



Original Article

Fertility and race perception predict voter preference for Barack Obama[☆]

Carlos David Navarrete^{a,*}, Melissa M. McDonald^a, Michael L. Mott^a,
Joseph Cesario^a, Robert Sapolsky^{b,c}

^aDepartment of Psychology, Michigan State University, East Lansing, MI 48824, USA

^bDepartment of Biology, Stanford University, Stanford, CA, USA

^cDepartment of Neurobiology, Stanford University, Stanford, CA, USA

Initial receipt 7 October 2009; final revision received 5 May 2010

Abstract

Research shows that women more positively evaluate targets evincing cues of high male genetic quality as a function of fertility across the menstrual cycle. Recently, a link between fertility and anti-black race bias has also been documented, an effect that is argued to serve a sexual coercion avoidance function. Here we demonstrate that both effects can be operative toward the same male target depending on inter-individual differences in race perception of the target. Across two studies, we found that the intention to vote for Barack Obama in the months preceding the 2008 election increased as a function of conception risk across the menstrual cycle. In the second study, we found that the effect is greatest among women who perceived him as more white than black, whereas the opposite was true among women who perceived him as mostly black. Our findings tie together separate conceptual research threads on positive and negative evaluations of men by women across the menstrual cycle — integrating them to shed light on women's voting preferences.

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Keywords: Conception risk; Menstrual cycle; Sexual coercion avoidance; Race bias; Discrimination; Political psychology

1. Introduction

In this article, we describe initial study results from a research program that explores how the psychology of perceptual biases and evolved mate preferences interact and how they may be related to current political and social attitudes, particularly among women (Cheesman & Merikle, 1984; Sigelman, Sigelman, Thomas & Ribich, 1986). In doing so, we investigate how race perception, political ideology and fertility shifts across the menstrual cycle are related to women's voting preferences for Barack Obama in the 2008 election.

Two related, yet distinct, lines of research from within evolutionary psychology are relevant to how women's voting preferences might change as a function of fertility. One line is the threat which has shown that, perhaps due to

fitness benefits conferred on one's offspring, normally cycling women are particularly attuned to cues of attractiveness, power and dominance in men around the phase of the menstrual cycle when conception risk is highest (e.g., Gangestad & Cousins, 2001). The second thread suggests that women may become more wary of men categorized as dangerous agents as a function of conception risk, as women more negatively evaluate men perceived as sexually coercive to engage in sexual tactics at peak fertility than at other times (e.g., Garver-Apgar, Gangestad & Simpson, 2007).

Along the lines of the second thread, recent research suggests that normally cycling women react more negatively toward black American men as a function of increased risk of conception (Navarrete, Fessler, Santos Fleischman & Geyer, 2009). The latter finding is argued to be the epiphenomenal output of a psychological system evolved to orient women to avoid sexual coercion and thus maintain the integrity of a core feature of mammalian behavioral evolution: female reproductive choice. Since women are more sensitive to cues indicating men's intentions to engage in coercive sexual tactics when they are ovulating (Garver-Apgar et al., 2007), they may therefore be motivated to avoid situations or agents appraised as a potential threat to one's reproductive choice

[☆] This material is based in part on a grant from the National Science Foundation by the National Science Foundation, Grant No. NSF-BCS-0847237.

* Corresponding author.

E-mail address: c.d.navarrete@gmail.com (C.D. Navarrete).

(Chavanne & Gallup, 1998). Extending this logic, because black American men are typically stereotyped as dangerous persons (Correll, Park, Judd & Wittenbrink, 2002; Devine, 1989; Donders, Correll & Wittenbrink, 2008), they fit the category of agents that should be more negatively appraised when the reproductive costs are particularly high (Navarrete et al., 2009), which is when they are most likely to conceive during the periovulatory phase of the menstrual cycle.

