Supporting Online Material for

Coping with Chaos: How Disordered Contexts Promote Stereotyping and Discrimination

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Published 8 April 2011, Science 332, 251 (2011)
DOI: 10.1126/science.1201068

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SOM Text
References
Mood measure:
In all experiments, we included a one-item measure of mood (S1) (“How negative/positive do you feel at this moment?”, “1” = negative, “9” = positive). In none of the experiments did mood have a significant effect on the dependent variables ($F$s < 1), and thus we did not further elaborate on “mood”.

Cognitive load versus need for structure
Since a number of studies have demonstrated that cognitive load increases the use of stereotypes (S2-S5), it seems logical to assume that cognitive load is increased in chaotic, disordered environments. One might thus surmise that the results reported in the experiments are simply due to an increase in cognitive load rather than produced by a heightened need for structure. There are, however, several reasons why this is unlikely: (1) The lab studies reported here clearly show that increases in the need for structure statistically mediate the effects of disorder on stereotyping; (2) Recent research (S3) shows that the effects of cognitive load on stereotyping are probably best explained in terms of a heightened need for structure because cognitive load automatically increases this need; (3) We replicated our First lab study with an added “cognitive load” condition to empirically test the hypothesis that the
impact of disorder on stereotyping is mediated by an increased need for structure rather than an increased cognitive load. Sixty-one students (Mean age = 20, 50 % females, all Caucasian) were randomly assigned to a disorder or order or a neutral priming condition or to a cognitive load condition in which they were asked at the beginning of the experiment to remember a 9 digits number (S3, S4). Given earlier results, we predicted that both disorder and cognitive load would lead to more stereotyping and that in both cases an increased need for structure is an important force behind this effect. We measured the need for structure and stereotyping as before (see lab experiments in main article) and we added a cognitive load measure (“How busy are you mentally, at this moment?”; “1” = not at all, “9” = very much). As predicted, an analysis of variance showed that both the need for structure and stereotyping were considerably higher in the disorder condition (Mstructure = 6.08, SDstructure = 1.71; Mstereo = 6.05, SDstereo = 1.66) and in the cognitive load condition (Mstructure = 6.00, SDstructure = 1.68; Mstereo = 5.98, SDstereo = 1.74) than in the order condition (Mstructure = 4.27, SDstructure = 1.87; Mstereo = 4.60, SDstereo = 1.68) or the neutral condition (Mstructure = 4.88, SDstructure = 1.09; Mstereo = 4.69, SDstereo = 1.20). These effects were significant, $F(3, 57) = 4.06, p < .05$ and $F(3, 57) = 4.52, p < .01$, respectively. Importantly, in the cognitive load condition ($M = 5.35, SD = .79$) but not in the disorder condition ($M = 2.77, SD = .73$), participants felt cognitively busier than in the order ($M = 3.47, SD = .83$) or neutral ($M = 3.31, SD = 1.03$) condition, $F(3, 57) = 22.30, p < .01$.

In support of the hypothesis that the impact of disorder on stereotyping is mediated by an increased need for structure rather than an increased cognitive load, we found (a) that the need for structure and stereotyping were again highly correlated ($r = .78, p < .01$), and (b) the predicted mediation. A covariance analysis indicated that the effect of condition on stereotyping was no longer significant when the need for structure was included as a covariate, $F(3, 56) = .77, p = .51$ (t-test covariate = 8.46, $p < .01$), whereas this was not the
case when judgment of experienced load was included as a covariate $F(3, 56) = 4.88, p < .01$ (t-test covariate = 1.48, $p > .14$). In addition, we used the bootstrapping method for testing mediation proposed by Preacher and Hayes (S6) to test to what extent structure striving and cognitive load mediated the effects of disorder on stereotyping. This analysis revealed the need for structure as a significant mediator for the effect of disorder on stereotyping ($\beta_{\text{boot}} = 0.88, SD = 0.37, p < .01$). None of the accelerated estimated confidence intervals of 5,000 bootstrap resamples included a zero at the 95% confidence level (Lower Level Confidence Interval = 0.19; Upper Level Confidence Interval = 1.65). This analysis also revealed that load did not mediate the effect of disorder on stereotyping. The estimated confidence intervals of 5,000 bootstrap resamples for cognitive load as mediator included at least one zero at the 95% confidence interval (Lower Level Confidence Interval = -0.06; Upper Level Confidence Interval = 0.55). Consequently, estimates of an indirect effect of load did not reach significance in the mediation analysis.

