Research Statement: Narratives and Belief Formation

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My work uses experiments to better understand how individuals' beliefs and their economic decisions are shaped by **narratives**, stories for why an event occurred. Narratives and story-telling pervade our lives. Narratives on topics such as immigration, welfare fraud, entrepreneurship, or inflation are abundant in the mass media and have been shown to affect important economic and political behaviors. My papers study narratives in the context of political expression, consumer decisions, labor markets and macroeconomic phenomena. I study not only whether narratives shape belief formation and behavior, but also particular **mechanisms** that make narratives so powerful. In particular, my recent work focuses on how narratives shape the interpretation of new information, how narratives shape other people's perceptions of one's motives, and how memory mechanisms facilitate the persuasive power of narratives as opposed to statistics. While my research is predominantly empirical, it is usually connected to theory and often aims to disentangle competing theoretical mechanisms that are not usually separable with observational data. My work also tries to propose new methodological innovations for measurement.

In my latest work, I examine memory mechanisms that affect the effectiveness of stories versus statistics. In the paper "**Stories, Statistics, and Memory**", joint work with Thomas Graeber and Florian Zimmermann, we examine whether the extent of forgetting differs between stories and statistics. In controlled online experiments we show that the effect of information on beliefs decays rapidly and exhibits a pronounced story-statistic gap: the average impact of stories on beliefs fades by 33% over the course of a day, but by 73% for statistics. Consistent with a model of similarity and interference in memory, prompting contextual associations with statistics improves recall. A series of mechanism experiments highlights that the story-statistic gap is primarily driven by lower similarity of stories to interfering information. Our findings highlight the power of stories in mass media and inform the design of effective information campaigns.

Narratives pervade the political debate, where potentially controversial opinions are rationalized by arguments. In the paper "**Justifying Dissent**" (with Leonardo Bursztyn, Georgy Egorov, Ingar Haaland and Aakaash Rao), we examine the hypothesis that narratives are effective in increasing the public expression of dissent by providing a "social cover" for voicing otherwise-stigmatized positions. Motivated by a simple theoretical framework, we experimentally show that liberals are more willing to post a Tweet opposing the movement to defund the police, are seen as less prejudiced, and face lower social sanctions when their Tweet implies they had first read credible scientific evidence supporting their position. Analogous experiments with conservatives demonstrate that the same mechanisms facilitate anti-immigrant expression. Our findings highlight both the power of rationales and their limitations in enabling dissent and shed light on phenomena such as social movements, political correctness, propaganda, and anti-minority behavior.

Narratives also played a critical role in the context of the COVID-19 pandemic where very different narratives about the COVID-19 pandemic were disseminated on mass media. In the paper “**Opinions as Facts**” (with Leonardo Bursztyn, Aakaash Rao and David Yanagizawa-Drott, **Review of Economic Studies**) we examine the consequences of diverging narratives between opinion programs in a high-stakes setting: the early stages of the COVID-19 pandemic in the US. We find stark differences in the adoption of preventative behaviors among viewers of the two most popular opinion programs, both on the same network, which adopted opposing narratives about the threat posed by the COVID-19 pandemic. We then show that areas with greater relative viewership of the program downplaying the threat experienced a greater number of COVID-19 cases and deaths. Our evidence suggests that opinion programs may distort important beliefs and behaviors by disseminating powerful narratives.

In “**Narratives about the Macroeconomy**” joint work with Peter Andre, Ingar Haaland and Johannes Wohlfart) we provide evidence on narratives about the macroeconomy—the stories people tell to explain macroeconomic phenomena—in the context of a historic surge in inflation. We measure economic narratives in open-ended survey responses and represent them as Directed Acyclic Graphs. We apply this approach in surveys with more than 10,000 US households and 100 academic experts and document three main findings. First, households’ narratives are strongly heterogeneous and coarser than experts’ narratives, focus more on the supply side than on the demand side, and often feature politically loaded explanations. Second, households’ narratives strongly shape their inflation expectations, which we demonstrate with descriptive survey data and a series of experiments. Third, an experiment varying news consumption shows that the media is an important source of narratives. Our findings demonstrate the relevance of narratives for understanding macroeconomic expectation formation.

