Modelling Questions in Public Arbitrations with Inference Anchoring Theory

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Public arbitrations are important tools for governing bodies to consider the views of citizens when making controversial decisions. At the same time, they present challenges to effective moderation, participation, and sense-making, both during and after the event.

Inference Anchoring Theory (IAT; Budzynska & Reed 2011) is a tool-supported analytical method for annotating dialogue transcripts to extract propositional structures that are anchored on the speakers' locutions. As such, it offers a robust methodology to formally identify, represent, assess, and visualise argumentation structures in public arbitrations. The process is fully automatable, as manual annotations can be used to train algorithms that are able to process new transcripts without human intervention.

Questions are key in public arbitration, where participants answer questions from each other and from moderators. In the Citizen Dialogue corpus (public hearings by the US Department of Transport; http://arg.tech/cd) 83 of the 672 locutions were questions (Lawrence et al. 2017). IAT distinguishes between assertive questions (assertions in question form) and pure questions (information-seeking questions): of the 83 questions in the corpus, 30 were pure and 53 were assertive. The distinction is crucial in the analysis of discourse dynamics, and leads to different propositional structures: pure questions may anchor challenges, while assertive questions convey propositional content in support of, or conflict with, other assertions.

IAT supports automation of the processing of questions from linguistic analysis, to identification and assessment of argumentative role, to the production of analytics and visualisations. These results can be catered to participants, moderators, and decision-makers in public arbitrations, increasing the quality, cost-effectiveness, and efficacy of the deliberations.

References: ● Budzynska, K., Reed, C. (2011). Whence inference. University of Dundee Technical Report. ● Lawrence, J., Snaith, M., Konat, B., Budzynska, K., Reed, C. (2017). Debating technology for dialogical argument: Sensemaking, engagement, and analytics. ACM Transactions on Internet Technology (TOIT), 17(3), 24.