

# Dividnorm Workshop 2014

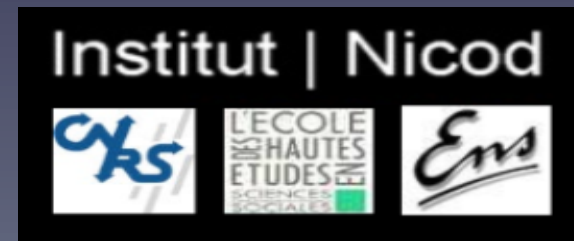
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## Conformity and consensus

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# Outline

- 1 The cognitive sources of perceptual conformity
- 2 Attitude and belief changes
- 3 Conformity does not always amount to consensus
- 4 Confidence judgments and consensus
- 5 Deference to epistemic authority vs compliance to social authority

**Conformity** refers to the act of changing one's behavior to match the behaviors of the majority and to the resulting outcome.

**Consensus** refers to the act of changing one's judgment to match the judgment of the majority and to the resulting outcome.

Consensus has also been called « informational conformity » (motivated by the desire to form an accurate interpretation of reality)

in contrast with

« normative conformity » (motivated by the desire to obtain approval from others.

(Deutsch & Gerard, 1955)

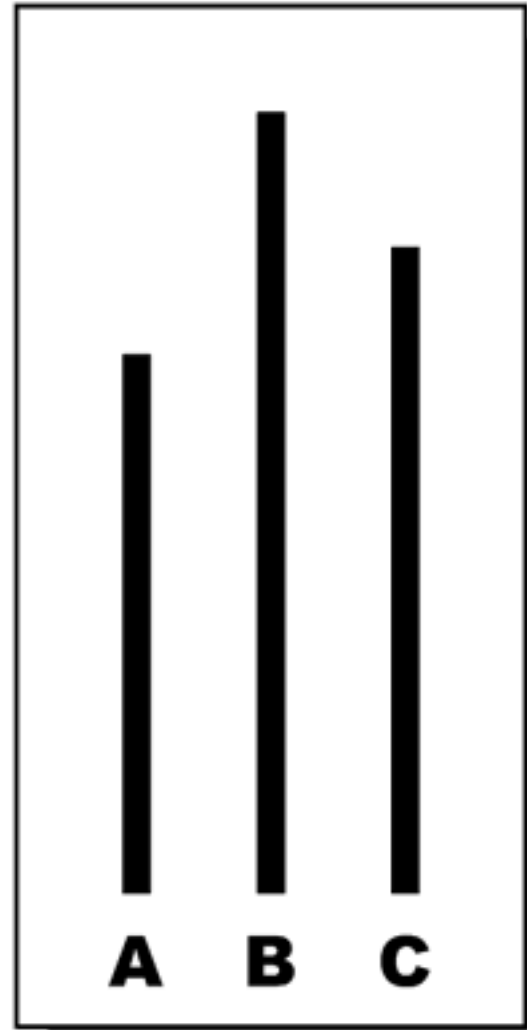
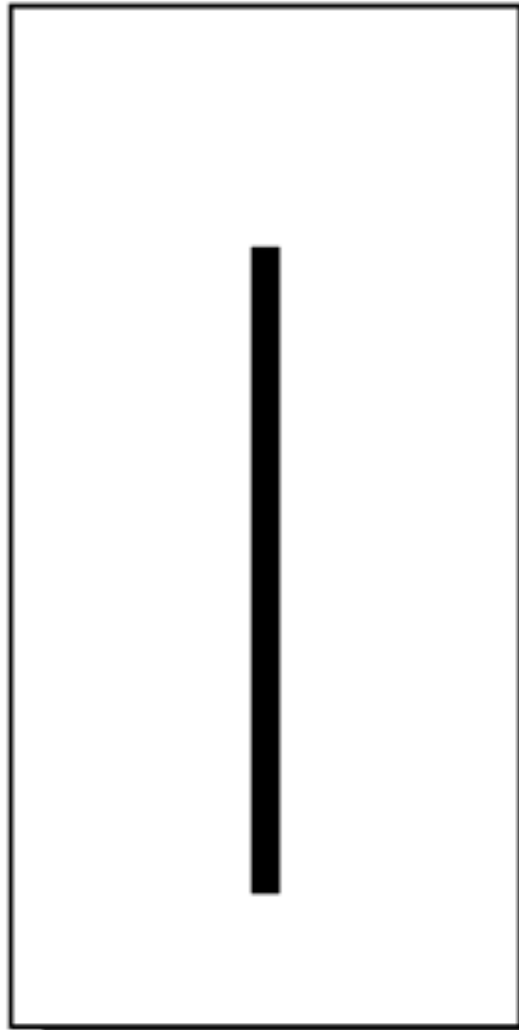
- Conformity and consensus have been claimed to be interrelated and difficult to disentangle theoretically as well as empirically

