Results of the second experiment:

We had three main hypotheses for this experiment, plus, checking the good formulation of the questions related to the second principle. For this experiment I generated two dialogues that have the same initial preferences model (Agent 1: Da, Agent: S2), and we changed the relation of dominance (Dialogue 1 Agent1: Dom/Agent2: sub) (Dialogue2: Agent 1: Peer/Agent 2:Peer).

For the first dialogue, **three** participants were removed, and the second one **two** participants. They gave wrong answers for the manipulation check questions.

Remember that the hypotheses are the following:

H1:

   a. Participants will perceive dominant agent as a self-centered.
   b. Peer agent will perceive as considering more the preferences of other than the dominant agent.
   c. Submissive agent will be perceived as more interested to the other preferences than the peer agent in decision making.

H2:

   a. Dominant agent is perceived as more demanding(less flexible) than other agents.
   b. Peer agent will be perceived as less flexible than the submissive agent.
   c. Submissive agent will perceived the most flexible agent.

H3:

   a. Dominant agent is perceived as the leader of the dialogue.
   b. Peer agent is perceived as more leading the dialogue than the submissive agent.
   c. Submissive agent will be perceived as a follower.

In the following, I present the results and a brief discussion for each hypothesis.

H1:

The results don't confirm our first hypothesis; we can see that the dominant agent is perceived as taking the preferences of the other agent more than the peer and submissive agent. This is can be related to the proposed dialogue. Indeed, when observing the dialogue (dominant / submissive), agent 1 keeps proposing restaurants, and agent 2 states that he doesn't like something about the proposal. This sequence of utterances make the agent 1 (dominant) appears as adapting his proposals to what agent 2 stated about the previous ones, and I think this is what participants perceived from the dialogue. However, if you take a closer look to the agent1 proposals, they don't respect the preferences of agent 2. He only proposes restaurants that he likes. We observe the same results for the second question.
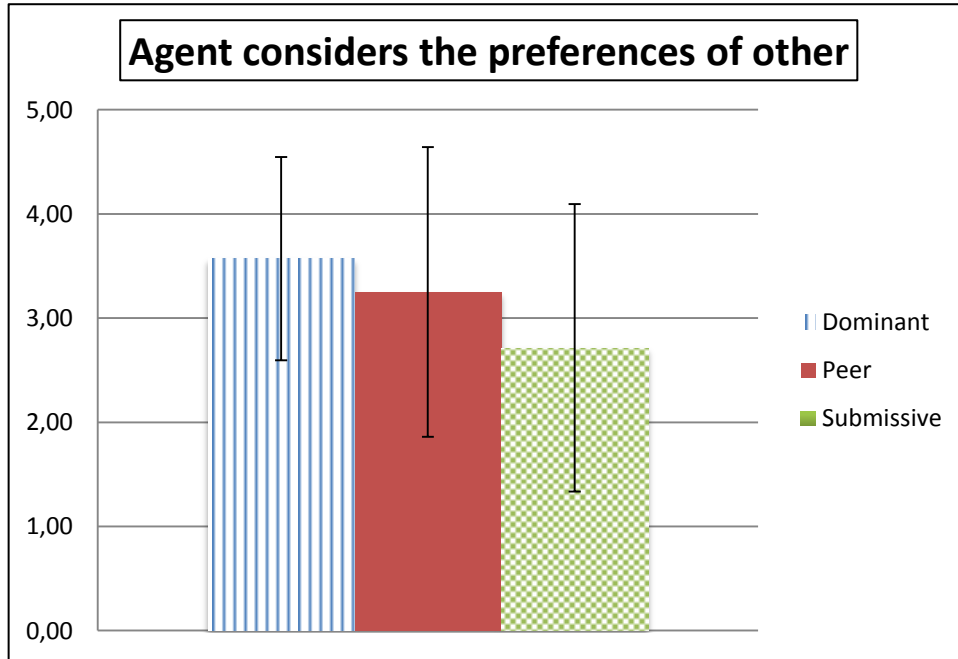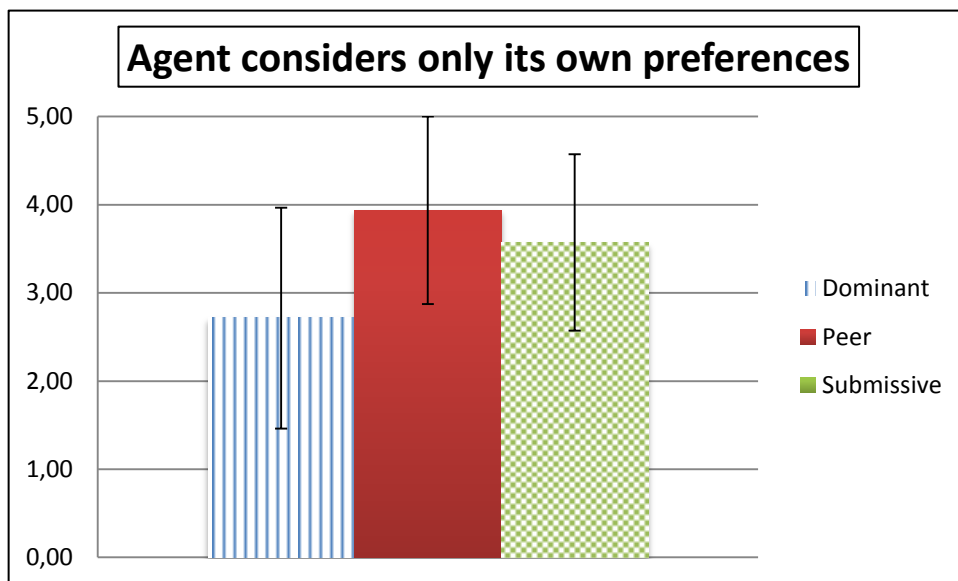
Figure 1: Results for the question 1 of H1.

