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# Integration topologies help interdisciplinary researchers critically reflect on their collaboration

Kristine LUND, Bethany LAURSEN, Stephane CROWLEY, Michael O'ROURKE

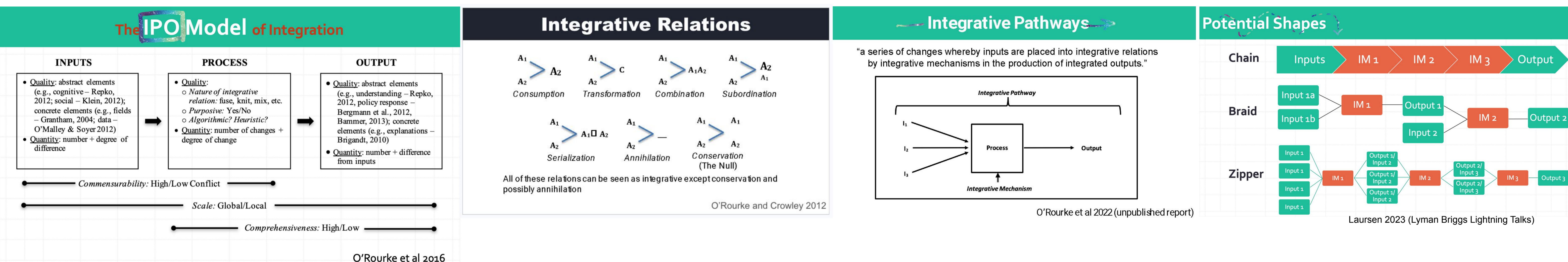
## 1. ASLAN DOES INTERDISCIPLINARY RESEARCH IN LANGUAGE COMPLEXITY

## 2. WE ASKED RESEARCHERS TO PRODUCE GUIDED VISUALIZATIONS OF THEIR INTERDISCIPLINARITY

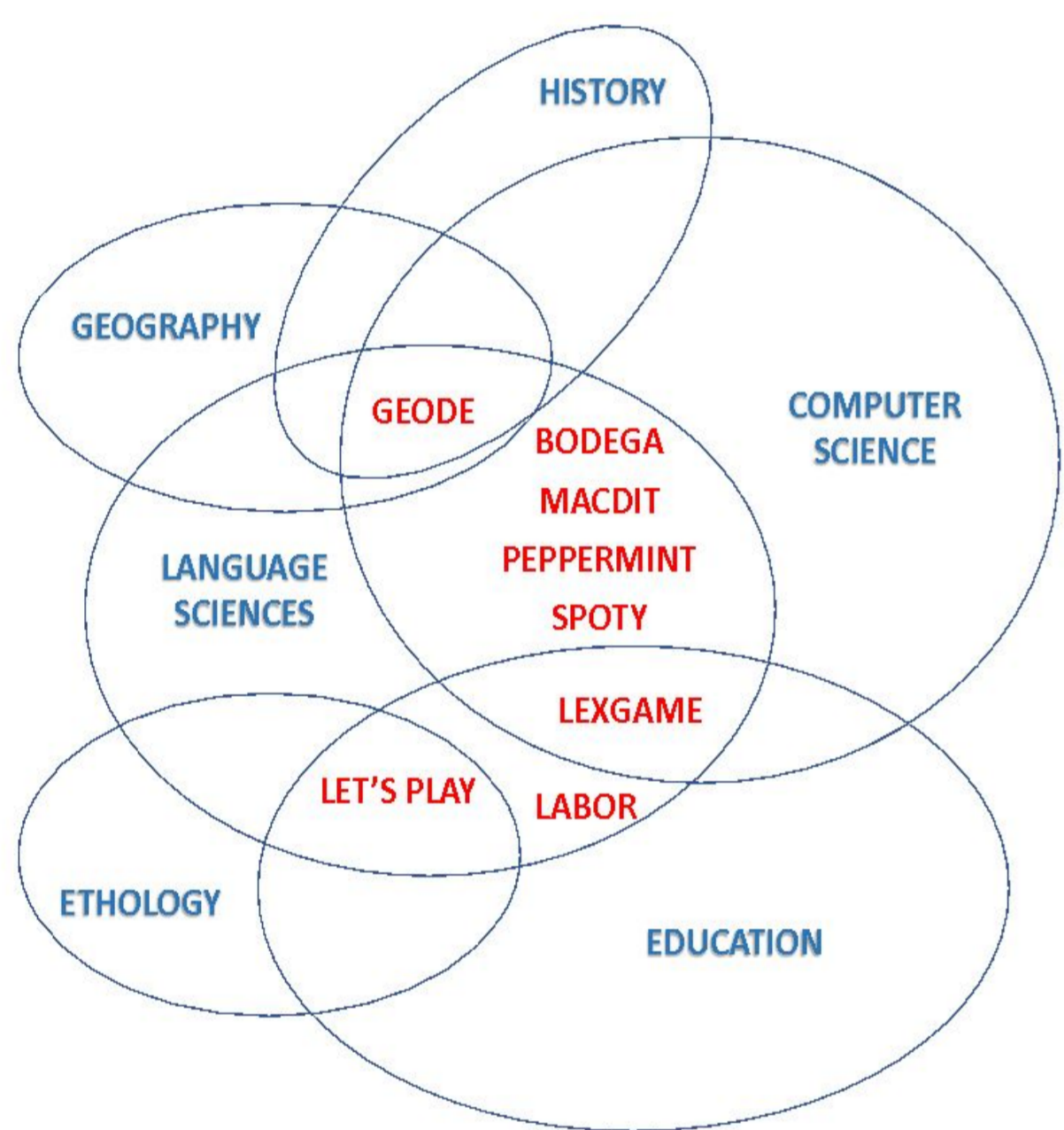
