

## The Influence of Facial Attractiveness on Imitation

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### Empfohlene Zitierung / Suggested Citation:

Leeuwen, M. L. v., Veling, H., Baaren, R. B. v., & Dijksterhuis, A. (2009). The Influence of Facial Attractiveness on Imitation. *Journal of Experimental Social Psychology*, 45(6), 1295-1298. <https://doi.org/10.1016/j.jesp.2009.07.008>

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## Accepted Manuscript

The Influence of Facial Attractiveness on Imitation

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PII: S0022-1031(09)00181-4  
DOI: [10.1016/j.jesp.2009.07.008](https://doi.org/10.1016/j.jesp.2009.07.008)  
Reference: YJESP 2316

To appear in: *Journal of Experimental Social Psychology*

Received Date: 3 February 2009

Revised Date: 12 June 2009



Please cite this article as: M.L. van Leeuwen, H. Veling, R.B. van Baaren, A. Dijksterhuis, The Influence of Facial Attractiveness on Imitation, *Journal of Experimental Social Psychology* (2009), doi: [10.1016/j.jesp.2009.07.008](https://doi.org/10.1016/j.jesp.2009.07.008)

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Running head: IMITATING ATTRACTIVE OTHERS

The Influence of Facial Attractiveness on Imitation

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## Abstract

People judge, evaluate, and treat attractive people better than moderately attractive or unattractive people (Langlois et al., 2000). The fact that individuals like attractive people combined with the finding that individuals imitate the ones they like, suggests that they may be more prone to imitate attractive people. The present research extends previous work on attractiveness and imitation by examining this hypothesis. Using a novel coloring procedure, we show that attractive females are imitated more than unattractive females (Experiment 1) and that attractive males are imitated more than unattractive males (Experiment 2). Importantly, this imitation occurs without any direct or anticipated contact with the target individual and without awareness of the influence of attractiveness on imitation behavior.

## The Influence of Facial Attractiveness on Imitation

*“Consider the chameleon; he colors himself and his opinions by the company he’s in. [...]*

*If that chameleon were me, I’d be ashamed to sham.”*

- Flanders & Swann, *The Chameleon*

Chartrand and Bargh’s (1999) seminal paper on the “Chameleon Effect” demonstrated that we automatically imitate the mannerisms and postures of others. Not only does this imitation occur unconsciously, it also increases liking (Chartrand & Bargh, 1999) and affiliation (Lakin & Chartrand, 2003) between the interacting partners. This tendency to imitate, often described in terms of automatic motor priming through perceiving actions in others (e.g. Iacoboni, Woods, Brass, Bekkering, Mazziotta & Rizzolatti, 1999; Blakemore & Frith, 2005; Brass & Heyes, 2005), lately has been shown to have a strong social component (van Baaren, Janssen, Chartrand & Dijksterhuis, in press). Therefore, in the following study, we aim to extend previous work on imitation by examining whether attractiveness influences the degree to which an individual is imitated.

We know that people are not imitated equally. Recent findings have demonstrated that the more we dislike people the less we imitate them (Stel, Blascovich, McCall, Mastop, van Baaren & Vonk, 2009). Liking, however, can result from fast and automatic processes, and certain characteristics in humans lead to more immediate liking, attractiveness being perhaps the most salient. An extensive program of research has shown that we judge, evaluate, and treat attractive people better than moderately attractive or unattractive people (for a review, see Langlois et al., 2000). The pervasive and fundamental nature of this “beautiful is good” effect (Dion, Berscheid & Walter, 1972) is further supported by recent studies demonstrating that our positive associations with attractive people are shaped covertly and automatically

(van Leeuwen & Macrae, 2004; Olson & Marshuetz, 2005). If individuals like attractive people more, and they are more likely to imitate people they like, people should be more prone to imitate attractive people.

The aim of the present study is to extend research on facial attractiveness, imitation and the link between them by examining whether perceiving a specific behavior leads to increased imitation when the behavior is performed by a person with an attractive compared to a less attractive face. To avoid the possibility that attractive people interact or behave differently than unattractive people (e.g., due to different social histories), we developed an imitation paradigm that did not involve actual interaction with partners. We did this also to test how strongly attractiveness influences imitation, even when there is no one to relate to, and nothing to gain by it. Furthermore, would people still be influenced by attractiveness in a task completely unrelated to appearance?

