the present time is the involvement of an independent Jewish state, hence blurring the long-term detachment of culture from nation (e.g. Boyarin 2015), and the fact that the process can be analyzed in real time in front of our eyes. 'Nation-locked recency' dominates in the country in which the national narrative fits the original core memory (Israel), and
'culture-locked recency' in that community where new national identity was acquired (US). It is of note that in Beta Israel, who were separated from mainstream Jewish communities worldwide for over 1000 yrs, memory of events from ancient Israel remained the main element in their Jewish collective memory (Fig. 2).

On Memory Storage

What makes some memories persist whereas others fade away? Much is already known on what keeps memory going in the brain at multiple levels of neurocognitive organization (Kandel et al. 2015). In collective memory, much has been learned from the vantage point of the social sciences (Wertsch & Roediger 2008, Olick et al. 2015); new strata of information, particularly about algorithms and mechanisms, are expected to be contributed by application of big data analysis (Turchin et al. 2018, Candia et al. 2019), cognitive sciences (Roediger & Abel 2015), and the brain sciences (Zadbood et al. 2017, Gagnepain et al. 2020).

Analyses of mechanisms of memory persistence benefits from dissection into time domains. In the brain and cognitive sciences, this refers to short-term-, intermediate-term, long-term-, and remote memory (Dudai 2002, Kandel et al. 2014). It is of interest to comment on a few observations concerning short- and long-term time domains in collective memory in general and the context of Jewish cultural memory in particular.

Short-Term Collective Memory

Estimates of the lifespan of information that enters into collective memory can nowadays be obtained from measuring the decay in the use of cultural products on the web. The lifespan of the use of citations, songs, movies and biographies on the web, was reported to be <3 generations (20-30 yrs each), even after these cultural products have shifted from the active communication phase (e.g. Hirst & Echerhoff 2012) into passive accessible stores (Candia et al. 2019). Collective acquired flood-aversion in villagers along the Vltava river in the Czech Republic depended on living witnesses and faded away within 2 generations (Fanta et al. 2019).
The aforementioned findings are in line with a rolling, sliding-window transition of collective information capable of being personally experienced and recollected by contemporary individuals into collective memory that is already 'absolute', 'dead past', 'historical' (Halbwachs 1950); with 'communicative memory' of living experiences transmitted in the framework of individual biographies vs. that of the absolute past (Assmann 2011); and with the concept of the short-term 'histoire événementielle' of the French Annales school, which is the domain of the chronicler as opposed to long-term, slower processes that are the domain of the historian (Braudel 1980).

**Long-Term Collective Memory**

Having noted that short-term collective memory decays within a few generations, how do some collective memories consolidate into a long-term, persistent phase? 'Consolidation' was originally used in the cognitive and brain sciences to denote a process that takes place right after encoding and culminates in a stable long-term engram (Dudai 2004). However, in recent years it became evident that consolidation of items in memory in the brain may never come to a full closure and that engrams are labile throughout their life time (Dudai 2012, Dudai et al. 2015). It is tempting to assume that collective memories also consolidate and reconsolidate over time to acquire new content and social and emotional valence. Just as an example, the Saving Story is supposed to represent consolidation of multiple stories that took place over many generations (Finkelstein 2013, Na'amani 2014, Noth 1980, Schmid 2012). In this case the end product, a text, remained subsequently robust over time, but its construal as reality, myth, or guide for action remained labile.

Major items in Jewish collective memory, some traced back scores of generations ago, are not consolidated even in their content, let alone the manner they are construed in historical, cultural, and more recently, national context. Their updating and reconsolidation benefit from updated multidisciplinary scientific knowledge. Examples include the relative importance of the kingdom Judea vs. the Northern kingdom in the early history of Israel (Finkelstein 2013); the proportion of the population exiled from Jerusalem after the destruction of the 1st Temple in the 6C BC (Lipschits 2005); and the role of the Diaspora in Jewish life even before the destruction of the 2nd Temple.
in Jerusalem in the 1C (Barclay 1996). Modifications of this type are detected first in scholarly debates, but ultimately affect collective memory in the population at large.

That engrams of remote events are updated over time is a reflection of saliency and viability (Dudai 2012). This brings back the quest for the mechanisms of transformation of collective engrams into a long-term, viable form. A few observations concerning the long-term of Jewish collective memory may contribute to the understanding of attributes and boundary conditions of the process in general.