## 3. WE GAVE THEM MODELS THAT COULD DESCRIBE THEIR INTERDISCIPLINARY WORK

## 4. WE RECORDED 8 INTERVIEWS REGARDING HOW THEY FOUND THE MODELS USEFUL

## 5. THIS WORK WILL SUGGEST WAYS TO MODIFY MODELS OF OF INTERDISCIPLINARITY



## ASLAN PROJECTS and DISCIPLINES



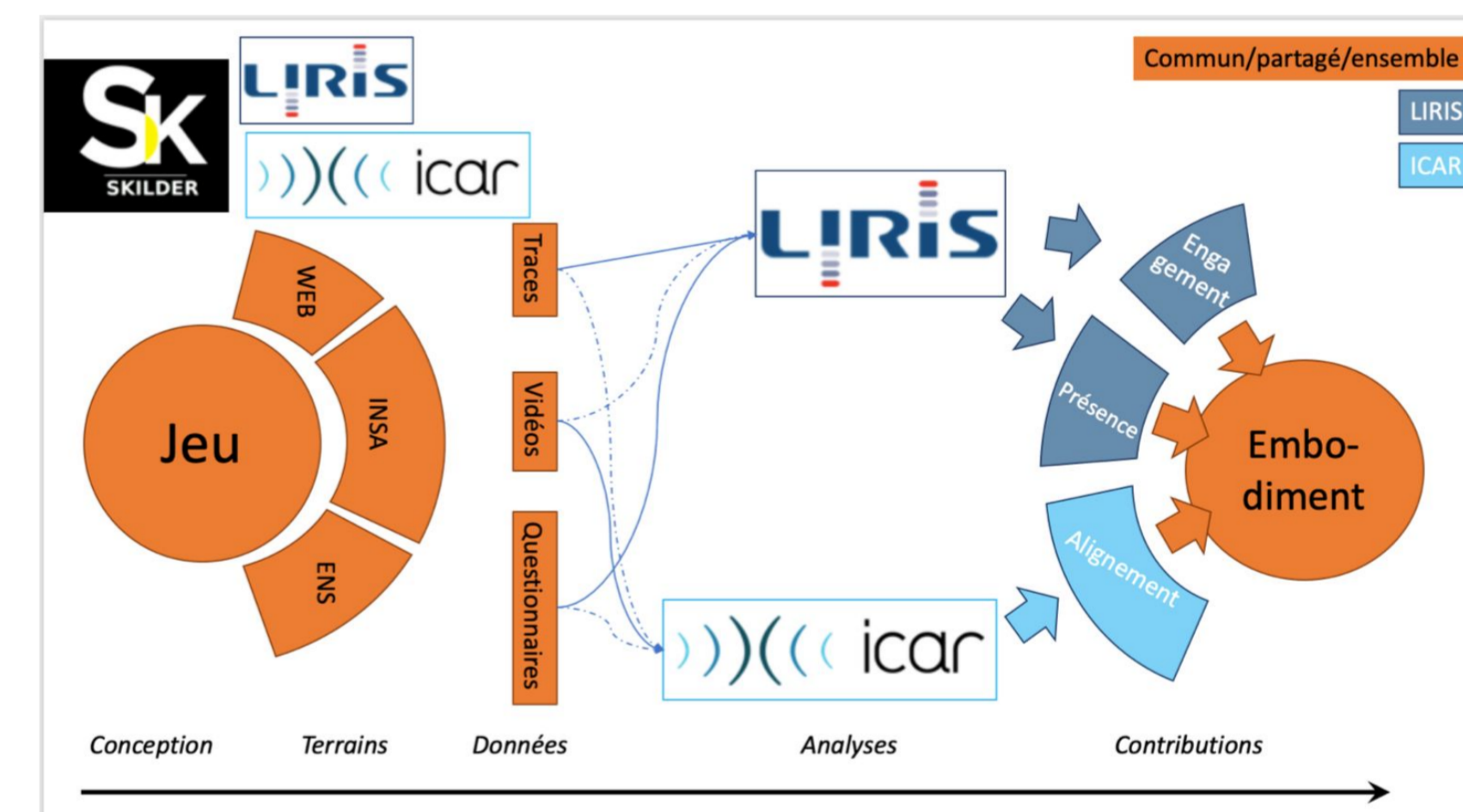
## ICAR and DDL are language sciences labs; LIRIS is comp sci