(David & Turner 2001, Cialdini & Goldstein, 2004 ).

- A source of theoretical confusion consists in calling « conformity » both phenomena, which biases analysis toward an **affiliative** rather than **epistemic** account of consensus.

# Asch « conformity » experiment

- Each participant was placed in a room with seven confederates, introduced as participants.
- Participants were shown a card with a line on it, followed by a card with three lines on it.
- Participants were then asked to say aloud which line (i.e., A, B, or C) matched the line on the first card in length.





# Asch « conformity » experiment

- Prior to the experiment, all confederates were told to unanimously give the correct response or unanimously give the incorrect response.
- The real participant was always the last to respond (i.e., the real participant sat towards the end of a table).

# Asch « conformity » experiment

- There were 18 trials in total and the confederates answered incorrectly for 12 of them.
- Identical “critical” trials were presented early and late in the series
- In a control condition, the participant was presented the stimuli in the presence of the experimenter, with no confederates present.

# Asch « conformity » experiment: results

- Control group: errors less than 1%
- Critical subjects:
  - Participants followed incorrect majority in 37% of the trials.
  - 25% of participants errorless
  - no consistent growth of the majority effect with time. Limited rise of error responses in the first trials.
  - Intra-individual consistency across trials (yielding/not yielding)

# Asch « conformity » experiment: results

- In a subsequent experiment, participants provide their responses by writing after having heard the majority provide theirs.
- Results are intermediate between Experiment 1 and control condition; errors are now exclusively « moderate » rather than following the majority in extreme responses.
- «It is clear that the silent judgments were not private in the full sense: all but one of the critical subjects assumed that the experimenter would compare their written estimates with the majority's » (Asch, 1956)

# Causes of social influence

- In the Asch experiment, some subjects have reported experiencing a conflict between a goal of accuracy and a goal of affiliation (cf. the contrast between private acceptance and public compliance).
- Social influence is known to be mediated by neural systems sensitive to social rewards and punishments (ventral striatum, ventromedial prefrontal cortex) (Falk et al. 2012).

# Causes of social influence

- Conforming to the opinion of others might have neural mechanisms common with reinforcement learning
- A prediction-error signal (difference between expected and actual reward outcome), might be used to adjust to divergent social judgment.

Izuma et al. 2013, Shestakova et al.2012.

# What are the processes involved when yielding to majority?

- Processes **changing the decision criteria** by raising the threshold of supportive information needed to counteract majority responses?
- Processes **biasing the information uptake** toward the majority responses?