**The Role of Trauma.** Major items that entered the repertoire of Jewish collective memory after the Saving Story (itself containing traumatic elements) refer to collective trauma: Destructions of the Temple and the resulting mass expulsions, expulsion from Spain, and the Holocaust. This fits with what we know about the effect of trauma on the memory in individuals (LeDoux 1998); the kinetics of decay portrayed for neutral collective information (Candia et al. 2019) is clearly not valid for traumatic experience. In individuals, severe trauma can lead to memory that lasts a life-time. Recent data point even to the possibility of biological mechanisms of transgenerational transmission of traumatic experiences (Yehuda & Lehrner 2018), that may augment transgenerational transmission of the experience by instruments of collective memory. Third generation Holocaust survivors display increased anxiety (Hoffman & Shrirra 2017), and is yet unclear how long will this personal expression of collective memory persist into subsequent generations.

Birdseye view of the repertoire of major elements in Jewish collective memory tends to reinforce the view that, at least till very recently, it is 'lachrymose memory' (paraphrasing Baron (1928) on Jewish history). A glance at the history of nations suggests a decisive role for trauma but also for victories, national landmarks and cultural achievements (MacGregor 2016, Nora 2010). History did not provide the Jewish people with many significant victories and most of their history deprived them of physical homeland, but did provide them with outstanding cultural achievements. It is of note that the latter are not too popular in Jewish collective memory, while the memory of trauma reigns.
**The Advantage of Planning Ahead.** As noted above, it is evident that the Saving Story was composed at the outset with the intention that it will be remembered till the end of cultural time. This intention was translated into the introduction of mnemonic literary devices in the text, as well as into the formulation of religious and social procedures that will ensure recitation of the text on a regular basis by the entire community.

**The Power of Text.** Texts propagate cultural memory in many cultures. Epic poems (e.g. the Iliad) were recited and improvised by bards for millennia (Lord 2000). In this form of memory transmission, the entire group is exposed to the information, but a professional elite masters and expresses it. The Saving Story may have emerged from such types of orally-reliant stories, but was ultimately crystalized into a terse set of statements, that can be easily recited by regular peasants. Furthermore, it can be recited by individuals independent of community and homeland, hence acquiring properties of an antidote to collective amnesia in diaspora. But the text itself was insufficient to achieve the goal; the instrument became effective only by the addition of procedures.

**The Power of Routines.** Procedures and rituals are likely to augment the persistence of items in collective memory by inducing recurrent retrieval. This should be particularly effective if performance is enforced by religious law or social convention. The latter pencil in the collective calendar cycles of collective 'prospective memory'. This 'memory of things to do' is considered in psychology to apply to short- and medium-term tasks (McDaniel and Einstein 2007), but the collective supraorganism acts on a much slower time scale.

The postulated enhancing power of repetitions in collective memory brings to mind the observation that active repetition (test) is more effective than passive re-exposure to study material (McDermot et al. 2007). It is tempting to assume that similarly, active reenactment in the course of a ritual will be more effective than just bringing the memory to mind passively. This reenactment is what Jewish tradition demands in the act of recollecting the Saving Story. In the Passover Seder, the instruction is to specifically reenact the memory episodically: "In every generation a person must regard himself as though he personally had gone out of Egypt, as it is said: 'And you
shall tell your son in that day, saying: It is because of what Yahweh did for me when I came forth out of Egypt.” (Mishnah Pesachim 10:5, and Passover Haggadah). Further, probably to facilitate this reenactment in subsequent generations, in the Haggadah Pharaoh is not mentioned as a specific Pharaoh by name (Ramses II?), but rather as a generic term, a villain that fits into a narrative template (Wertsch, this volume) and with which one could identify any contemporary tyrant responsible for the hardship of the Jewish population.

A Tripartite Algorithm. The procedural cycles 'hold-reenact-hold' and 'semantic-episodic-semantic' involved in maintaining the Saving Story over generations, echo a tripartite algorithm of the structure, A-B-A (A, B = states of the system), that operates in long-term memory in the brain. It reflects the fact that in animate systems engrams are not monotonous fixed records (Dudai 2012). Two examples illustrate this algorithm. The first, in memory consolidation and reconsolidation, representations shift from an active form (in encoding or retrieval, respectively) into an inactive form (storage), and then again into an active form (recurrent retrieval) (Nader 2003). The second, personal experience is converted over time from an episodic to a semantic form, but in recollection of some events, retrieval reenacts the memory again into an episodic form that reengages a richer repertoire of brain circuits, before returning into a semantic representation (Furman et al. 2012).

