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Reports

Effects of correspondence between encoding and retrieval organization in social memory☆

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ABSTRACT

Memory research has shown impaired recall performance when a subset of the studied stimuli is presented at recall (the part-list cueing effect, Slamecka, 1968) or when the recall is collaborative (collaborative-inhibition effect, Weldon & Bellinger, 1997). In two experiments we explore these effects in an impression-formation context and compare two prominent accounts (retrieval blocking versus strategy disruption) for them. We varied the correspondence between item organization at encoding and retrieval, either by manipulating the organization of part-list cues (Experiment 1) or the organization of the stimulus list that was later recalled collaboratively (Experiment 2). Results showed that when encoding and recall organizations did not correspond recall was impaired, replicating part-list cueing and collaborative-inhibition effects. However, when encoding and retrieval organization corresponded, these effects were greatly reduced. Such results support the recall strategy disruption hypothesis and challenge the retrieval blocking account. Implications for understanding memory in a social context are discussed.

Anyone who has participated in a college class reunion knows that memory is a cooperative and social endeavor. A multitude of details (awkward details, most of the time) suddenly come to mind and you find yourself remembering episodes that you thought (and sometimes, hoped) were forever gone. But memories from the past do not always facilitate further memory. Sometimes cues from specific memories can disrupt altogether the course of recall. Being told the name of your math teacher during your freshman year when you are trying to remember the name of the school's star athlete may hinder your memory attempts beyond hope.

Intriguingly, research concerned with memory in social information processing has often been oblivious both to the importance of externally provided cues and to their collaborative nature. Memory has often been portrayed as an individual mental activity performed under a minimum of external influences. Yet as the introductory examples illustrate, the social and informational context can facilitate or impede memory for past events. Moreover, the information we acquire is organized during encoding in a particular structure. Later, when that information is to be retrieved, the context that is active at the time may or may not correspond to the previous organizational framework. Such correspondence (or lack thereof) should influence one's ability to remember previously acquired information.

This paper reports two experiments exploring the effects of such correspondence on information recall. To do so, we use two well-established paradigms in the cognitive literature on memory effects. This literature has shown that when participants are presented, at the time of recall, with a subset of the stimulus items provided earlier, the recall of non-cued items is less than when recall is performed without presentation of those items — the *part-list cueing effect* (e.g., Anderson & Bjork, 1994; Nickerson, 1984; Slamecka, 1968). Similarly, collaborative-groups, composed of individuals recalling together previously presented items, do worse than nominal-groups (composed of an equal number of participants tested individually) — the *collaborative-inhibition effect* (e.g., Basden & Basden, 1995; Basden, Basden, Bryner, & Thomas, 1997; Weldon & Bellinger, 1997; Weldon, Blair, & Huebsch, 2000). Although part-list cueing and collaborative-inhibition effects emerged in different literatures, Basden et al. (1997) suggested the existence of a parallel between the two effects namely that the theoretical accounts of part-list cueing can easily be extended to collaborative-inhibition.

Our research had several goals. First, we tested the effects of correspondence between encoding and retrieval contexts on retrieval interference. Second, we explored further the parallel between part-list cueing and collaborative-inhibition and extended this work to person-memory. Third, we compared two of the most prominent accounts of retrieval interference effects, the *retrieval blocking account* and the *recall strategy disruption hypothesis*. We conducted two

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experiments to address these goals. In Experiment 1, using a part-list cueing paradigm, we manipulated the degree of correspondence between the organization of stimulus items and the organization of retrieval cues represented in the part-list cues. In Experiment 2 we manipulated the degree of correspondence between the stimulus lists of different members of collaborative and non-collaborative recall groups. In both cases, the recall strategy disruption hypothesis predicts retrieval interference to be a function of this correspondence, whereas no such prediction can be derived from the retrieval blocking account.

Part-list cueing effects

In the part-list cueing paradigm (Slamecka, 1968) participants are presented a list of words for future recall. Before the recall task, participants receive a written subset of the stimulus items as cues and are instructed to recall the remaining items, whereas a control group, which is given no cues, is asked to recall as many of the items as possible from the entire list. Results typically show that participants who were given recall cues recalled a smaller proportion of the non-cued items than did those in the absence of cues. This finding was surprising because it contradicted the assumption that the access to a subset of associatively stored items would increase the probability of retrieving the non-accessed items (e.g., Tulving & Pearlstone, 1966). Instead, providing retrieval cues not only failed to facilitate the recall of the remaining items but actually diminished recall.