In the current experiments, we presented participants with the purported behavioral outcomes of attractive or unattractive people. Participants saw a colorful art piece that was ostensibly created by either an attractive or an unattractive person. They were then asked to color in a blank reproduction of the piece. We expected that participants would color the reproduction in a manner more similar to the original (i.e., imitate the target person more) when the original was supposedly made by an attractive person compared to an unattractive person. We also included a control condition without an accompanying face to assess whether any differences in imitation were driven by attractiveness or by unattractiveness. In Experiment 1 we used two pictures of females for attractive and unattractive people.

### Experiment 1

#### *Method*

*Participants & Design.* We recruited 60 students at the Radboud University Nijmegen (42 females) as participants for this study in return for course credit or €2. The design was a 3

(face condition: attractive vs. control vs. unattractive) between-subjects design with imitation of color use as the dependent variable.

*Material.* An art piece of a chameleon, purportedly created by a *female* third-year Rotterdam art student, consisted of a coloring plate of a chameleon divided into 13 segments. Each of these segments was colored red, green, or blue. All participants received the exact same chameleon. Depending on condition, next to the art piece was no picture (control condition), a picture of an attractive face, or a picture of an unattractive face (both pictures taken from previous research on facial attractiveness; Braun, Gruendl, Marberger, & Scherber, 2001). The attractive and unattractive face were full-color morphs and represented either a prototypical attractive female ( $M = 6.19$  on a 7 point scale) or a prototypical unattractive female ( $M = 3.29$ )<sup>1</sup>. Images were standardized on hair, skin, background and contrast.

*Procedure.* Participants were given a three-page booklet of materials and three colored felt-tip markers (red, green and blue). The first page gave a cover story, stating that we were interested in studying similarities and differences between laypeople and experts in using colors. On the following page was an art piece by a Rotterdam Art Academy student (see Figure 1). Below this, the art piece was reproduced, but without any colors. Participants were instructed to color this lower piece as they saw fit, with only two restrictions: 1) they must use each of the three colors available at least once, and 2) they must color every segment. On the last page were four questions related to the previous task (liking of students' art piece, enjoyment of coloring, liking of own art piece, frequency of painting/coloring in real life) that had to be answered on 9-point scales.

### *Results & Discussion*

To assess the amount of imitation, we counted how often a participant used the same color for a segment as in the original art piece (maximum of 13 possible). Hence, higher

scores reflect more imitation. One participant was excluded from the analyses due to erratic coloring of the entire page. Participant sex had no effect in preliminary analyses ( $F_s < 1$ ) and was dropped from the final analyses.

As expected we found a main effect of condition,  $F(2, 58) = 4.40, p < .02, p_{\text{rep}} = .93, \eta_p^2 = 0.14$  (see Figure 2). Independent t-tests showed that the art-piece by the attractive art student was copied significantly more ( $M = 5.47$ ) than the unattractive student's art piece ( $M = 3.24$ ),  $t(32) = 3.00, p < .006, p_{\text{rep}} = .97, d = 1.06$ . Furthermore, the attractive student's art piece was imitated marginally more than the control art piece ( $M = 3.95$ ),  $t(40) = 1.92, p = .06, p_{\text{rep}} = .86, d = 0.62$ . The unattractive student's art piece was not imitated significantly less than the control art piece,  $t(40) = 1.13, p = .27, p_{\text{rep}} = .67, d = 0.36$ .

There were no effects of any of the explicit measures on the amount of imitation. However, it is possible that participants liked the attractive person's art piece more, which then led them to imitate it more. To explore this possibility we ran the same analyses again, and included participants' liking of the art piece as a covariate. Results showed no main effect of liking and no interaction with attractiveness. None of the previous reported findings changed. In other words, there seemed to be no influence of liking of the original on any coloring behavior.

Additional post-test measurements indicated that none of the participants guessed the hypothesis of the current experiments. No one believed that the attractiveness of the face had or could have influenced their perception of the art piece or their subsequent coloring.

Thus, Experiment 1 shows that participants imitate an art-piece more when it is supposedly created by an attractive female art student versus an unattractive female art student. These data indicate that a person's attractiveness influences behavior even in a task for which that attractiveness is completely irrelevant (i.e., deciding on how to use color), and hence is suggestive of non-deliberative imitation of behavior of an attractive other. In



Experiment 2, we sought to replicate this finding with different stimuli. Most importantly, we used pictures of male instead of female faces. Because we did not find an effect of participant sex in Experiment 1, we expected that our findings would not be restricted to female faces. In addition, we used a different art piece to explore the general validity of the paradigm.