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Germer et al. (2014)

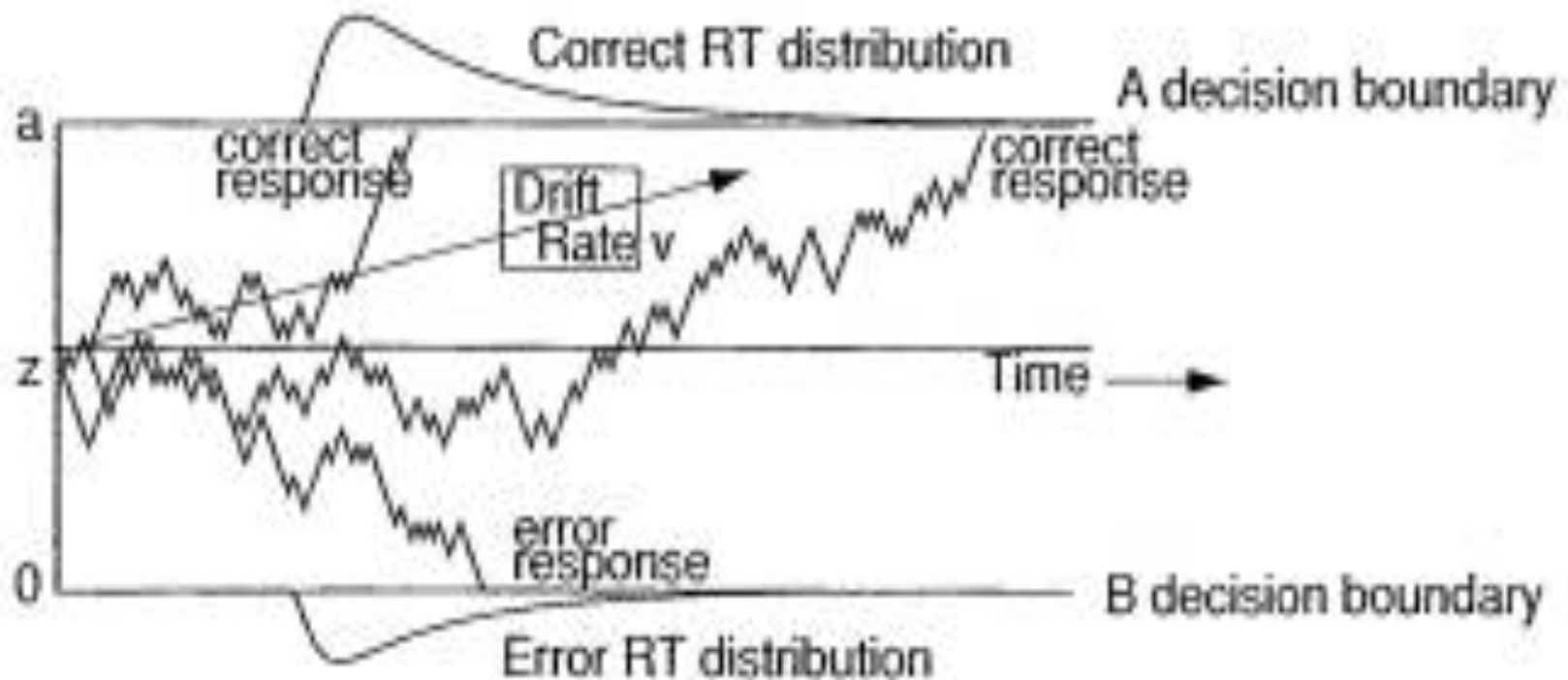


# Diffusion Decision Model

- Method meant to separate judgmental bias from perceptual bias. (Ratcliff & Mc Koon, 1998)
- This model shows how accuracy, mean response times, and response time distributions are used in cognitive processing to guide decision.

- The diffusion model assumes that decisions are made by a noisy process that accumulates information over time from a starting point toward one of two response criteria or boundaries
- When one of the boundaries is reached, a response is initiated
- The rate of accumulation of information is called the drift rate ( $v$ ), and it is determined by the quality of the information extracted from the stimulus.

