

Breaking down negotiations:

Analyzing negotiations using

the Coloured Trails Game & the NegotiAct

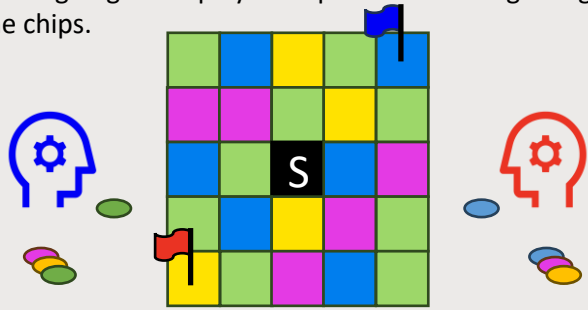
Contribution: Design a workflow for gathering and analyzing data about negotiations.

❖ 1. Experimental Design

Objective: Gather data of people negotiating and the results of those negotiations.

Method: Modified Colored Trails Game.¹

Reasoning: The Colored Trails Game was designed to help with the analysis of decision making in cases such as negotiations¹. It provides a way to eliminate confounding variables such as “sentimental values” and unclear objectives, by assigning each player chips used for bargaining and a goal to reach using the chips.



❖ 2. Perform Experiment

Gather personal information: Using a questionnaire collect age, relationship of participants, experience and favorite colour as they may have an effect on the negotiations in this experiment.

Assign Groups: Play the game in groups of 2. Players receive preassigned sheets with objectives and chips, in order to remove variable goals and resources. (All groups receive the same goals and resources)

Record the games for analysis

Gather Quantitative Data: Using a questionnaire ask about personal opinions toward how the experiment went, what people noticed, if any part of the experiment left an impression.

❖ References:

1. Grosz, Kraus, Talman, Stossel, & Havlin. (2004). The influence of social dependencies on decision-making: initial investigations with a new game. *Adaptive Agents and Multi-Agents Systems*, 782–789.

<http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.ieee-000001373549>

2. Jäckel, E., Zerres, A., De Sanchez, C. S. H., Lehmann-Willenbrock, N., & Hüffmeier, J. (2022). NegotiAct: Introducing a comprehensive coding scheme to capture temporal interaction patterns in negotiations. *Group & Organization Management*, 105960112211326. <https://doi.org/10.1177/10596011221132600>

❖ 3. Process Data using NegotiACT to label interactions

Processing: Designate key moments during the negotiations. Segment recordings when²:

- The speaker changes.
- The speaker makes a new statement that contains a new thought within a speaking turn.
- The speaker remains within the same code but expresses two different complete thoughts.

NegotiACT: “a comprehensive coding scheme for negotiations, comprising 47 mutually exclusive behavioral codes.”². It introduces an improvement on existing coding schemes and promises a viable way to analyze negotiations in depth.

Labeling: Using the NegotiACT label different segments. Use this information in combination with the negotiation result to reason about the viability of this workflow.

❖ 4. Results

3 levels with different objectives were designed. A total of 20 games were played, resulting in 3 hours of negotiation recordings. Which after encoding showed a total of 87 offers made, 24 offers accepted, 26 offers rejected, and 16 requests for offer modifications.

1	1:25	6:40	7:30	4:20	3:30	15:00	6:30
2	24:00	9:45	18:40	5:50	4:30	10:50	10:30
3	10:30	15:20	10:40	5:50	7:00	13:00	

Table 1: All game times (columns as “minutes:seconds”) per game/level (rows)

A	-50	-50	-25	120	-25	-25	100
B	100	100	-25	-100	-25	-25	-50

Table 2: The scores for Game 1, respective to players A and B (each column is a group)

❖ 5. Conclusions

The workflow presented establishes a reliable, scalable and modifiable way to gather data on negotiations and in combinations with the NegotiAct presents a consistent way to analyze the data collected.