## Experiment 2

### *Method*

*Participants.* We recruited 62 new students as participants (43 females) for this study in return for course credit or €2. The design was the same as in Experiment 1.

*Material.* The materials and procedure were the same as in Experiment 1, except that a different art piece was used and participants were told it was created by a male art student. The art piece was a “Ganesh” (Indian elephant god) consisting of a coloring plate divided into 17 segments, which each of these segments colored red, green or blue. The pictures of the attractive male student ( $M = 5.55$ ) and the unattractive male student ( $M = 3.94$ ) were taken from the same source as in Experiment 1.

### *Results & Discussion*

Imitation was assessed as in Experiment 1, except the maximum score was now 17. Again, no effect of participant's sex was found (all  $F_s < 1$ ), and this factor was dropped from the analyses. As expected we found a main effect of face condition  $F(2, 61) = 3.73, p = .03, p_{\text{rep}} = .91, \eta_p^2 = 0.11$  (see Figure 3). Again, the attractive student's art piece was imitated significantly more ( $M = 6.94$ ) than the unattractive student's art piece ( $M = 4.65$ ),  $t(37) = 2.44, p = .02, p_{\text{rep}} = .93, d = 0.80$ . Additionally, there was a trend towards imitating the attractive student's art piece more than the control art piece, ( $M = 5.40$ ),  $t(40) = 1.68, p = .10, p_{\text{rep}} = .81, d = 0.53$ . The unattractive student's art piece was not imitated significantly less than the control art piece,  $t(41) = 1.23, p = .23, p_{\text{rep}} = .70, d = 0.38$ .

Again, we obtained no significant effects of attractiveness on the other measures, and controlling for participants' liking of the original art piece did not yield any significant effects or change any of the results previously reported. None of the participants guessed the hypothesis of the current experiments or more generally that the attractiveness of the art student should influence their perception of the art piece or their subsequent coloring behavior.

Experiment 2 replicates and extends the findings from Experiment 1, showing that attractive males' behavioral outcomes are imitated more than those by unattractive males and confirms the robustness of the paradigm.

#### General Discussion

In two experiments, we found that an art piece purportedly created by an attractive person was imitated significantly more often than an art piece purportedly created by an unattractive person, regardless of whether the maker was male or female.

We believe such imitation occurs unconsciously, perhaps automatically. After all, our effects were not mediated by explicit liking of the art piece, and participants were unaware of the purpose of the study. Nonetheless, it is not possible to completely rule out conscious deliberation as a contributor to the effect. For instance, the process of choosing colour may happen consciously. Future experiments will need an additional, preferably online, method of assessing what drives the colouring behaviour. Still, independently of how; the simple fact that someone is attractive makes us imitate them.

Furthermore, there was no real or expected interaction with the students, removing any possible overt social drive for participants to please the student or strengthen their affiliation with them. The fact that attractiveness influences imitation in such an arbitrary and independently performed task confirms our suspicion of the strong effect of facial attractiveness on our "voluntary" behavior.

We also used a “no face” control condition with no picture of the student to explore whether the attractive person or the unattractive person drove our effects. If anything, the data suggest that while we imitate the attractive we do not necessarily avoid imitating the unattractive. However, it is conceivable that using a more unattractive face could result in less imitation, but, as mentioned in footnote 1, this might lead to unnatural unattractiveness. Conclusions in regard to the control condition have to be interpreted with caution though, as it was not an “average” face but a no-picture condition.

We propose the results stem from the established “beautiful is good effect”. We like attractive people more and this could lead to an unconscious drive to imitate their behavior and decisions using the example behavior as an authoritative guideline. Alternatively, but not mutually exclusive with the previous explanation, the effect could be driven by a need for affiliation (Lakin & Chartrand, 2003). Attractive people are perceived as good and we want be part of this “goodness”, we become closer with this person and take on some of this persons characteristics and behaviors. This is an explanation not far from a “basking in reflected glory” account (Cialdini et al., 1976) where some of the quality of another person we identify with shines down upon ourselves.

It is also noteworthy that there were no observed differences between female and male participants in how they copied the female or male students. Although our number of male participants was somewhat low, previous studies on the automaticity of positively evaluating attractive people neither found any effects of participants’ sex (van Leeuwen & Macrae, 2004; Olson & Marshuetz, 2005).

In sum, our effects illustrate the advantages attractive individuals have over unattractive people in getting others to imitate their behaviour even when there is no apparent benefit to be gained by the imitator. We mindlessly imitate those we like, and we like attractive people, so therefore we imitate attractive people.