Figure 2: Results for the question 2 of H1.

H2:

The same phenomenon was observed for the second hypothesis. Dominant agent was perceived as adapting his proposals to the submissive agent statements (see figure 4).

Only 30 % of participants agree that the dominant agent was inflexible. In the contrary submissive agent was perceived as more inflexible (see figure 3), because he was stating criteria that he doesn't like during the dialogue. The good news is that the responses are in

average complementary. Concerning the results for peer agents, agent 1 was perceived as more inflexible during the dialogue, which explain that the standard deviation is huge.
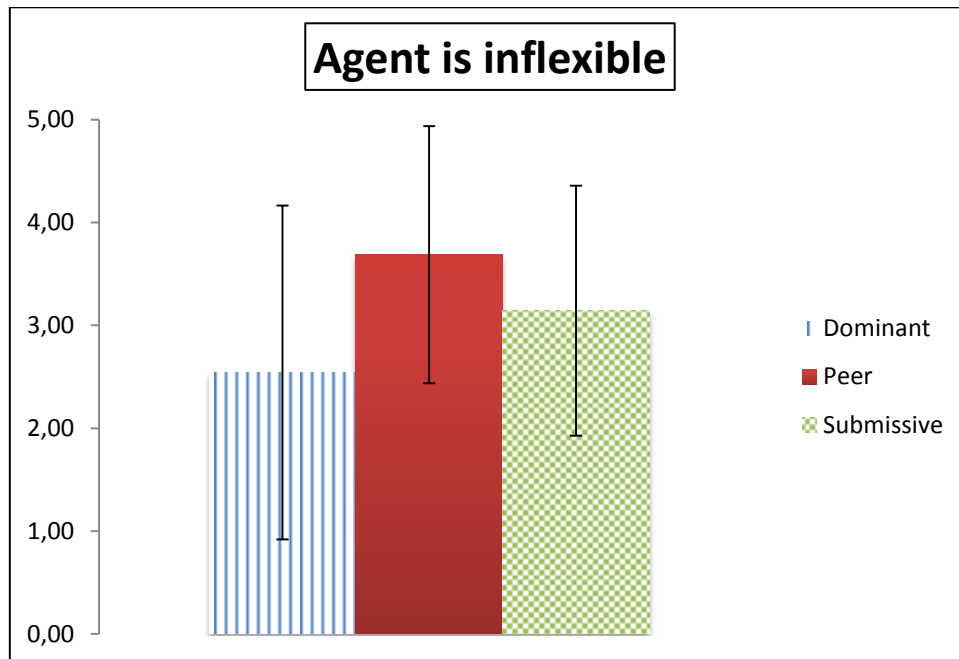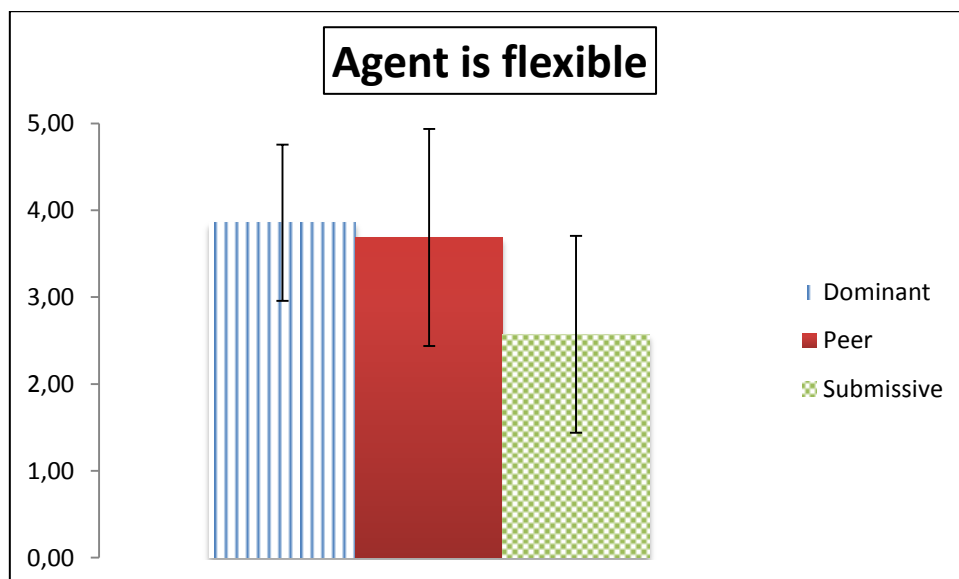