If black American male targets may be more negatively evaluated when conception risk is high because they are typically categorized as belonging to a dangerous out-group, what might be said of black male targets that are not readily categorized as such? Consider the case of Barack Obama. Despite his mixed racial composition, it can be argued that with respect to the conscious, declarative knowledge that most Americans have about him, he is well understood to be black. In fact, he even believes as much: “I self-identify as African-American—that’s how I’m treated and that’s how I’m viewed” (Lewan, 2008). Yet Obama’s personal traits strongly violate the black male stereotype, as many well-known facts about his life fit a very different stereotype—one closer to that ascribed to white American male patricians rather than that typically associated with black Americans. For example, he has an advanced degree from an Ivy League university, has children in elite private schools and was a former senator who became President of the United States. Likewise, he is often described in terms that are counter-stereotypic to the black male archetype, such as “measured,” “level headed,” “articulate” and “clean” (Thai & Barrett, 2007). As such, there is strong overlap between his personal characteristics and the traits stereotypically associated with the category “white.”

Because Barack Obama so powerfully violates the dangerous black male stereotype, many Americans may not, at some deep level, really perceive him as black, and, therefore, some women may not perceive him a threat to reproductive choice when conception risk is high. In fact, to the extent to which he is not characterized as a threat, women should be attuned to his personal attributes befitting of an ideal mate of any race—namely, those traits that are indicators of male genetic quality, such as his attractiveness, charisma, prestige and power. This information should be used in women’s appraisals of the kind of man whose interests should be catered to and supported, particularly when conception risk is high. Therefore, contrary to the pattern found among fertile women toward unfamiliar black male exemplars by Navarrete et al. (2009), we expect that most normally cycling women would show conception risk patterns in positive evaluation that mimic those typically displayed to men of high mate quality, not to stereotypic black male targets. As such, we expected that, in a survey on political preferences conducted in the months leading up to the November 2008 Presidential Election, normally cycling women would, on average, report that they would be more willing to vote for Barack Obama for President as a function of increased fertility across the menstrual cycle.

1.1. The role of race perception

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Because there are expected to be inter-individual differences in the extent to which Barack Obama is mentally represented as being more or less “black,” we expect that this should affect the relationship between conception risk and voting preference in ways consistent with this perspective. Along these lines, we expected that the extent to which women perceive Obama as black or white should predict the strength of the relationship between conception risk and voting preference, such that, as perceptions of his skin tone towards “whiteness” and away from “blackness” increase, the relationship between conception risk and political support for him should become stronger. On the flip side, we expected that as perceptions of his blackness increases, conception risk should not lead to increased voter support, but may in fact be negatively related to expressed intentions to vote for him.

1.2. Adding political orientation to the mix

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Knowing one’s political orientation is an important predictor of voting patterns (Sniderman, 2000). Since voters on the left side of the liberal–conservative political spectrum are likely to vote along for the more liberal candidate, support for Barack Obama will already be high. However, since conservatives are less likely to support liberal candidates to begin with, any increase in support for Obama as a function of conception risk is likely to be stronger for conservative women, since they have a greater potential to switch their usual voting preferences when the liberal target is attractive, charismatic and powerful. Thus we investigated the possibility that the predicted results above would be moderated by political orientation, such that the predicted effects described above would be strongest among conservative women voters.

Here we report on the analyses of data from two separate studies, one among university undergraduates and another across a broad demographic sample of Americans. In doing so, we predicted that (1) voting preference for Barack Obama for US President would increase as a function of conception risk among normally cycling women; (2) voting preference as a function of conception risk would be modulated by the extent to which women perceived Obama as more or less black; and that (3) these effects would uniquely predict voting preference not only when political orientation is held constant, but that the effects would be strongest among conservative women. Study 1 tested Prediction 1 among a university sample of white women, while Study 2 examined all predictions across a large, demographically diverse sample.

2. Study 1

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2.1. Method

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2.1.1. Research subjects

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Participants were Michigan State University students, who agreed to participate in a psychology pool prescreen

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167 survey between 1 September to 4 November 2008. Data was
 168 culled from female participants who (a) were white US
 169 citizens, (b) did not suffer from chronic health problems, (c)
 170 had menstrual cycles of normal length, (d) were not pregnant,
 171 (e) were willing to state their voting preference and (g) and
 172 were not currently using hormonal contraceptives. Analyses
 173 described below include observations from 62 white women
 174 aged 18–22 (mean=18.91, S.D.=1.04).

