

Communication Augmented by Cultural Practices

Data storage is a massive problem, due primarily to the short lifespan of flash-drives or Blue-ray disks and their strict storage-condition requirements. During the brief interview at the *Colbert Show*, George Church--the Genetics Professor at the Harvard Medical School, described his alternative solution to the memory storage problem by introducing an artifact, capable of storing large datasets for an extended lifetime. In this paper we will analyze the conversation between Church and Colbert when introducing such an artifact: the distribution of time and space, the role of the artifact, and the body language of Church generating curiosity and excitement in the audience, as complementary aspects to communication. We will observe how social norms generated by cultural practices allowed Church to best present his product to Colbert, the audience in the studio, and to the TV audience watching the *Colbert Show*.

When Church entered the TV-showroom, social norms generated by cultural practices were implemented by the host Stephen Colbert and the guest George Church shaking hands, Colbert introducing Church to the audience, and by announcing the theme of the show in an anecdote form. The humorous form of opening up an interview is a well known and powerful norm, integrated as a pragmatic action in the public-speakers' community. Such effective norm exerted by Colbert made the audience more relaxed, perceptive, and persuadable to the message Church was about to disclose (Big Fish Presentations, 2012). Moreover, the implementation of multiple social practices in a face-to-face interaction allowed Church and Colbert to easily navigate the conversation, each asking and answering questions, and generating excitement of the audience by unexpectedly introducing the external representation of the artifact into the studio-space.

Figure 1. Social norm generated by cultural practice-hand shaking



The interview was arranged beforehand for a particular time and date. Such process allowed Colbert and Church to prepare beforehand and discuss logistics of the interview, prior to their appearance on the show. It is assumed that one or multiple castings were held for the host and the guest-speaker to get to know each other, familiarize themselves with the environment and to rehearse their interplay. Such situated cognition between the host, the guest and the atmosphere in the studio was continuously updated by the comprehension of swift perception-action feedback loops (Anderson, 2007). The consistency in engaging with the surrounding environment and in an open dialog depended upon the earlier reiterated sequence of space-exposure and intercommunications. Perhaps both of the parties arrived on this day at the designated time and location, due primarily to the formality of the event and the official time of the *Colbert Show*. Hence both Church and Colbert were restricted to the particular space and time of their meeting, arranged beforehand by a third party agent.

Figure 2. Distribution of cognitive workload over space and time



Using prior epistemic memory from accumulated knowledge, Church communicated the benefits of his revolutionary innovative approach to store data on DNA sequences. Church memory, obtained from participating in Human Genome Project, which allows accessing and allocating within the cognitive ecosystem the genetic and environmental information (Church, 2012), was now communicated to Colbert and the audience by incorporating hand gestures, elevated intonation, power-symbolizing body-language, face expressions, and the imagery of the artifact. Church perfectly demonstrated his miniature artifact with incorporation of multiple expressive modalities. When reaching into his pocket, he paused for a second. By accessing his retrograde memory of the structure, function and the purpose of the artifact (not-yet presented to the public), Church strategically increased attentiveness, anticipation, engagement and curiosity of the audience prior to conveying the existence of the artifact into the presence. He extorted the tiny yet so significant artifact—the DNA on a piece of paper, and handed it to Colbert. The visualization of the artifact, with a sequence of actions as a train of thoughts (Renner, 2015), allowed the audience in the studio and behind the TV screens to best perceive the message Church and Colbert carried.

The attention was emphasized on a particular artifact, and pointed out specifically to be distinguished from the surrounding. Now the information was propagated visually and audibly, and it was dispersed across brains, bodies, and the encompassing area with collaborative crowd of people forming the distributed cognitive system (Hutchins, 2006). Colbert's rhetoric question with increased intonation was accompanied by Church actively responding through multiple external representations-interactions with the environment. Such dialog resulted in increased engagement among people and the environment, while promoting Church and Colbert artfully conceiving and exiting the audience about the DNA-artifact.



Figure 3. Communication through gesture

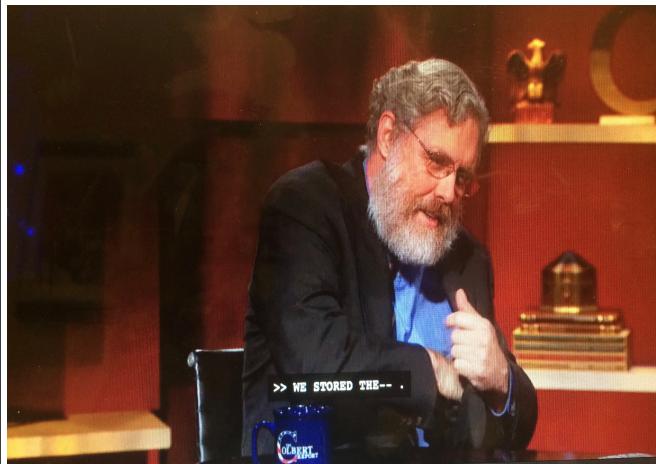


Figure 4. Coordination through social structures



Figure 5. Increasing attention and engagement

The nature of the information changed, from abstract that was simply verbalized, into the visualization of the incremented artifact-the paper with a DNA circle and written “20 million book copies”. This exiguous act transformed the argument into a more impressive and convincing one. The presence of the artifact in the showroom restructured the “cognitive capacitance into functional constellations that provide[d] the new capabilities” (Cole and Griffin, 1980). Such epistemic engineering promoted the cognitive workload to be expanded over broader in-studio and at-home audience, better perceived, and then retained for extended duration due to the visual sensory inputs. The purpose of the artifact was to enhance, improve, and aid cognition, while systematically using the spacial arrangements.

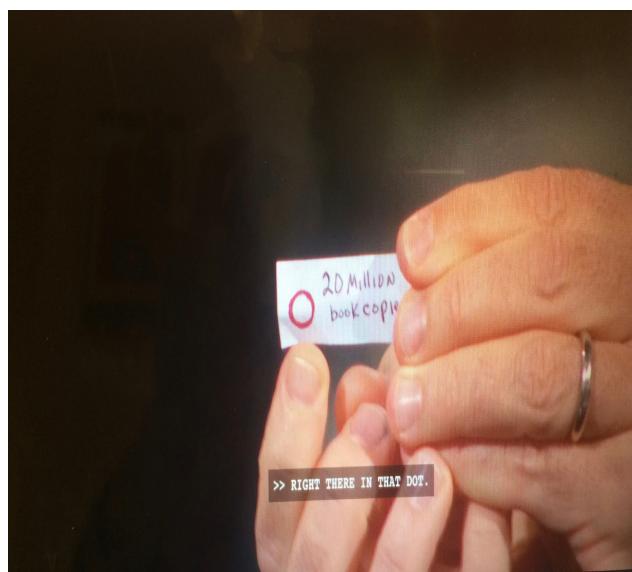


Figure 6 Rule of the artifact in the interaction

The innovation that could potentially benefit human posterity was presented as an artifact by George Church at the *Colbert Show* through the opportunistic use of space and structure. The conversation and the consequent presentation of the Church innovation was enhanced by the incorporation of social norms, body language, gestures, elevated intonation and the physical presentation of the artifact, which amalgamated excitement, curiosity, and increased attention. The artifact, embedded in larger socio-cultural system, changed the conversation into a more convincing message. Thinking ahead, we might foresee future generations where biological storage would promote storing anything and everything without restrictions or limitations on an artifact, embodied into larger systems.

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