

roll; the literature of the wider Mediterranean world preserved in the archaeological record up until the late third and early fourth century CE is overwhelmingly in roll format, while almost all surviving Christian texts, the earliest being a fragment of the Gospel of John from the second century CE, are codices. A distinguishing feature of Christian IDENTITY from very early on, therefore, was the use, in multiple situational and behavioural contexts, of the codex. This preference may link to the socio-economic status of early Christians, though, as Harry Y. Gamble suggests, it is more likely due to the practicality of the medium (Gamble 1995: 66).

The codex has implications for the study of the development of the Christian CANON since the codex form facilitated the collection of diverse texts into a single physical volume. Diversity in content and the ordering of this content within codices can provide insight into the emergence of a canon of authoritative or normative Christian literature, as well as the emergence of a GENRE of holy writing. Textual critics use early codices such as Sinaiticus and Vaticanus to reconstruct primary readings of the biblical texts based on disagreements among MANUSCRIPTS. The codex is tied to constructions of honour, status, and power in terms of their commissioning, possession, use, disposal, or destruction. More recent scholarship examines contexts in which a codex was not approached primarily as a text or texts to be read, but as a material object, separate from any act of reading though with a tacit or acknowledged content, with its own set of healing, ritual, or apotropaic abilities and purposes (Vearncombe 2016).

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Further Reading

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Cognitive/Personal Memory The term *cognitive* or *personal memory* refers to the capacity of individuals to recall and describe events, individuals, and experiences from the past, either the personal past or the collective past of a larger group, the latter including events and pieces of information not directly experienced by the individual. Memory enables humans to recollect and learn from past experiences, and thereby to understand the circumstances of their lives, to construct meaning, and to have a basis for sensible action in the future.

Human memory is a product of many different subsystems of the brain that work with apparent seamlessness to provide a wide range of different types of recall. At a macro-level, it is possible to distinguish memory subsystems for recollections of life incidents (episodic memory), general knowledge (semantic memory), and motor skills (procedural memory). At a micro-level, visual and verbal memory contribute to each of these broader categories of memory, and have different rates of persistence and reliability. Verbal memory can be the memory either of exact words (VERBATIM MEMORY) or of the general meaning of what was said (gist memory). Verbatim and GIST MEMORIES are formed simultaneously from what is heard (auditory input), which is retained by the brain in a phonological loop – an exact representation of sound that lasts for approximately

two seconds. Verbatim and gist memory are both parts of a short-term memory system, and gist memory tends to persist longer than verbatim memory. Unconscious processes select certain memories for storage in long-term memory systems.

Medical practitioners and psychologists have long appealed to observable deficits of memory (and other brain functions) in patients whose brains have been damaged by injury, war wounds, or stroke to identify which parts of the brain are associated with which memory subsystems. The development of various techniques for imaging brain activity has allowed a rapid growth in understanding the components of memory and where they might be located in the brain and has revealed additional complexity in the various memory subsystems. For example, memories of rewards, punishments, and stimulus-reinforcer associations are located in the orbitofrontal cortex and amygdala; the temporal cortical visual area is involved in learning invariant representations of objects; and, the hippocampus is implicated in episodic memory. The ability to use language is distributed in different areas of the brain: 'Broca's area is necessary for the production of syntax, [and] grammatical formations involving verbs ... whilst Wernick's area is relevant for semantics, the meaning of words, especially nouns' (Rose 2005: 129).

Not everything experienced and observed is retained in memory. It is sometimes exact (e.g. verbatim memory), but is usually an incomplete gist version of what happened. Because not everything can be remembered, humans use SCHEMAS to flesh out their incomplete memories in individual acts of recall. For example, a schema of what usually happens when eating in a cafeteria might be used to flesh out fragmentary memories of a specific meal. Most personal memories are reconstructed from a combination of gist memory, other fragmentary remembered features, and a schema of what usually happens in certain types of circumstances.

Because it is reconstructive, memory is prone to a number of frailties, which include the frailties of transience, absent-mindedness, blocking, misattribution, suggestibility, bias, and (sometimes unwelcome) persistence (Schachter 2001). Memories are transient because they fade over time, to be replaced by memories that correspond to more current concerns. Memories of matters and events to which careful attention is given are more likely to persist. Sometimes not enough attention is given to something that later proves important, and a memory has not formed (absent-mindedness). Some memories are blocked for one reason or another, so that the individual cannot recall them (e.g. personal trauma). Some recollections are misattributed to an individual or circumstance that belongs to another individual or circumstance. The suggestions of others (including misinformation) can be incorporated into personal memories. Human memory tends to make adjustments to take account of what was later understood to have happened in light of an ultimate outcome, a process called *hindsight bias*. Furthermore, because the selection of which memories to preserve in long-term memory is unconscious, sometimes things persist in long-term memories that an individual would much rather forget, such as memories of horrific events. Post-traumatic stress disorder grows out of some such memories.

Yet despite its frailties, human memory is remarkable for its adaptability and functional durability. For example, frailties such as hindsight bias, suggestibility, and transience allow an individual to adjust better to changing circumstances and to work together with others on the basis of commonly agreed upon conceptions of important events. Absent-mindedness assists in preventing the memory capacity of an individual from being overwhelmed. The formation of gist memories that are based largely on schemas helps to provide meaningful information about the environment by assisting in the selection and ordering of specific data.

In the field of biblical studies, memory has been invoked as an important element in the transmission and preservation of JESUS TRADITIONS. For example, RUDOLF BULTMANN and MARTIN DIBELIUS considered human memories to be inadequate to the task of remembering the words and deeds of Jesus over the 30 to 60 years

between the events of his ministry and the writing of the Gospels. They concluded that little of the Gospel accounts could be based on memories of actual events. By way of contrast, arguing on the analogy of the teaching practices of rabbis contemporary to Jesus, Harald Reisenfeld, BIRGER GERHARDSSON, and Rainer Riesner all invoked personal memory as a mechanism for ensuring the accurate transmission of the traditions taught to his disciples by Jesus. Robert K. McIver has explored the potential impact that memory frailties might have had on the transmission of memories of Jesus' teachings and activities, and concludes that, like other personal memories, the memories of Jesus found in the Gospels are likely to have a first-order faithfulness to what he did and said. There is a continuing and lively debate in academic scholarship on the Gospels about how much the fact that the teachings and activities of Jesus were remembered over 30 to 60 years before being written in the Gospels has influenced the accuracy and completeness of the Gospel accounts.

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Coins Coins were one of the most prolific tools of mass communication, ideology, and propaganda in the ancient Mediterranean world, and as such represent an important primary source for studying the historical background and sociocultural dynamics of biblical texts, particularly of the NT. Coins bore both images and inscriptions to communicate a wide range of messages, similar in many respects to modern-day billboards. To those in power, they were a potential lens through which their world of honour, power, and divinity could be projected and viewed. One could describe ancient coins as *cultural texts* with meaningful images and inscriptions that call for interpretation.

Coins can inform the study of biblical texts in a number of ways. As physical artefacts, coins serve as primary texts from antiquity, and also engage secondary sources from the areas of history, art, and classics. Coins further provide data for relating the biblical text to other forms of archaeological evidence, and provide artistic and factual depictions of people, items, places, and events from the ancient world. Their imagery