

01

INTRODUCTION

In a previous study (Camin, 2014), based on the **actor-network theory** (Callon and Latour, 1981; Latour, 1984), we were able to demonstrate that **uncertainty**, in the field of information and communication sciences, is a **non-human actor** (actant) of the network with which we interact.

The communication process used during the construction of this network differs according to the nature of the uncertainty encountered or felt, we have distinguished in the constructivist model of "communication-uncertainty" a typology distinguishing three axes: the variability uncertainty, the epistemic uncertainty and the scale uncertainty. What are the **benefits** of such a model in the field of **qualitative research**? How to implement it in studies relating to organizations?

Hyp. : The constructivist model of "communication-uncertainty" participates in the construction of a "relevant context" and in the creation of meaning for the actor in the situation.

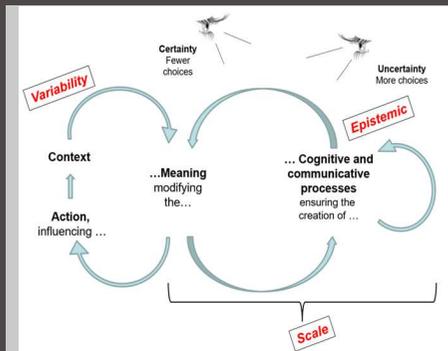
02

METHODS

In the field of communication, the **Variability** uncertainty concerns the random variation of the properties of actors and forming part of the communication system in situation (ex: "My daughter is a student, she lives here, but I guess at some point she will be leaving").

Epistemic uncertainty concerns the imperfection of our knowledge related to the communication system in situation. We will distinguish between situations where the meaning is incomplete or non-existent (unambiguous epistemic) and situations where the meanings are multiple (ambiguous epistemic). Ex: "I don't plan, in 10 years I don't think I'll be there anymore".

The **Scale** uncertainty concerns the imperfection of our models of representations. It appeals to the circular nature of knowledge acquisition and alters the meaning of phenomena. By inserting a shift in the representation of the actors, it amplifies the gaps (chaos) or desynchronizes the representations to finally blur the meaning under construction - the "sensemaking" process cited by Weick (1991). Ex: "If there was a beautiful object in the house that would centralize several of this equipment, could you like it? yes, I might like that".



Active constructivist model of "communication-uncertainty" and the 3 types of uncertainty according to their most probable origin

Cognitive and communicative processes ensure their own creation (right loop), at the same time, by taking into account the context, they ensure the creation of meaning (middle loop). The meaning influences the processes in a circular way on the cognitive and communicative processes. The action (left loop) which in turn influences the context.

Certainty and uncertainty are only a way to observe this cycle.

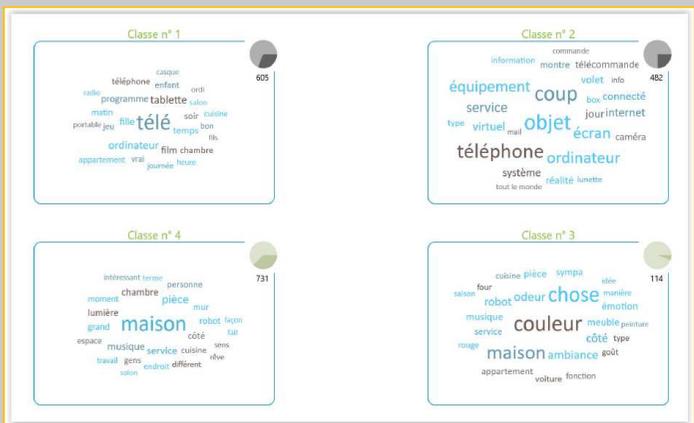
CASE STUDY : SmartHome "HomeIn"
12 semi-structured interviews carried out by a sociologist on the theme of the intelligent and sensitive house which takes into account the needs and emotions of its inhabitants (260 verbatim pages, approximately 130,000 words).

The SPHINX QUALI software (v7.4.5.1) performs a textual and semantic analysis using the Alceste method. This method establishes a descending hierarchical classification and constructs vocabularies classes on the basis of the distribution and occurrence of the words in the corpus.