The present research indicates that work from attractive artists might be imitated more easily than work of unattractive artists. Future research may examine whether imitation of attractive people generalizes to other domains. For instance, it could be that decisions, ideas, and actions in business made by attractive people are more readily imitated than those made by unattractive people. Awareness of this possible pervasive influence of attractiveness is important, as it could lead to regulation of this influence, especially in those instances where attractiveness is not (necessarily) relevant to performance of the observed behavior.

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#### Authors Note

We would like to thank Pamela Smith and Daniel Fitzgerald, for their constructive reviews on earlier versions of this manuscript. Special thanks go to Jeroen Derks for his artist impression of our chameleon coloring plate.

ACCEPTED MANUSCRIPT

## Footnotes

1. While the unattractive face may seem more moderate than unattractive, it was the lowest ranking face when standardizing all other factors for maximum comparison validity. Also participants generally do not rank faces a 1 or 2 unless they are scarred or deformed (van Leeuwen & Macrae, 2004). In these experiments we wanted to use a typical variance in attractiveness.



Fig. 1. Example of an art-piece purportedly created by an attractive female art-student. The art-student was represented by either an attractive or unattractive face with name and school in text below. In the control condition there was only the same text. NOTE: The chameleon art-piece in this image is an artist impression of the original used in the experiment in accordance with copyright regulations.

Fig. 2. Number of matching segments between the participant and the female art-student's piece for the attractive (left), control (middle) and unattractive (right) conditions. Error bars are + 1SE.

Fig. 3. Number of matching segments between the participant and the male art-student's piece for the attractive (left), control (middle) and unattractive (right) conditions. Error bars are + 1SE.



Dit kunstwerk is van Lisa Hagedijk.  
Zij is derdejaars student aan de Willem de  
Kooning Academie (kunstacademie in  
Rotterdam)