175 2.1.2. Procedure

176 Participants completed an online survey described as a pre-
 177 screen for various laboratory experiments. The survey
 178 consisted of various psychological measures of social
 179 attitudes, personality and demographic background. Embed-
 180 ded within the questionnaire was an item that read, “Which
 181 candidate do you think you will support in the November 2008
 182 Presidential Election?” The options were (1) John McCain,
 183 Republican; (2) Barack Obama, Democrat; (3) a different
 184 candidate; and (4) I will not support any candidate/not sure.

185 2.1.3. Conception risk

186 Two questionnaire items assessed position in the
 187 menstrual cycle by asking the respondent to provide the
 188 dates of the onset of her last two menstrual periods. Dates
 189 were affirmed for participants via a follow-up Internet
 190 questionnaire that was completed on the day of their next
 191 period. From these dates, the length of the menstrual cycle
 192 and the current day into the cycle were inferred (Gangestad
 193 & Thornhill, 1998). Participants’ degree of fertility (or
 194 conception risk value) corresponding to the day of the cycle
 195 was estimated using actuarial pregnancy risk data (Wilcox,
 196 Dunson, Weinberg, Trussell & Baird, 2001). Each partici-
 197 pant was assigned a value from 0 to .094, with higher values
 198 denoting greater conception risk (mean=.04, S.D=.03).

199 2.2. Results

200 In response to the voting preference question, 39% chose
 201 Barack Obama, 49% chose John McCain and 12% chose
 202 neither candidate or were unsure. To assess the effect of
 203 conception risk on voting preference, we conducted a point-
 204 biserial correlation analysis where conception risk was the
 205 independent predictor and preference for Obama was the
 206 dichotomous outcome variable (1=Vote for Obama, 0=All
 207 other options).

208 Consistent with our prediction, the analysis revealed a
 209 significant relationship between conception risk and voting
 210 preference [$r(62)=-.28, p=.03$], such that the higher the risk of
 211 conception, the greater the probability of intending to vote
 212 for Barack Obama.

213 3. Study 2

214 3.1. Method

215 3.1.1. Participants

216 Respondents for an Internet survey were recruited via
 217 online advertisements posted to classified pages, political

discussion websites, psychology-related websites, and was
 218 conducted between 1 August and 15 December 2008. 219
 220 Observations were culled for adult, non-pregnant, premen-
 221 opausal women who were not currently using oral contra-
 222 ceptives and who reported menstrual cycles of normal
 223 length. Of these, observations were removed for women who
 224 did not plan to vote in the 2008 General Election,
 225 participated after the November 4 election, could not identify
 226 Barack Obama in a photo and who did not agree to the item
 227 “I answered all items honestly.”

Data were analyzed for 186 white and 38 non-white
 228 women aged 18 to 50 (mean=22.61, S.D.=6.73). Cycle
 229 length was standardized to a 28-day cycle because of the
 230 wide array of health, age and other demographic differences
 231 in the sample (Puts, 2006), and the forward-counting method
 232 (Gangestad & Thornhill, 1998) was used to assess cycle
 233 timing, as no follow-up questionnaire was administered.
 234 Conception risk values were calculated using the method
 235 described in Study 1 (Wilcox et al., 2001). 236

237 3.1.2. Procedure

238 Participants completed an online survey that consisted of
 239 various social attitude, image evaluation and demographic
 240 items. Embedded within the questionnaire was an item that
 241 read, “Which candidate do you think you will support in the
 242 November 2008 Presidential Election?” The options were (a)
 243 Barack Obama, Democrat; (b) John McCain, Republican; (c)
 244 a different candidate; (d) not sure/undecided; (e) will not
 245 vote; or (f) decline to state. The survey included an item
 246 assessing political orientation (1=Liberal to 7=Conservative)
 247 and ended with a series of demographic questions. Upon
 248 completion, participants were directed to a webpage that
 249 described the goals of the study.

250 3.1.3. Skin color perception bias

251 Also embedded within the survey was a measure that
 252 assessed the extent to which participants perceived Barack
 253 Obama as more or less black or white. An electronic color
 254 swatch presenting 10 different skin-tone options was
 255 presented to study respondents with an item probing “[w]
 256 hich color do you think best represents Barack Obama’s
 257 correct skin-tone?” Participants indicated their choice by
 258 checking a box under the estimated color tone (see Fig. 1
 259 for scale).

