

What do People believe about Memory?

Beliefs about the limits and the reliability of human memory are important because they govern our judgements and evaluations of the stories other people tell in everyday and forensic contexts. Psychologists and neuroscientists have been studying memory for more than a century. To what degree have the results of scientific research been incorporated in the psychological folklore? Do people typically nurture ideas about memory that conflict with the current knowledge, or do they have scientifically realistic ideas? To have some tentative answers to these questions, we carried out a nationwide telephone survey in two steps, asking representative samples of 1000 adult Norwegians a set of general questions



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about memory (Magnussen et al., 2004), selecting questions that are frequently asked by the media.¹

We started with two questions that memory experts are frequently asked. First, do you think it is possible to train memory? Weekly magazines publish articles on memory enhancing techniques – how to improve your

memory – most of which are rephrasing of the various mnemonic techniques, but sometimes the mnemonic techniques are presented as suitable for overall memory improvements. The scientific literature on memory expertise indicates that the superior memory of experts in the various fields, such as chess and sports, is limited to domain-relevant information and does not carry over to other fields (Tulving & Craik, 2000). Thus scientists would tend to answer that memory cannot be exercised in this way. However, when we probed this “muscle” concept of memory, the results showed that an overwhelming majority of the participants, 94%, believe that the memory capacity can be trained, and only 2% were sceptical. Closely linked with the idea of memory exercising, is the question of whether long-term memory has a limited storage capacity or is limitless. This question is illustrated by the textbook anecdote of the professor of ornithology who stopped learning the names of his students because each time he learned the name of a student he forgot the name of a bird. However, memory science is not aware of any limitation on the amount of information the brain is able to store and retrieve. Most classical papers on the memory for large amounts of information suggest that human long-term memory is virtually limitless. Recent evidence that the brain is continuously forming new synapses and even growing new neurons (Gould et al., 1999) suggests a system that might be expanding according

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to the needs. Whatever memory researchers might believe, the results of the survey show that a majority of the participants (69 %) believed there was a limit to memory.

How does memory change across the life span? We asked four questions. First, what do people believe about the memory of small children as compared with the memory of adults? The scientific evidence is quite clear, the memory reports of children aged 3-6 years are basically correct if they are questioned properly, but contain fewer details than do the stories of older children and adults (Peterson, 2002). On this question, the public does not agree with science. A large majority (75 %) believed that small children's memory was at least as good as the memory of adults, and 38 % of the participants even thought it was better. This is interesting, given the daily experience parents have that children do not tell very much of what happened in the kindergarten or in school, and when asked what they did, a frequent answer is "we played". Second, how well do adults remember their early childhood? The concept of childhood amnesia refers to the inability of adults to remember anything from the early years of life Rubin (2000), usually before three years of age, although each of us may possess a grey zone with memory glimpses and vague images before genuine episodic memories emerge (Peterson, 2002). It is, however, unlikely that public belief when it comes to early memories would be shaped by the results of memory research; rather it is influenced by the informant's own childhood memories and would therefore conform to science, which it did. Very few informants (1 %) believed it was possible to have memories from birth onwards, and a few more believed that it was possible to have memories from the first year; in fact the public is more conservative than science, as more than 50 % of the participants believed that no memories were available before four years of age. This might be a little surprising, given the frequent articles on age regression in the popular media and the current popularity of various regression exercises offered at courses, seminars and non-professional therapies. Obviously, the overwhelming majority of the readers and listeners remain soundly unconvinced by such claims.

Episodic memory is the last form of memory to develop and the first to decline in old age, the latter fact being the target of many jokes about "Alzheimer light" among adults when something has slipped from the mind. We asked 1000 participants to judge their own memory performance over the last five years – had it become better or worse – and another 1000 participants to tell us at what age they believed memory started to decline. The results revealed interesting discrepancies between ratings of one's own memory, the general belief in time of onset of memory decline, and the objective finding from large-scale studies of memory changes in the adult life span. People have an unsupported pessimistic view of their own memory. Forty-three percent of the participants between 18-29 years of age reported that their memory had declined, a similar proportion of participants between 30-44 years reported a decline, and this figure rose to 50% for participants aged 45-59 years and to 62% for participants over the age of 59. However, when an equivalent sample of participants were asked when they thought age decline started, only 6% believed it started before 30 years of age, and more than 50% of the participants, irrespective of their own age, believed it started after the age of 50. The results of empirical research suggest, however, that the general change in perform-

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ance on episodic and semantic memory would not be noticeable until well after 60 years of age (Nilsson, 2003). When healthy young to middle-aged people claim memory problems, it is probably mostly due to misattribution of the normal memory problems all people have rather than genuine age changes.

On September 10, 2003, the Swedish foreign minister Anna Lindh was stabbed to death in a shopping mall in Stockholm, in front of many people. How well will these witnesses later remember this tragic and dramatic event? Are traumatic events remembered better or more poorly than ordinary events? The answer is not obvious. On the one hand, it might be argued that such events are frequently fast moving and that observations are unreliable, or that the drama of the event would lead to emotional activation that might interfere with, or block observational capacities and memory encoding. Therefore, the memories of emotional, dramatic events might be dim. Or it might be argued that such memories are so frightening that they are not allowed into consciousness, they are “repressed”. On the other hand, it might be argued, as current memory researchers do argue, that emotional activation might act by focusing attention and facilitating encoding of attended details, which would lead to enhanced memory for some aspects of the event at the expense of other aspects, but leading to vivid subjective memories of the traumatic event. The results of empirical studies appear to be quite straightforward. Traumatic events are better remembered than ordinary events both by children and adults, even if the memories are subject to similar distortions as memories of ordinary events (McNally, 2003). The results of the survey show that the majority of informants agreed with science, with 70% responding “better” and only 11% responding “worse” on the simple question whether dramatic events were better or more poorly remembered than non-dramatic events.

We also asked two questions that were directly aimed at probing the idea that frightening events might be repressed. One of these specifically mentioned the self-reported amnesic murderer – between 25 and 70% of suspects of violent killings claim no memory of the event (Parkin, 1997) – and asked whether the participants believed that such claims were real or faked. The idea that traumatic memories are blocked from consciousness can be traced to the psychoanalytic concept of repression, originally formulated to explain the blocking of painful childhood memories from conscious recollection. However, the concept of repression does not belong to the arsenal of mechanisms of forgetting in current memory research (Tulving & Craik, 2000), as it does not stand the test of relevant real-life studies of traumatized individuals (Goodman et al., 2003); indeed trauma-induced psychogenic amnesia is extremely rare, if it exists at all. Rather, studies of war veterans, some of whom may themselves have committed gruesome acts, and of victims of such acts, suggest that these memories persist all too well (McNally, 2003). The participants were split in half, with a small majority voting for faking, and interestingly the number of participants who believed the amnesia was faked was higher among participants who had only completed elementary school (20%) than among participants in possession of a university degree (46%). Sometimes folk psychology beats intellectual speculation.

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Notes

- 1** In the survey we avoided complicating the issue by calling attention to the various forms of memory that scientific taxonomies define, but accepted that memory is simply what people believe it is.