Two prominent explanations for the part-list cuing effects are the *retrieval blocking* account (sometimes called *occlusion*, see Anderson & Spellman, 1995) and the *recall strategy disruption* hypothesis. According to the *retrieval blocking* account (Rundus, 1973), the probability of an item being recalled given a specific cue is a function of the portion of associative strength that is drawn on by the item and the cue (relative to the sum of the strength of all items associated with that cue). As a consequence, cueing list items at recall increases their accessibility relative to non-cued items. Therefore, cued items are more likely to be recalled first and to block the recall of the less accessible non-cued items. Alternatively, the *recall strategy disruption* hypothesis posits that when participants are asked to recall the stimulus items, they set up a recall plan that will most likely correspond to the way the items were encoded and organized when they were learned. Providing part of the learning set as cues disrupts this initial retrieval strategy because participants will deviate from their original recall plan and follow whatever recall strategy is suggested by the part-list cues (Basden, Basden, & Galloway, 1977; Basden & Basden, 1995; see Basden et al., 1997 for a review).

Part-list cueing in social memory

Garcia-Marques, Hamilton, and Maddox (2002, Experiment 3) extended part-list cueing to an impression-formation paradigm. Participants were first given several traits that described a target-person to induce an initial trait-expectancy. They then were asked to form an impression of the person as they read a list of 30 sentences describing the person's behaviors. Participants' memory for this information was later assessed in one of two conditions. In the part-list cueing condition, participants received four of the previously-presented behaviors and were asked to use these items as cues to help them retrieve the behaviors or to estimate the frequency of behaviors reflecting the traits presented earlier. In the no-cues condition, participants were asked to perform the same tasks without the provision of cues. Participants who were given the sample of behaviors as cues recalled fewer items than did those in the no-cues condition. This finding received additional support in a recent replication (Garrido, Garcia-Marques, & Hamilton, 2011), confirming the extension of part-list cueing effects to person-memory contexts.

The purpose of our first experiment was to provide a direct test between the two accounts of part-list cueing effects, *retrieval blocking* and *recall strategy disruption*. In our view a useful direct test would be to compare two conditions in which the same part-list cues are provided, but in different arrangements. In one condition these cues would correspond to the organization in stimulus presentation whereas in the other condition the cues would diverge from that organization. The retrieval blocking account would not predict any difference in the effects of cues across these two conditions because exactly the same cues were being used. However, the recall strategy disruption hypothesis would predict that the disruptive effect of part-list cues would be reduced when cue organization corresponds to the participants' recall strategy.

Experiment 1

In Experiment 1 we manipulated the correspondence between the organization of the stimulus information at encoding and at retrieval through the organizational framework provided by the part-list cues. Our manipulation was based on earlier work regarding the way the information acquired in multi-target settings is organized in memory (e.g., Pryor & Ostrom, 1981). In fact, although most studies in person-memory use single targets as stimuli, social life is not a series of individual encounters. Often social perceivers are immersed in multi-target settings such as a party, a job meeting, or a ride on a commuter train. Research has shown that social perceivers often organize multi-target information by target-person, but they also resort to alternative forms of organization like trait-based and context-based categories and there seems not to be an overall preference for one particular form of organization (Ostrom, 1981; Ostrom, Pryor, & Simpson, 1981; Pryor, Simpson, Mitchell, Ostrom, & Lydon, 1982; Sedikides & Ostrom, 1988; 1990). The specific basis of this organization is flexible and probably depends on the specifics of its learning history (McCann, Ostrom, Mitchell, Herstein, & Pusateri, 1983). This literature also offers some possible ways to identify which organizations people spontaneously use to represent that information. Consequently, it is possible to create competing designs in which different kinds of organization of information can be used.

Building on this idea, we provided participants with a list of behavior-descriptive items organized by individuals, personality-traits, or contexts. Immediately before recall, they were exposed to a subset of those behaviors.[1] In one condition, that subset followed the organization used at encoding whereas in another condition it presented an alternative organization.

We predicted that (a) presenting retrieval cues will impair free recall of non-cued behaviors (replicating the part-list cueing effect), and (b) when the organization of retrieval cues does not correspond to the encoding organization, the magnitude of the impairment will be increased.

Method

Participants and design

129 undergraduate students (109 female; $M_{age} = 21$; 20 male; $M_{age} = 21$) participated in this study for course credit. Participants were randomly assigned to the conditions of a 3 encoding organization (individuals: *John/Peter/Louis/Anthony;* personality-traits: *intelligent/friendly/ecological/artistic;* context: *home/vacations/work/public-holiday*) × 3 part-list cueing organization (correspondence,

[1] Our manipulation of part-list cueing was taken from Roediger, Stellon, and Tulving (1977) and differs slightly from the original Slamecka's manipulation in that participants were asked to re-study the cues for a brief time and then are asked to recall all of the items presented.