Figure 3: Results for the question 1 of H2.

Figure 4: Results for the question 2 of H2.

H3:

The third hypothesis is confirmed. The dominant agent is perceived as leading the dialogue by all the participants, while they disagree that the submissive agent is leading the dialogue. However, participants also consider that the dominant agent is more guided in the dialogue

than the submissive agent. It maybe reflects the fact that the submissive agent expresses more his preferences than the dominant agent.

The error bar of peer agent in figure 5 goes from (2 to 5). I decided to split the take look to participants answer for both agent 1 and agent2. The results are depicted in figure 7. Indeed, participants agree that agent A leads the dialogue and agent B is being guided in the dialogue. I have to admit that for now I don't explain why agent A was perceived as a leader (maybe he's the one that opens the negotiation). In terms of utterance choice they are having practically the same behavior.
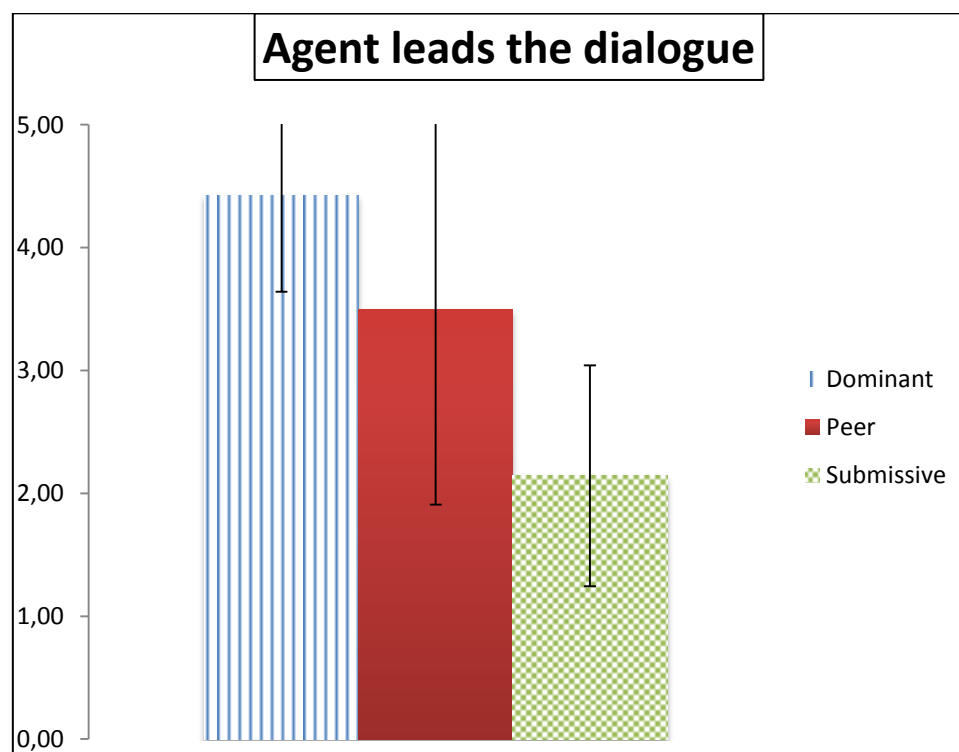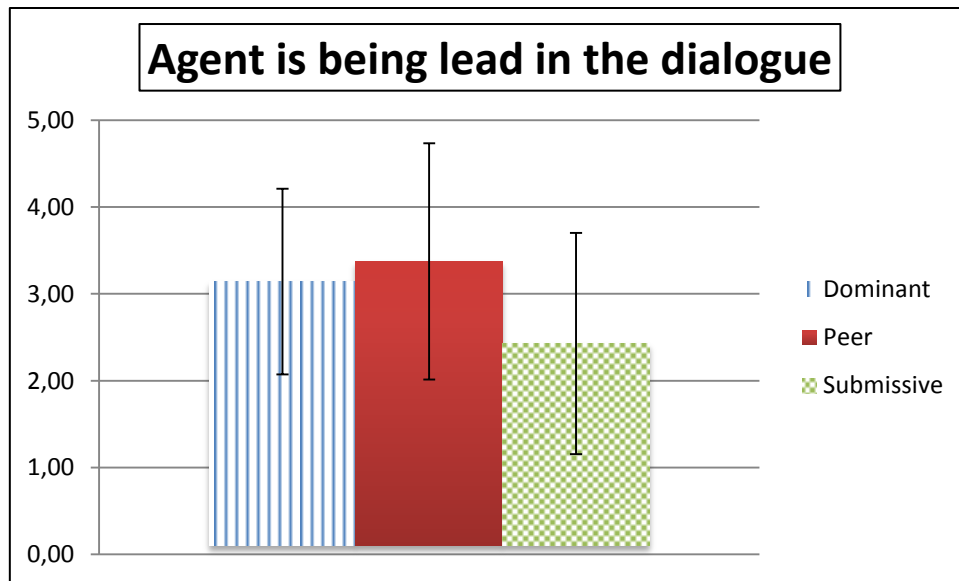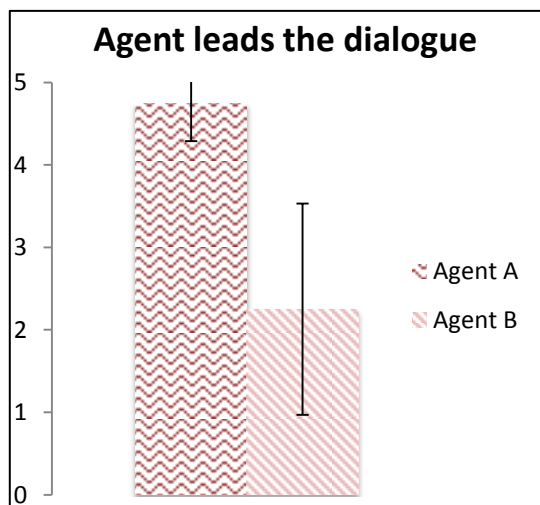

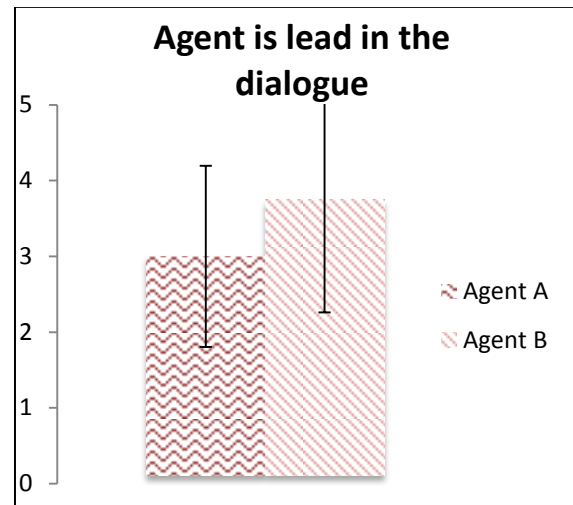**Figure 5:** Results for the question 1 of H3.

Figure 6: Results for the question 2 of H3.

Figure 7: Results for H3 on peer agents dialogue.