- BODEGA (ICAR/LIRIS)** Embodiment in collaborative serious games for soft skills training: impact study on engagement and alignment in gradual multimodal situations
- SPOTY (DDL/LIRIS)** Spatial Ontology and Typology
- GEODE (ICAR / LIRIS)** Encyclopedic Geographical Discourse: writing about geography in France from the Enlightenment to the Age of Wikipedia
- LABOR (ICAR / DDL)** Language at the borders of work and school: an ethnographic investigation of vocational high schools in French Guiana
- PEPPERMINT (ICAR/LIRIS)** Interacting with Pepper: mutual learning of turn-taking practices in HCI
- MACDIT (ICAR / DDL)** Multi-agent models and social media data: Collective dynamics and individual trajectories in linguistic populations
- Lex:game (ICAR / LIRIS)** Tools for a game based Personal Learning Environment targeting lexical competences
- LET'S PLAY (DDL / ICAR / ENSE)** Embodied Intersubjectivity and Cooperative Communication in Bonobos, Chimpanzees and Humans: from Emotional Sharing to Joint Actions

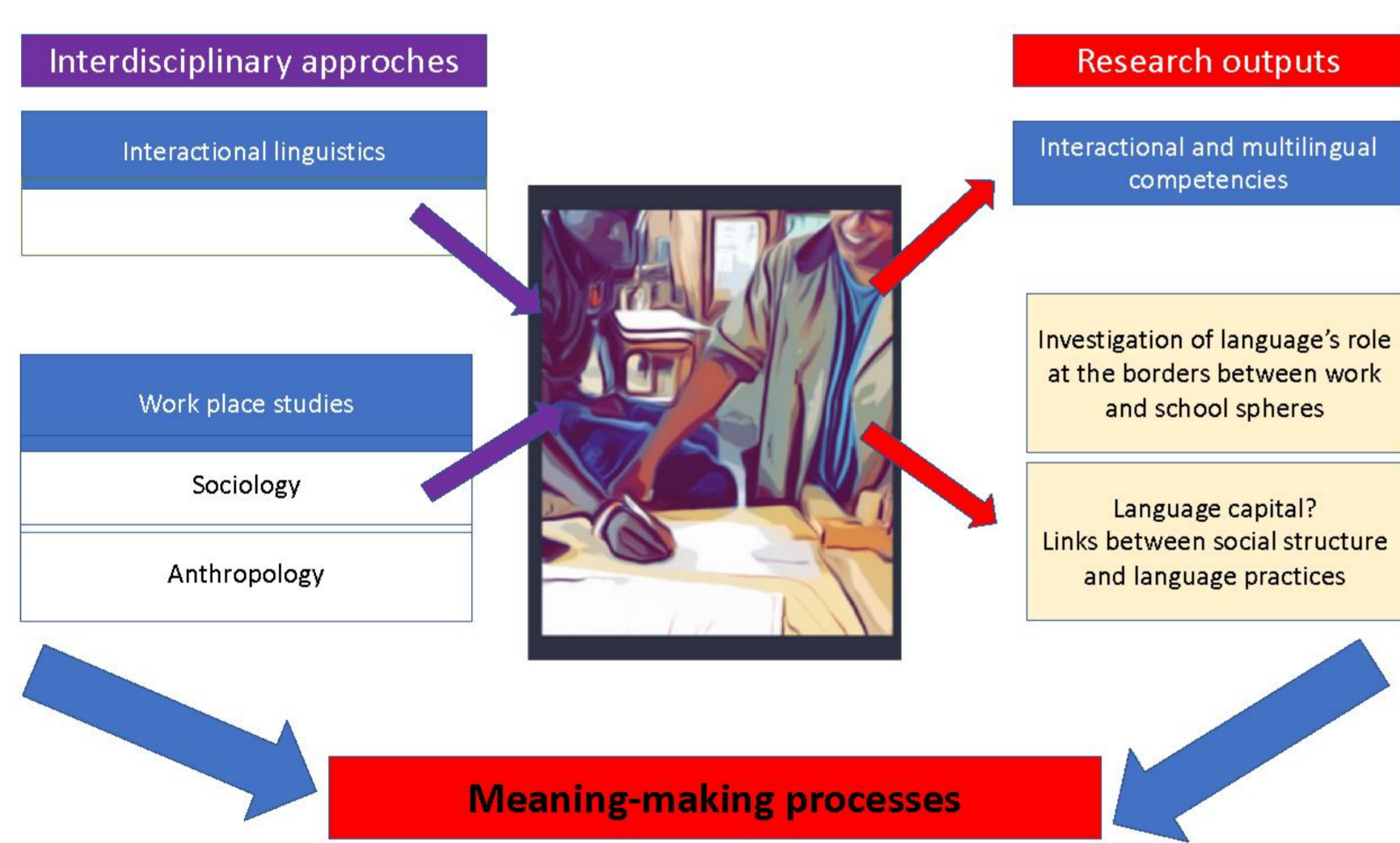
## QUESTIONS THAT PROMPTED VISUALISATIONS

- Do you build objects in common, then does each discipline do its own analysis on them, in parallel?
- Do you take objects apart and one discipline does an analysis to give it back to the other discipline which relies on it for its own analysis?
- Do you agree on an object, then do you analyze in a loop, one discipline, then the other, until obtaining results?
- What is the analytical and/or theoretical purpose of your methods ?