This clearly suggests that the disorder-to-stereotyping effects reported in the article are driven by increases in the need for structure rather than increases in cognitive load.

First field experiment

The subjects were Caucasian people waiting for a train. They were asked to participate in exchange for a candy bar or an apple. Response rates were high (91% in the disorder condition, 87% in the order condition a week later). They were asked one by one because they had to sit down to fill in the questionnaire. The confederates (one Dutch-African and one Dutch-Caucasian male, both 20 years old) were blind to the aim of the experiment.

As a check on the conditions, we included a measure that taps perceptions of environmental orderliness (“I think this train station leaves a …,” “1” = chaotic impression, “9” = organized impression). Analyses of the perception of orderliness showed the predicted
environment effect, $F(1, 76) = 18.11, p < .01, \eta^2 = .17$. Participants who completed the questionnaire in an unclean train station felt significantly more that the train station left a disorganized impression ($M = 4.33, SD = 1.23$) than participants who completed the questionnaire in a clean station ($M = 5.46, SD = 1.01$).

For the measurement of stereotyping, we included positive and negative traits in the expectation that stereotyping for structure will apply to both positive and negative traits ($S2$). Specifically, participants were asked to rate “Muslims” on two positive stereotypes (hardworking, loyal), two negative stereotypes (aggressive, intolerant), and two traits unrelated to the stereotype of this group (impatient, intelligent); “Homosexuals” on two positive stereotypes (creative, sweet), two negative stereotypes (strange, feminine), and two unrelated traits (impatient, intelligent); “Dutch people” (ingroup stereotyping) on two positive stereotypes (tolerant, transparent), two negative stereotypes (stingy, rude), and two unrelated traits (impatient, intelligent). In order to avoid unintended “race” priming of the subjects, we did not include a racial group in the questionnaire. In the overall stereotyping measure that is reported in the article, the positive and negative traits for all groups were collapsed. Separate analyses revealed that for each group (Muslims, Homosexuals, Dutch) the pattern of means for the positive and negative stereotyping measures was very similar. One can write to the first author for details.

Second field experiment

The response rates were high, 85% the first day and 88% the second day. The (orderly) second day condition matched the first day in time of day and weather. As a check on the manipulation and the difference between orderliness and cleanliness, we included two items: “I think this location leaves a …” (“1” = chaotic impression, “9” = organized impression) and “I think this location is …” (“1” = dirty, “9” = clean). The analysis of variance revealed that in the disorder condition, the location of the experiment was perceived as more chaotic ($M =$}
4.04, $SD = 1.11$) than in the control condition ($M = 4.92, SD = 1.01$), $F(1, 45) = 7.93, p < .01$ but not as dirtier ($F < 1$).

First lab experiment

As a check on the conditions, we used the same items on orderliness and cleanliness as in the second field experiments. The analysis of variance revealed that the disorder primes were perceived as more chaotic ($M = 3.40, SD = 1.12$) than both the order primes ($M = 5.94, SD = 1.53$) and the neutral primes ($M = 4.98, SD = .89$), $F(2, 44) = 18.04, p < .01$, but not as different in dirtiness ($F < 1$).

Second lab experiment

Procedure. Upon arrival in the laboratory, participants were seated in front of a computer. First, participants performed a parafoveal vigilance task in which words were presented outside of awareness. The experimenter explained the vigilance task and then instructed them to place their index fingers on two keys of the keyboard and to press the left key, labeled “L,” if a flash appeared on the left side of the screen, and the right key, labeled “R,” if a flash appeared on the right side of the screen. A fixation point consisting of one X was presented continually in the center of the screen. Participants were given 10 practice trials to become familiar with the procedure. The actual task consisted of 60 trials. Words were presented for 80 ms and immediately followed by a 120-ms mask ($S_1, S_6, S_7$).

Previous studies have shown that this paradigm provides sufficient safeguards to prevent participants from becoming aware of the priming stimuli ($S_7$). Indeed, an extensive prime recognition task and funnel debriefing procedure revealed that none of the participants showed awareness of the priming stimuli ($S_8$). After having completed the vigilance task, participants were thanked for their participation and were given the need for structure and
stereotyping questionnaires we used in the first lab experiment.

References