03

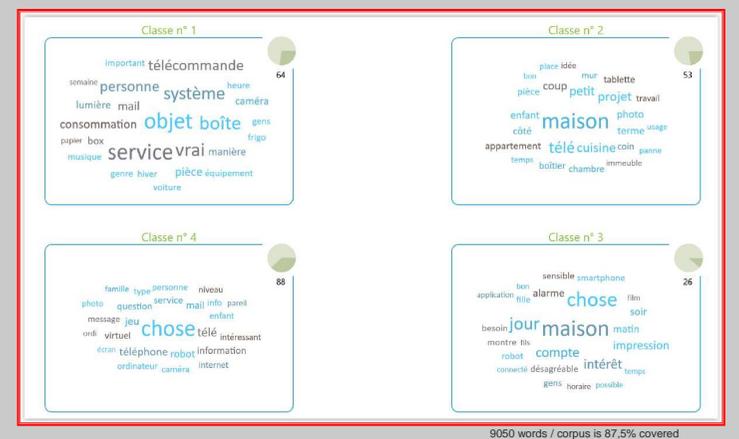
RESULTS

← COMPLETE CORPUS → THEMATIC DISTRIBUTION ← CORPUS ANNOTATED - V/E/S UNCERTAINTY →



In the complete corpus, what are we talking about ?
When people talk about the subject of the smart home, we can classify their comments according to 4 themes by decreasing importance: CL4: The house, its characteristics and potential / CL1: Communication and digital media in the home / CL2: Information processing and advanced technologies in the connected home / CL3: Interact and feel in the connected home.

In the annotated corpus, what are we talking about ?
When people express uncertainty (variability, epistemic, scale), their comments can be classified according to 4 themes by decreasing importance : CL4: The use of digital objects and services in the smart home / CL1: Safety and confidence in the smart home / CL2: Project and imagine family and professional life around the smart home / CL3: Monitor and control your environment



9050 words / corpus is 87,5% covered

04 RESULTS & DISCUSSION

H1 : The constructivist model of "communication-uncertainty" participates in the construction of a "relevant context" and in the creation of meaning for the actor in the situation.

→ **Relevant context** : Goffman introduced in 1991 the model of "frame of experience" to interpret situations and the behavior of actors. Human understanding of phenomena (and communications) is based on an emerging meaning; this emergence is related to the contextualization, namely linking the phenomenon with the constituent elements of its environment (Mucchielli, 2005). **Uncertainty** becomes one of the "significant elements" of the context, as it participates in the "representation of the future situation to be reached" (2009).

→ **In our case study**, by identifying 4 themes, we use the communication-uncertainty typology as a **new framework for understanding the phenomena in the field of risk and threats**. Typically, it appears that respondents are anxious about using digital objects and services in the smart home (CL4) and that safety is a major concern (CL3) for example.

Limits :
The bias of people annotating the corpus can be reduced by increasing the number of people and clarifying the coding rules. We could have obtained more precise results by performing a thematic distribution for each type of uncertainty.

CONCLUSIONS

The constructivist model of communication-uncertainty and its typology (variability, epistemic and scale uncertainty) allows us to better classify situations, to extract from them a more precise vocabulary and significant forms allowing us to improve our knowledge of situations. It also improves our understanding and participates in the construction of meaning ("sensemaking" process).

The Palo Alto School argues that we build the world, even though we think we perceive it, and what we call "reality" is an interpretation constructed by and through communication (Mucchielli, 2005).

In information and communication sciences, we propose to use the communication-uncertainty approach to explain human interaction situations in a new light. This is a new grid for analyzing and interpreting situations. We can draw from this study the elements supplementing the tools for analyzing existing discourse or texts,

taking into account the uncertain, troubled and incomplete aspects of concrete situations.

Future research directions
In our next research work, we propose to automate the learning process using the technology of "machine learning" (supervised learning on a data set using the three labels - V / E / S - characterizing the type of uncertainty in communication).

References
CALON & LATOUR, "Unscrewing the Big Leviathan", 1981
CAMIN, "Approche communicationnelle de l'incertitude", thesis, 2014.
GOFFMAN, "Les cadres de l'expérience", 1991
LATOUR, "Les microbes : guerre et paix", 1984
MUCCHIELLI, "Etudes des communications, approche par la contextualisation", 2005.
MUCCHIELLI, "Influencer, persuader, motiver", 2009.
WEICK, "Sensemaking in Organizations", 1995.