## BODEGA : ANALYZING VIZ A POSTERIORI : BRAID?



## LABOR : MACRO LEVEL DISCIPLINARY INTEGRATION ?



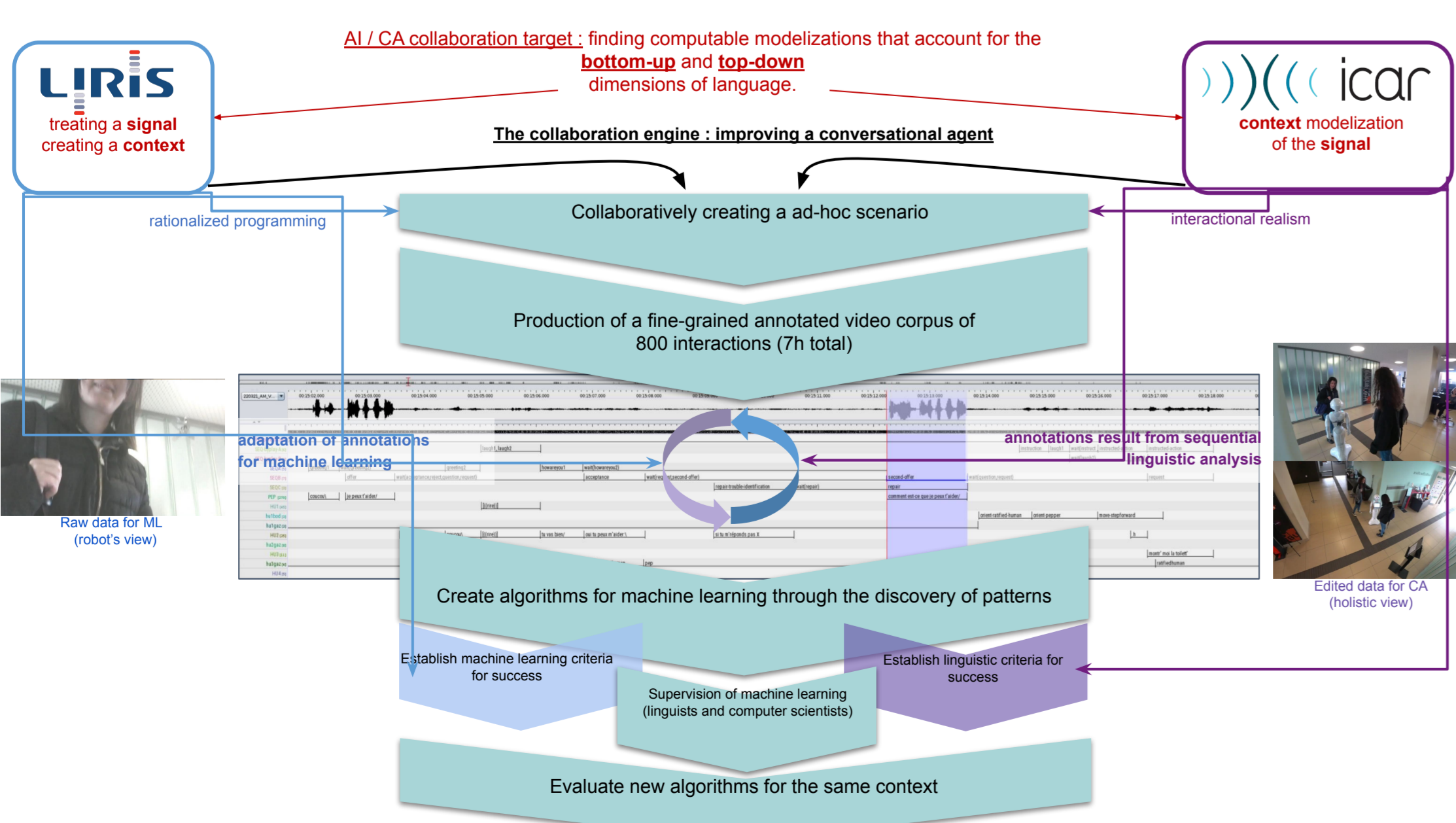
## MACDIT : MESO LEVEL INTEGRATIVE RELATION (COMBINATION)

Marc-AT à Tout le monde 10:54  
du coup on pourrait dire que l'input de MACDIT = d'une part les données wikipedia et twitter + d'autre part les définitions des unités linguistiques (qu'est ce qu'un mot, qu'une phrase)?  
ça ferait combinaison? A1A2  
et l'output serait un corpus nettoyé d'un point de vue technique mais aussi d'un point de vue théorique (p.ex., des phrases segmentées selon les définitions linguistiques)

## GEODE : INSTANTIATING THE BRAID WITH MESO AND MACRO ELEMENTS ( from French)

Kris : Can you instantiate the braid?  
L (Computer Scientist) : But here if we instantiate the braid, so we... from a computer point of view, we will create a **closed world**. So it does look a bit like that. We would have in 1A and in 1B, we would have inputs that would come more from **linguistics** and then **computer science**, so that was what D (Linguist) was saying around the **identification of discourse** or even from the side of **recognizing named entities**. So this research, it would be rather our these 2 themes in the end, these 2 disciplines which were together. While perhaps in input 1 and input 2, it would therefore be input 1, it is the result of what we were able to produce by coming together and input 2, it is precisely the geographers who show up with their questions and who, on top of what we have been able to do on the **identification of discourse** and the **recognition of named entities**, we are going to use that with a **vision of cartographic geography**. With this braided sequence, I think we can quite easily instantiate it and put our our tasks our everything we have done in this form there.  
[...]  
Kris : [so what would you say the integrative mechanism was in this case?]

## PEPPERMINT : BRAID AROUND A CHAIN ?



## ASLAN RESEARCHERS ARE INTERESTED IN USING MODELS TO PROMOTE EMBEDDED REFLECTION ON CROSS-DISCIPLINARY INTEGRATION

### CONCLUSIONS

- Elaborating research questions
- Questioning assumptions
- Widening theoretical lenses
- Organizing grant proposals
- Convincing grant reviewers
- Developing new methods
- Writing papers
- Reporting to funders
- These models seem to be productive boundary objects when applied as a jumping board for reflection ; we need to test to what extent and for which objectives
- Integration topologies render research practices explicit and should be studied as a tool for Integration Experts

### EMERGING HYPOTHESES

- Interdisciplinary researchers attempt to integrate on micro, meso and macro levels ; what does this depend on and given this, how should we facilitate integration in teams ?