The tripartite type of algorithm can be depicted as a process of compression-decompression-compression, and may reflect selective pressure favoring minimization of energy spending during prolonged storage (ibid.). This argument may apply to collective memory as well.

Damnatio Memoriae. The question what keeps a memory remembered has a complementary question, namely, what keeps a memory forgotten. In testing the collective memory of contemporary Jewish populations, a striking observation was that although Jesus was a Jew, and the rise of Christianity probably the most influential event in Jewish history in the past two millennia (Mitchell et al. 2006), almost nobody mentioned Jesus or the birth of Christianity as part of Jewish collective memory (<0.3% of the answers). This clearly is not because of lack of knowledge. Not a perfect
damnatio memoriae, but still effective collective denial, which can be traced back already to the early days of the religious conflict (Goldstein 1950).

**A Memory in the Other.** Psychology and neuroscience inform us that memory in individuals is markedly affected by the memory of others in the group (Dudai & Edelson 2016). Similarly, collective memory of a distinct group may also be affected by other groups. In this context, recurrent in discussion of the survival of Judaism is the notion that a significant force in defining and preserving it over the ages was antisemitism and Christianity, that considered Jews as The Other (Sartre 1948; for a recent bold discussion, Boyarin 2019). Persistence of memory, collective memory included, is hence not exclusively dependent on endogenous mechanisms. Incidentally, this argument seems to render the aforementioned repression of Jesus’ memory an intriguing topic for psychoanalytic approach to Jewish collective memory. But that’s a whole different story.

**When Collective Reenactment Unsets Collective Memory**

As long as generations adhere to proper sets of rites and procedures, collective memory can persist even in the absence of geographical and sociopolitical communality. But over time, distance, diverging history and societal and cultural changes can disunite the collective engram. This is why the collective memory of the Jewish people is now in a crisis, again.

First, the rites that kept the memory going for millennia, originally anchored in widespread religious practice, are weakened in parts of the culture by secularization. Second, the State of Israel is a game changer. The Zionist revival was facilitated by unique social, economic and geopolitical constellation (Bartal 2005), but was always motivated and justified by the collective memory, including by the last tenet of the Credo (*He brought us and gave us this land*). The translation of that core memory into reality promotes a split in the collective memory in front of our eyes, between the sovereign nation and the diaspora. With ongoing assimilation into the local society, the collective memory of Jewish communities outside Israel, especially in the US, is expected to further drift away from the Israeli version (Mnookin 2018, Wertheimer 2018). Within the scope of this brief commentary on memory, suffice it to say that it is
yet unclear how such drift will ultimately affect Jewish collective memory as a whole. Evaluation of deep philosophical and social currents in modern versions of the culture, that are currently viable mostly in the Diaspora, should be definitely dissociated from folkloristic trends; lochs and bagel and gefilte fish are unlikely to serve as the proper replacement for the Credo in keeping Jewish memory going in the long run.

A cultural memory of over 3000 years has survived remarkably in the lack of a national territory, aided by wisely encapsulating its core in a condensed message and inventing procedures that reenact that message each generation anew. But when this reenactment has culminated not only in retrieval of the memory but also in geopolitical realization of the ancient message encoded in it, a dominant element in the collective memory gained a strong, local nationalistic flavor, and the collective memory as a whole started to quiver uncomfortably. Dreams may support memory better when they do not come true.

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Remote and long-term cultural memory. Israeli Jewish adults (N=379, age 18-91, average 56 yrs) were instructed to list in free recall up to 10 memory items that they consider as the most important in Jewish collective memory since ancient times to 1948 (the date of declaration of the state of Israel). The total number of answers was 3564. The graph depicts the number of items recalled vs. the century that these items are traditionally believed or historically known to refer to. Major events are indicated to illustrate the historical narrative of the culture.
Fig. 2.

**Legend:** A. Schematic depiction of the major elements of the core collective memory in two major contemporary Jewish populations, in Israel and in the US, that together comprise close to 90% of world Jewry. The shared core was supplemented in recent generations with different 'collective recency', that in the Israeli group refers to pre-1948 historical events leading to the establishment of the state of Israel, whereas the US group refers mainly to family and community traditions and folklore originating in the culture of Jewish immigrants from Europe in the late 19-early-20C. B. Type of content of collective memory (Ancient Israel, Later history, Cultural traditions) in Israeli Jewish participants, US Jewish participants, and Jews in Israel raised in Ethiopia and immigrated to Israel at age >25 yrs. An Israeli population of a similar age group is presented as control.