This paper is connected to previous work on **mental models** about the macroeconomy. In “**Subjective Models of the Macroeconomy**: Evidence From Experts and Representative Samples” (joint work with Peter Andre, Carlo Pizzinelli and Johannes Wohlfart, **Review of Economic Studies**) we study people’s subjective models of the macroeconomy and shed light on their attentional foundations. To do so, we measure beliefs about the effects of macroeconomic shocks on unemployment and inflation, providing respondents with identical information about the parameters of the shocks and previous realizations of macroeconomic variables. Within samples of 6,500 U.S. households and 1,500 experts, beliefs are widely dispersed, even about the directional effects of shocks, and there are large differences in average beliefs between households and experts. Part of this disagreement seems to arise because respondents think of different propagation channels of the shocks, in particular demand-versus supply-side mechanisms. We provide evidence on the role of associative memory in driving heterogeneity in thoughts and forecasts: Contextual cues and prior experiences shape which propagation channels individuals retrieve and thereby which forecasts they make. Our findings offer a new perspective on the widely documented disagreement in macroeconomic expectations.

Narratives about the pay changes the movers experience when switching firms also have the scope to shape labor market dynamics and to affect market power in the labor market. In "**Worker Beliefs about Outside Options"** (with Simon Jäger, Nina Roussille and Benjamin Schoefer), we examine the accuracy of worker beliefs about outside options. We document that workers wrongly anchor their beliefs about outside options on their current wage. In particular, workers at low-wage firms underestimate wages elsewhere. We establish this anchoring bias by comparing representative survey data on worker beliefs in Germany with measures of actual outside options in linked administrative labor market data. Moreover, using both descriptive survey data and an information experiment, we demonstrate that beliefs about outside options shape intended labor market behaviors. Using an equilibrium model, we show that anchoring can give rise to monopsony and labor market segmentation. Taken together, our model and evidence highlight that misperceptions are pervasive, have allocative consequences and are a plausible source of monopsony power.

I have done some methodological work in the measurement of surveys. One key challenge for all experiments except natural field experiments is that they are plagued by experimenter demand effects. In "**Measuring and Bounding Experimenter Demand**" (with Jonathan de Quidt and Johannes Haushofer, **American Economic Review**), we propose a technique for assessing robustness to demand effects of findings from experiments and surveys. The core idea is that by deliberately inducing demand in a structured way we can bound its influence. We present a model in which participants respond to their beliefs about the researcher's objectives. Bounds are obtained by manipulating those beliefs with "demand treatments." We apply the method to eleven classic tasks, and estimate bounds averaging 0.13 standard deviations, suggesting that typical demand effects are probably modest. We also show how to compute demand-robust treatment effects and how to structurally estimate the model.

My co-authors and I have also put together a review on the best practices in information provision experiments. In the review "**Designing Information Provision Experiments**" (with Ingar Haaland and Johannes Wohlfart, **Journal of Economic

Literature), we survey the emerging literature using information provision experiments in economics and discuss applications in macroeconomics, finance, political economy, public economics, labor economics, and health economics. We also discuss design considerations and provide best-practice recommendations on how to (i) measure beliefs, (ii) design the information intervention, (iii) measure belief updating, (iv) deal with potential confounds, such as experimenter demand effects, and (v) recruit respondents using online panels. This review covers methodological innovations, such as obfuscated follow-up designs, that we had developed in earlier work examining narratives about the labor market impact of immigration (Haaland and Roth, 2020) and narratives about drivers of racial inequalities (Haaland and Roth, 2021).

Finally, my co-authors and I also are working on new methods to integrate insights gained from experiments into macroeconomic models. The key idea behind this paper is to allow for heterogeneity in mental models about the effects of monetary policy and to account for this heterogeneity when calculating the effects of monetary policy on aggregate consumption. In "**The Effects of Monetary Policy: Theory with Measured Expectations**" (with Mirko Widerholt and Johannes Wohlfart), we study the effects of monetary policy on aggregate consumption combining a heterogeneous agent model with measured expectations under different policy counterfactuals. We express the consumption of non-hand-to-mouth households as a function of expectations only and elicit all expectations appearing in the consumption functions for alternative monetary policy scenarios with tailored surveys. Feeding these individual-level expectations into the model illustrates that a modest forward guidance statement in March 2021 would have reduced aggregate consumption by 0.14% on impact and an interest rate hike of 40 basis points in March 2022 would have reduced aggregate consumption by 0.30% on impact.

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