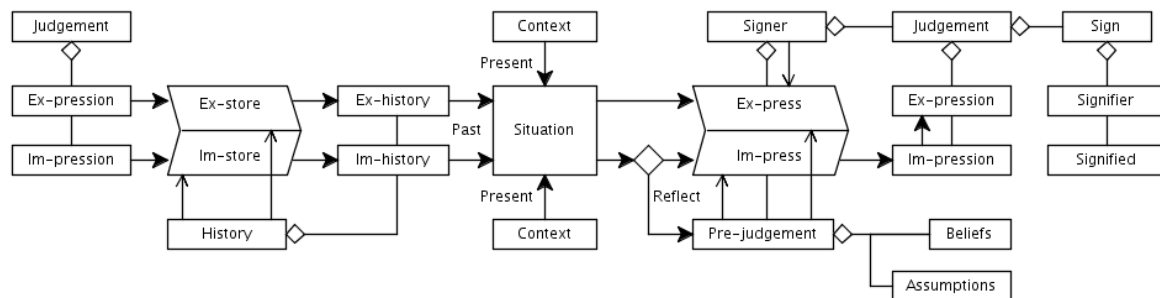


Modeling cultural evolution through a holographic model of information¹

Gregory Bateson (1978) defines information as "a difference that makes a difference." The making of that difference is the key to the workings of the process of *exformation* (Nørretranders, 1991; Lefrère, 2011), which is the process of disregarding what is unimportant (inessential) in a given situation. This process is always biased, i.e., it depends on some form of pre-judgements (= prejudice).

In the holographic information model, the making of the (second) difference in Bateson's definition is modeled as a holographic interference pattern between the objective situation, which includes the first difference, and the subjective observer, who makes the second difference by creating a *mental hologram* (mental interference pattern) by applying his/her reference beam of past experiences (mental models) to the objective situation. Hence, in this model different observers can interpret the same situation in fundamentally different ways, because they bring different reference beams to the same object beam, thereby creating different mental holograms.



The holographic information model is part of the cultural evolution model depicted in the above figure, which has a cylindrical (= wrap-around) connectivity.² A *Judgement* is modeled as a *Story* consisting of *Ex-expression(s)* and *Im-expression(s)*. This *Story* is produced in the *Press* process to the right and stored in the *Store* process to the left, where it becomes *History*. *Judgement* also consists of *Sign(s)*, which have explicit *Signifier(s)* and tacit *Signified(s)* in the semiotic sense of Saussure.³

All processes are divided into explicit and tacit parts. The past is represented by the explicit part (*Ex-history*) and the tacit part (*Im-history*) of the *History*. They are the respective outcomes of the *Store* (*Ex-store/Im-store*) process. A *Situation* is influenced by the *Present Context* and the *Past History* of the culture. The *Situation* is judged (assessed) by a *Signer* who first *Reflects* on the *Situation* and conjures up the appropriate *Pre-judgement(s)* which is based on *Beliefs* and *Assumptions*. The *Signer* then passes *Judgement(s)* on the *Situation* and creates a mental hologram in the form of an *Im-expression* of the *Situation* by using the *Pre-judgement(s)* as a mental reference beam. The *Im-expression(s)* are then externalized to form *Ex-expression(s)*, and then both of them become *History* when the *Ex-expression(s)* are stored in the *Ex-store* and the *Im-expression(s)* are stored in the *Im-store*. They correspond to the *explicit* respectively *tacit* (implicit) parts of the *Store* process, which in turn represents the cultural (collective) memorization process.

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¹ Adapted from Naeve, A., *A Primary on Communicative Modeling and Disagreement Management*, TEL-Map Deliverable D1.1, Jan, 2011. <http://telmap.confolio.org/apps/index.html#4.822>

² Expressed by the fact that the concepts *Judgement*, *Ex-expression*, and *Im-expression* appear both to the left and to the right in the model.

³ See e.g., http://en.wikipedia.org/wiki/Sign_%28semiotics%29