To create the stimuli for this task, we calculated a color
 260 estimate of Barack Obama’s skin tone from a sample of
 261 photos found on the Internet. Nine additional colors were
 262 created from the average skin-tone color by increasing or
 263

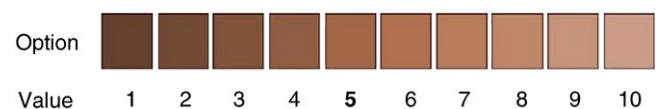


Fig. 1. Scale used to assess perceptual bias of Barack Obama’s skin color. Value 5 is correct.

decreasing the luminosity of the color and were presented to survey respondents in a swatch chart ranging from *dark* (1) to *light* (10) with the correct option (5) about midway in the spectrum (Fig. 1).

Barack Obama's correct skin tone was calculated by averaging the pixel color across the first 50 unique images of him found on Google and Yahoo! Images, using the search term "Barack Obama." As both of these search engines generate their list orders according to the popularity of the result, these are likely to be the most-seen images among Internet users at the time the swatches were generated. Within each picture, all non-skin tone was erased. A computer program calculated the average pixel color for each image, ignoring any pixel with a red, green or blue component of intensity higher than 225 or lower than 35. Removing these pixels corrected for the biasing effects of shadows, facial hair or light reflection. These images formed the average pixel color of 98694C (RGB) or 21° hue, 31% saturation and 42% luminosity. Nine additional colors were created from the average skin-tone color by increasing or decreasing the luminosity of the color in 4% increments.

3.2. Results and discussion

In response to the voting preference question, 62% chose Barack Obama, 25.5% chose John McCain and 12.5% chose neither candidate or were unsure. As in Study 1, voting preference was separated into a binary outcome variable (1=Obama, $n=139$; 0=another candidate, $n=85$). Replicating the effect reported in Study 1, a point-biserial correlation analysis revealed that conception risk was positively related to preference for Barack Obama over other candidates [$r(224)=.14$, $p=.04$].

To investigate the moderating role of race categorization, we created a logistic regression model where preference for Obama was the outcome variable, and perceptual bias (mean=6.32, S.D.=1.92), conception risk (mean=.03, S.D.=.03), conservatism (mean=3.52, S.D.=1.51) and their cross products were the independent variables. Robust standard errors were calculated from logit coefficients, and variables were zero centered before being simultaneously entered (Aiken & West, 1991). Full model results are reported in Table 1 (β denotes standardized estimates from a linear model).

Consistent with expectations, the analysis revealed a significant main effect for conception risk (Table 1), which was qualified by a significant two-way interaction with perceptual bias (Conception Risk \times Perceptual Bias), such that perception of Obama's skin tone amplified the positive relationship between conception risk and voting preference. This effect was true when conservatism (Conservatism) was held constant. A significant three-way interaction among these variables emerged (Conception Risk \times Perceptual Bias \times Conservatism), such that conservatism was found to moderate the relationship between conception risk and perceptual bias.

Table 1

Regression table

	<i>b</i>	S.E.	<i>z</i>	β	t
Perceptual bias	.16	0.12	1.41	.06	t1.4
Conception risk	17.88	7.62	2.35	.10	t1.5
Conservatism	-1.48**	0.21	-7.01	-.63	t1.6
Perceptual Bias \times Conception Risk	12.62**	3.89	3.24	0.18	t1.7
Perceptual Bias \times Conservatism	-0.10	0.10	-1.04	-0.02	t1.8
Conception Risk \times Conservatism	-3.89	6.01	-0.65	-0.03	t1.9
Perceptual Bias \times Conception Risk \times Conservatism	4.32*	1.79	2.42	0.09	t1.10
Intercept	0.85	0.22	3.89	-	t1.11

Results of a full logistic regression model where voting preference for Barack Obama is predicted by perceptual bias, conception risk, conservatism and their cross products.

* $p=.02$.** $p<.001$.

