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Zhang W. (2012), Individual and Collective
Consolidation. Analogous Processes on Different Levels.**

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Review of Anastasio, T. J., Ehrenberger, K. A., Watson, P. & Zhang W. (2012) *Individual and Collective Consolidation. Analogous Processes on Different Levels*. Cambridge, MIT Press.

Individual memory and collective memory have for a long time been topics of different disciplines and so, subject to different methodologies and conceptualizations. Whereas individual memory is in general studied in psychology laboratories through quantitative methods focused on memory accuracy, collective memory has been the object of historians and anthropologists who are mostly concerned with the contest and negotiation processes that serves some group identity project (Wertsch, 2009). *Individual and Collective Memory Consolidation* constitutes an exception to this usual dichotomy, proposing a clear and well-structured model of memory formation that bridges the gap between individual and collective memory studies.

The authors of this erudite book – a neuroscientist and three PhD students coming from diverse fields– defend the thesis that even if individual and collective memories may differ in their intrinsic structures, the processes through which both memories are formed are analogous, and that is why a single theory can explain both of them. In neuroscience literature, memory formation is known as the process of consolidation, which more specifically refers to the progressive post-encoding process of stabilization of labile memory items held in the short-term memory buffer until they become stable and long-term memory representations ready to use. Because the aim of the authors is to expand this concept to humanities, the book mainly centres on the formulation of a comprehensive model of memory consolidation. The description of this model is developed after a brief review of the history of the concept of memory consolidation (Chapter 2) and a working definition of collective memory -which is basically considered as an emergent phenomenon that is more complex and broader than the sum of the memories of the individuals who compose the collective (Chapter 3).

Chapter 4 provides an overview of their model of consolidation. Their model is inspired by McClelland et al. (1995) two-box model which consists of a buffer, which temporarily holds memory items over the short term for further processing, and a generalizer that clusters similar items together and categorizes them. This model, however, presents a limitation: it cannot explain why certain memory items are or are not retained because it does not consider the content of memories, that is, their meaning. That is why Anastasio et al reformulate it and propose a “three-in-one” model, which adds a third component between the buffer and the generalizer: the relater. The relater selects items from buffered storage and establishes relationships between memory items imbuing them with meanings while connecting them with other new and old items. In order to capture the full range of influences on the consolidation process, a fourth element is introduced: the entity in which the consolidation process takes place. It can be an individual person, or a particular social group, or even a nation. The entity represents the non-mnemonic factors such as the goals, plans, emotions and desires of the individual or collective that can influence all the three stages of the memory consolidation process. An important feature of Anastasio’s model is recursion: all the components of the model are interconnected in a two-way direction, so that already consolidated memories can influence which items to attend in the buffer, which ones to draw from the generalizer, or direct the way in which the relater relates the selected items.

Anastasio et al dedicate one chapter to the development of each of the four components of the model (chapters 5, 6, 7 and 8) . Each chapter not only deepens their description but also gives plenty of concrete examples at the collective level with the purpose of providing evidence for the usefulness of this conceptual framework for humanities. In a society, for example, the material culture -like documents, pictures, monuments, etc- provides unconsolidated and “raw” material. Archives (through archivists) and mass media would correspond to the collective buffer because they are characterized by the attentional tagging. The “relaters” or social hippocampi (making an analogy with the hippocampus which is the brain structure that plays a key part in identifying and creating associations between memory items at the individual level) would be historians, journalists, and other social groups who try to place an event in context and determine its features and meaning. Analytic and popular history, as well as narratives and collective identities (like national identity, or class consciousness) would be forms of generalization, and so, forms of collective memory that once formed, recur to influence further memory consolidation. The goals, emotions, desires and other non-mnemonic properties of the collective entity, like the establishment of truth as a desire of the historical scientific entity (but other political factors and personal goals and desires of scientists too), also influence each stage of the consolidation process.

However, the main evidence the authors pretend to provide in favor of the functional analogy between individual and collective memory consolidation is presented in the last part of the book (Chapters 9, 10 and 11). In this section, Anastasio et al analyse the Chinese Cultural Revolution as a social trauma that produced in mainland Chinese people a collective retrograde amnesia for literature and literary figures that were well represented as labile memory items at the time of the Communist takeover, but not for religious personages, tenets and practices which had been consolidated generations before and were already ingrained in the society.

Overall, *Individual and Collective Memory Consolidation* is a good reading for varied readers. Even if it clearly and mainly constitutes an invitation for social scientists to analyse collective memory in a more systematic way using a model borrowed from cognitive science, it is also of interest for neuroscientists and cognitive psychologists who can find a novel reformulation of the process of consolidation of individual memories. Furthermore, because of its clarity, erudition and constant use of examples, it is apt and very informative for a general public interested in memory issues. Historians concerned with 20th century Chinese history will also enjoy reading the last section of the book.

Just some words to end: the proposal developed by Anastasio et al makes me wonder until what extent it is fruitful to apply one single model to different levels of analysis, like the individual and the collective levels, the last one which in turn includes various and different collectives, like couples, families, communities, nations, etc. Because of the interactions between individual and collective memory –interactions that are deliberately omitted from the book to focus exclusively on the analogy– the collective memory level seems far more complex than the individual one. Taking one example mentioned in the book, the consolidation of historical knowledge not only can be influenced by goals and desires of the collective entity –the community of historians–, but also by the goals and desires of the particular historians (page 176). That happens because even if collectives can be considered as more than the sum of the individual

parts, collectives are also composed by individuals and, in some cases, by other collectives. And this points to a fundamental difference between individuals and collectives. In Anastasio et al's proposal, it seems that the emphasis on the analogy and the systematisation of the collective memory consolidation has been done at the expense of a reduction of the complexity of the collective memory phenomenon. Anyway, social scientists will be the adequate public to judge the utility of this innovative conceptual framework to study collective memory formation, and maybe to continue to enhance and broaden this original proposal.

McClelland, J. L., McNaughton, B. L. & Reilly, R. C. (1995). Why there are complementary learning systems in the hippocampus and neocortex: Insights from the successes and failures of connectionist models of learning and memory. *Psychological Review*, 102(3), pp. 419-457.

Wertsch, J. V. (2009). Collective memory. In P. Boyer & J. V. Wertsch (Eds.), *Memory in mind and culture*. Cambridge, Cambridge University Press, pp. 117-137.

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