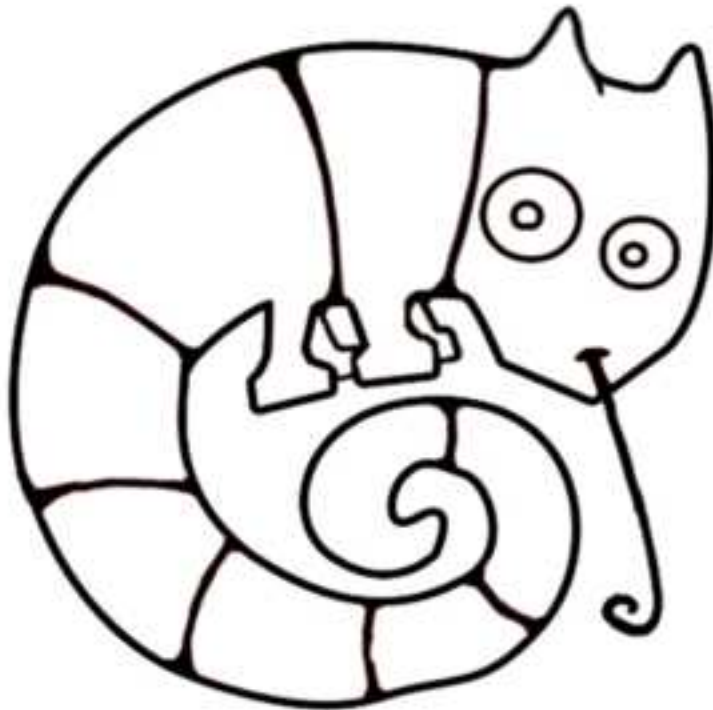


Figure 2

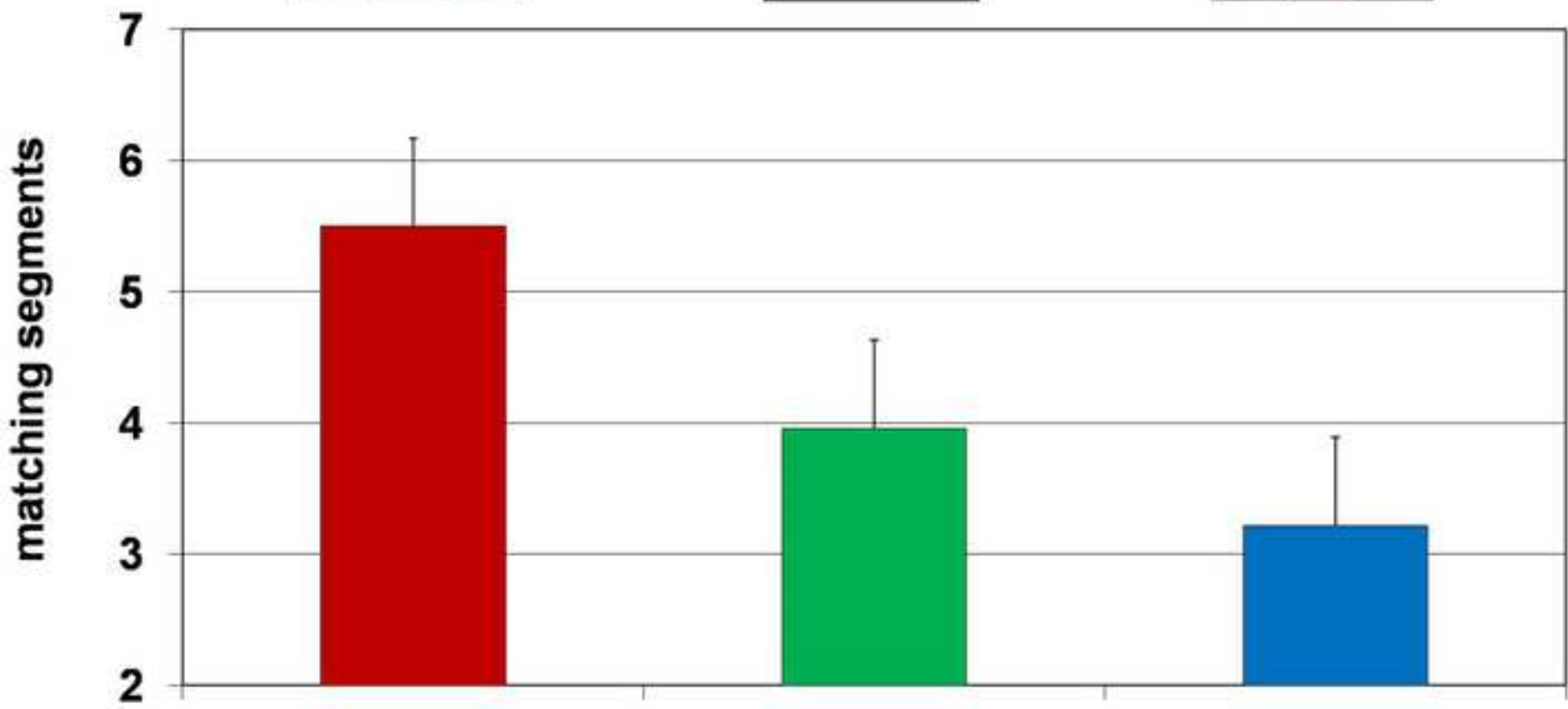
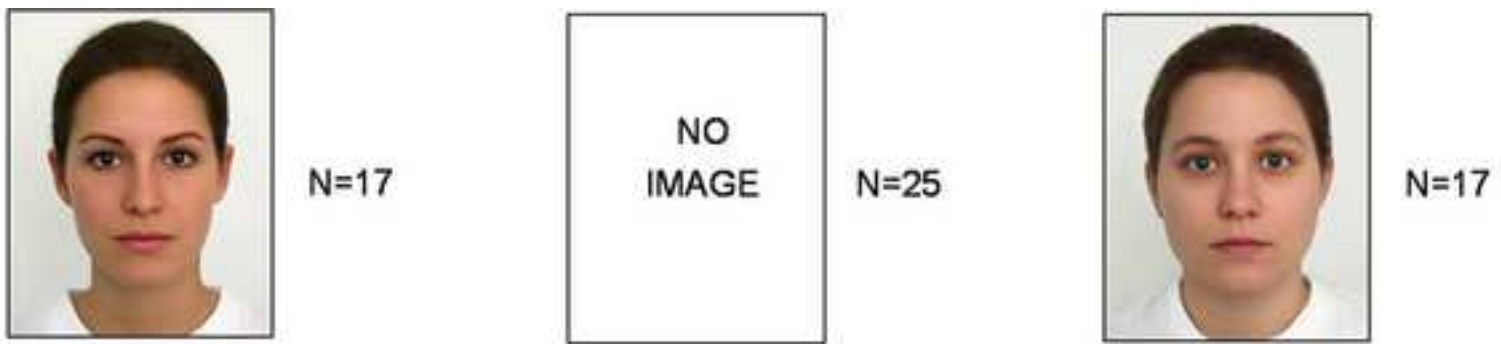
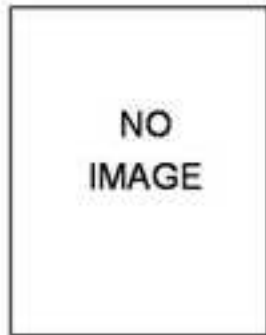