To elucidate the nature of the predicted two-way interaction between conception risk and perceptual bias, we conducted a simple effects analysis (Aiken & West, 1991), where the relationship between conception risk was assessed at high and low levels of perceptual bias (± 1 S.D. below and above the mean). The analysis revealed that conception risk was related to increased voting preference for Barack Obama when perception of his skin color was biased toward the white side of the continuum ($b=1.28$, $\chi^2=10.54$, $p=.001$, $\beta=.28$), but not when perception was biased toward the black side ($\chi^2<1$). When simple effects were assessed at ± 2 S.D., the effect for white perceptual bias was strongly affirmed ($b=2.03$, $\chi^2=11.29$, $p=.0008$, $\beta=.44$), but black perceptual bias led to *decreased* support for Obama as a function of conception risk ($b=.94$, $\chi^2=5.46$, $p=.02$, $\beta=-.23$). That is, holding political ideology constant, the intention to vote for Barack Obama in the 2008 Presidential Election rose as a function of conception risk,

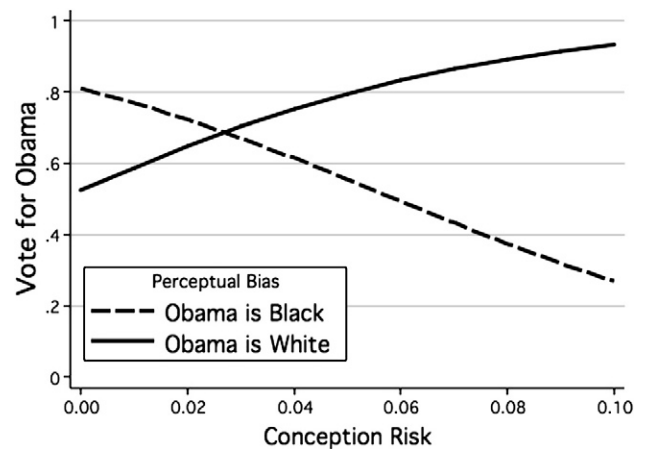


Fig. 2. Logistic regression estimates for the likelihood of voting for Barack Obama ("Vote for Obama") as a function of conception risk and perceptual bias. For visualization purposes, observations are bifurcated along the lines of respondents' perception of Obama's skin color as belonging on the light side ("Obama is White," ≥ 5) versus the dark side ("Obama is Black," ≤ 4).

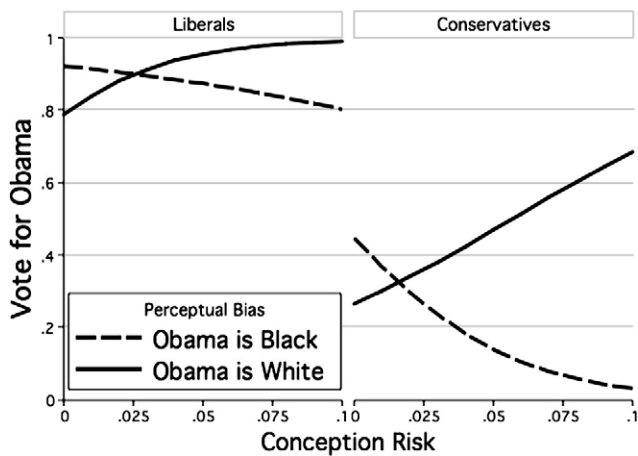


Fig. 3. Estimated likelihood of voting for Obama as a function of conception risk, perceptual bias and political orientation. For visualization purposes, observations are bifurcated by categories as described in Fig. 1 and separated by conservatism at the median (Liberals <4, Conservatives \geq 4).

360 but only when women perceived Obama as more white than
 364 black, but that this was not true among women who
 365 perceived him as more black than white. On the contrary, the
 366 latter appeared to be *less* likely to vote for Obama when
 367 conception risk was high, although the effect was detectable
 368 only at the extreme margins of perception. Fig. 2 provides a
 369 visual representation of these findings.