# Reaction times predict correct vs incorrect decisions (Ratcliff & McKoon 2008)



- Error responses are typically slower than correct responses when accuracy is stressed in instructions or in experiments where accuracy is low
- errors are usually faster than correct responses when speed is stressed in instructions or when accuracy is high

(Luce, 1986; Swensson, 1972).

- The effects of speed versus accuracy instructions are translated into differences in the criterial amounts of information required before a decision could be made

# Germer et al's study

- Aim to evaluate the source of social influence in Asch-like cases:
- **Judgment bias:** awareness of colleagues' opinion may lead to shift the starting point toward the threshold in favor of a given decision (asymmetric thresholds)
- **Perceptual bias:** others' opinion may lead to affect the rate of information uptake (drift rate) (symetric thresholds)

# Germar et al's study: task

- 4 participants sitting in the same room had to complete a perceptual decision-making task simultaneously on separate computers.
- They are asked to decide as quickly and as accurately as possible whether the dominant color of a square was orange or blue
  - **Task difficulty** manipulated by the proportion of pixels in each color
  - **Social influence** induced: the alleged responses of the other three participants were presented on the screen before the stimulus was shown (unanimous correct/incorrect).

# Germar et al's study: task

Experimental condition: participants were told that, on a given trial, each participant would respond to the same visual stimulus. (relevant:R+)

Control condition: participants were told that, on a given trial, each participant would respond to a different visual stimulus. . (irrelevant:R-)



# Germar et al's study: results

- Participants in the R+ Condition adopted the majority response more often than those in the R- Condition regardless of its correctness.
- **Drift rate** (perceptual bias) was larger in condition R+ than in condition R-.
  - sensory information supporting the majority response was processed more efficiently than sensory information contradicting the majority response.
  - **Starting point** unaffected by the majority responses.

# Germer et al's study: results

- A follow up study using unambiguous stimuli (54% orange pixels) with a majority response « blue » generated the same type of results (changes in the drift rate).
- Effect of instructions
  - A directional goal of arriving at a given conclusion might favor a judgmental bias.
  - A goal of accuracy might favor a perceptual bias (but why?)

# Germer et al's study: results

- A perceptual bias might reflect the motivation to conform, and instantiate « wishful seeing » (Balcetis & Dunning, 2010).
- Participants may have had 2 goals:
  - make a correct decision
  - be part of the majority.
- Participants analyzed the stimulus more carefully when exposed to a majority (distinction between the decision thresholds larger). This excludes the hypothesis of a mere compliance to majority.

# Discussion

- A perceptual bias might reflect the motivation to conform, and instantiate « wishful seeing » (Balcetis & Dunning, 2010).
- Participants may have had 2 goals:
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# Two observations

- In Asch, Germar et al. and Falk et al (2012), interindividual differences were observed between participants' sensitivity to majority opinion.
- Germar's finding concerns biased perception, and does not apply to all cases of social influence, in particular concerning **beliefs** or **value attitudes**.

# Kunda (1990) on reasoning

- McAllister, Mitchell & Beach (1979): subjects motivated to be more accurate choose more complex and time-consuming decision-making strategies.
  - Less attribution error
  - Less primacy effect in impression formation
  - Less ethnic stereotypes in evaluating essay quality
  - Less anchoring in probability judgments

## 2 - Conformity and consensus in belief acquisition

- When the objective truth of a statement is difficult to evaluate, people often draw on social consensus information to arrive at a judgment, based on the assumption that what many people believe is probably true.
- A fluent statement is taken to reflect consensual and accurate information (Schwarz 2004)



- Allport & Lepkin (1945): the stronger predictor of belief in rumors is simple repetition.
- The effect of repetition works after a 3-day delay even when participants are first told that the information is false. (Skurnik et al., 2005)

Hearing **one** person express an opinion repeatedly leads perceivers to estimate that the opinion is more widespread relative to hearing the same communicator express the same opinion only once.

The effect holds even when perceivers are consciously aware that the opinions come from 1 speaker.

Weaver, et (2007)