Figure 3



N=19

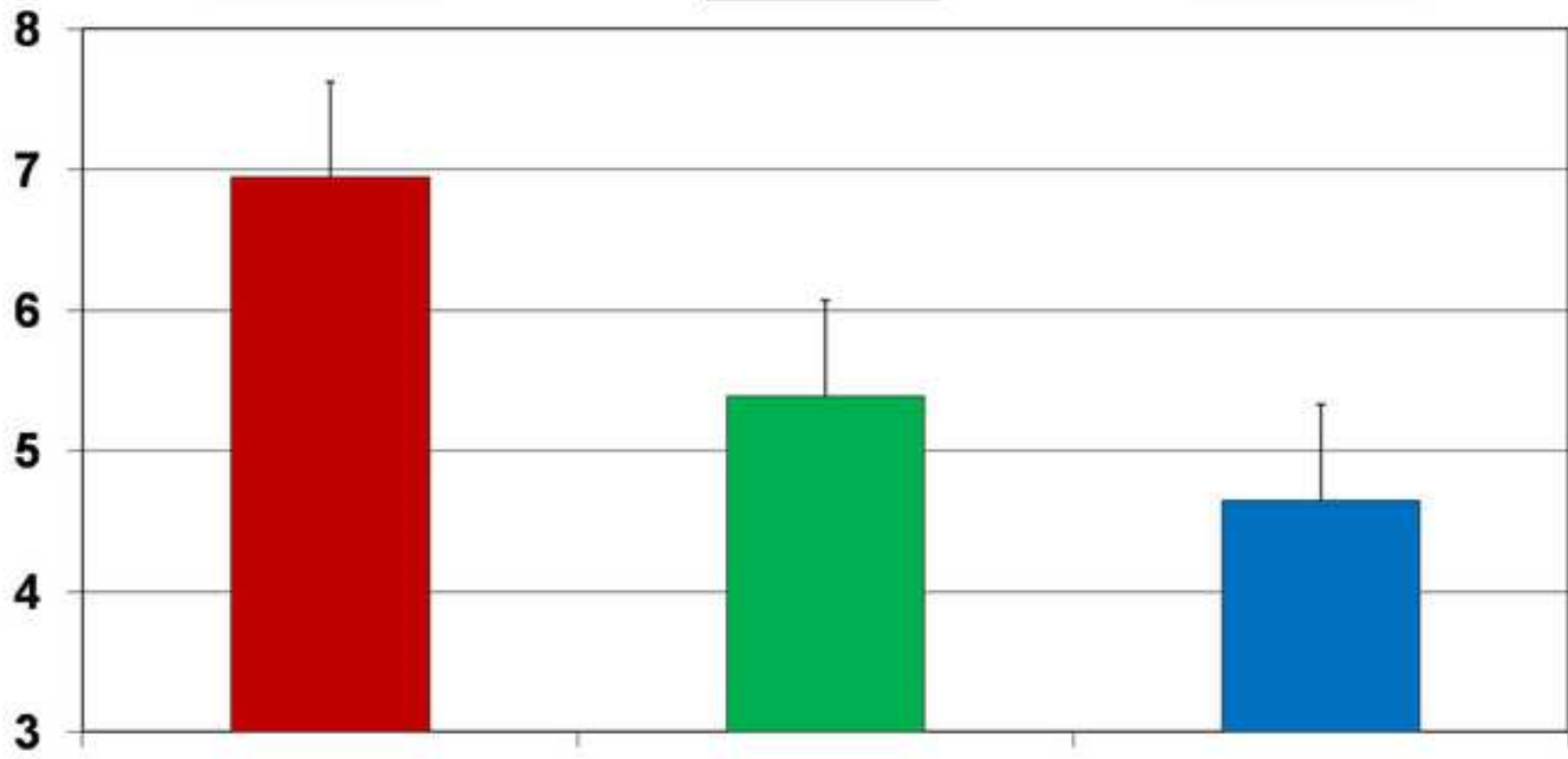


N=23



N=20

matching segments



ACC