370 To investigate how these effects held across the political
 371 liberal–conservative continuum, we inspected the slopes for
 372 the predicted interaction (Conception Risk \times Perceptual Bias)
 373 at high and low levels of conservatism (± 1 S.D.). Simple
 374 effects assessed when conservatism was high showed that
 375 the predicted two-way interaction was caused primarily by
 376 women at the right side of the liberal–conservative
 377 dimension ($b=1.13$, $\chi^2=17.04$, $p<.0001$, $\beta=.25$), compared
 378 to those on the left ($b=.36$, $\chi^2=1.58$, $p=.21$, $\beta=.10$). Graphical
 379 inspection of these slopes (Fig. 3) suggests that the
 380 moderating role of political ideology was in part due to
 381 ceiling effects among liberal women, who would have voted
 382 for Barack Obama regardless of their reproductive state.
 383 Nonetheless, the results demonstrate a striking role for
 384 conception risk variance in modulating the well-known
 385 effect of political ideology in predicting voting preferences.

386 4. General discussion

387 Across two separate samples we found that, in the months
 388 leading to the 2008 Presidential Election, fertility changes
 389 across the menstrual cycle were related to voting preferences
 390 among normally cycling women, such that as conception risk
 391 rose, support for Barack Obama for President of the United
 392 States rose as well. In the second sample, we found that the
 393 relationship between conception risk and support for Obama
 394 was dependent on perceptions of his skin tone, such that the
 395 lighter his skin was perceived to be, the more strongly

conception risk was positively associated with support for
 Obama. However, conception risk was negatively related to
 support for Obama when his skin tone was perceived to be
 very dark.

Our findings are consistent with the notion that voter
 support for Obama increases as a function of conception risk
 when he is perceived as white, but decreases when he is
 perceived as black. That a decrease in support for Obama
 may occur among women who perceive him as black is
 consistent with previous findings suggesting that unfamiliar
 men associated with danger pose adaptive problems for
 women at peak fertility (Garver-Apgar et al., 2007) and black
 men in particular (Navarrete et al., 2009). Importantly,
 although these effects hold fast when controlling for the
 effects of political orientation, they are amplified among
 conservative women. Taken together, these results show
 how differences in perception can interact with conception
 risk changes across the menstrual cycle, with outcomes that
 modulate the otherwise powerful effects of political ideology
 in predicting voter preferences.

It is known that preexisting knowledge structures about
 social categories can influence basic perceptual processes in
 a “top-down” fashion (Bruner & Postman, 1947; Bruner &
 Klein, 1960; Cavanaugh, 1991; Correll et al., 2002; Duncan,
 1976), such that people can sometimes perceive things quite
 differently depending on their motivations to do so. Our
 findings highlight the potential for research programs
 informed by an evolutionary perspective to shed new light
 on political preferences and suggest that there may be an
 evolved political psychology that is specific to women —
 one that is linked to women’s mate choice preferences that
 are under the influence of their reproductive physiology
 (e.g., Feinberg et al., 2006; Fessler & Navarrete, 2003;
 Gangestad, Garver-Apgar, Simpson & Cousins, 2007;
 Garver-Apgar et al., 2007; Garver-Apgar, Gangestad &
 Thornhill, 2008; Garver-Apgar, Gangestad, Thornhill, Miller
 & Olp, 2006; Jones et al., 2005, 2008; Pillsworth &
 Haselton, 2006).

Research on implicit social cognition has shown that the
 influence of accessible cognitive content on judgment and
 behavior occurs automatically and without conscious
 awareness (e.g., Amodio & Devine, 2006; Bodenhausen,
 Macrae & Sherman, 1999). These are features of human
 perceptual systems that may be part of a broad psycholog-
 ical system for motivated, adaptive self-deception (Krebs &
 Denton, 1997). Given that humans generally do not have
 introspective access to their own motivated psychological
 processes (Nisbett & Wilson, 1977), such influences are not
 easily corrected. As such, our findings raise the question of
 whether Barack Obama’s success as a politician may in part
 be due to the possibility that, at a nonconscious yet operative
 level of cognitive processing, most American voters may
 not consider him to be black. The effect that we found
 across both studies — that increased risk of conception
 leads to greater political support for Obama — is consistent
 with this interpretation.


452 **Acknowledgments**

453 We thank Jim Sidanius, Dan Fessler and Ron Dotsch for
 454 their helpful comments on an earlier draft of this
 455 manuscript, and Simone Terfa and Sarah Dumouchelle for
 456 laboratory assistance.

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