P.677 Serotonin transporter gene polymorphisms and confidence in adult relationships affect the number of followed people on Instagram

Bonassi, A.; Cataldo, I.; Gabrieli, Giulio; Foo, Jia Nee; Lepri, B.; Esposito, Gianluca

2020

Bonassi, A., Cataldo, I., Gabrieli, G., Foo, J. N., Lepri, B. & Esposito, G. (2020). P.677 Serotonin transporter gene polymorphisms and confidence in adult relationships affect the number of followed people on Instagram. *European Neuropsychopharmacology*, 40, S385-S386. <https://dx.doi.org/10.1016/j.euroneuro.2020.09.500>

<https://hdl.handle.net/10356/147102>

<https://doi.org/10.1016/j.euroneuro.2020.09.500>

© 2020 Published by Elsevier B.V. All rights reserved. This paper was published in *European Neuropsychopharmacology* and is made available with permission of Elsevier B.V.

Downloaded on 26 Apr 2023 22:52:08 SGT

Serotonin transporter gene polymorphisms and confidence in adult relationships affect the number of followed people on Instagram

A. Bonassi¹, I. Cataldo¹, G. Gabrieli², J. Nee Foo³, B. Lepri⁴, G. Esposito¹

¹ *University of Trento, Department of Psychology and Cognitive Science, Rovereto, Italy*

² *Nanyang Technological University, Psychology Program School of Social Sciences, Singapore, Singapore*

³ *Genome Institute of Singapore, Human Genetics, Singapore, Singapore*

⁴ *Fondazione Bruno Kessler, Mobile and Social Computing Lab, Trento, Italy*

Humans are inherently social beings, whose behaviour is regulated by multiple interactions between genetic predispositions and environmental influences [1]. In-person social interactions represent the first mean to share ideas and make comparisons with others. Nowadays, communication has rapidly spread through new environments like social networks sites (SNSs). However, the quality and the frequency of online and offline interactions may vary across individuals. In this research, we probed these differences in online interactions through the lens of behavioural genetics. Our question was if the personal expectations of social behaviour could affect the frequency in the online sociability of users genetically sensitive to experiences [2].

The measure related to the in-person interaction we focused upon is the adult attachment, as recalled by the participants ($N= 58$, 42 females) in the dimensions of the *Attachment Style Questionnaire* (ASQ: confidence, discomfort with closeness, relationships as secondary, need for approval, preoccupation with relationships) [3]. The genetic factors we considered are the polymorphisms within the region rs25531 (T/T homozygotes vs C-carriers) of the serotonin transporter gene. At this level, a given genetic signature can be either protective or risk factor to sociability and social distress in human relationships.

The activity linked to online interaction was derived from Instagram, one of the most popular media-sharing SNS. We collected three parameters as a proxy for the frequency of online interactions: the number of a) published posts, b) people that the user follows

("followings") and c) followers. Whereas the *Social Desirability Index* (SDI) was calculated as the ratio of followers to followings.

We hypothesized a cross interaction between genetic groups and adult attachment scores on the number of followings, posts and SDI, independent of the gender. Three univariate ANCOVAs were performed with the Instagram parameter as the dependent variable, the 5-HTT gene genotype rs25531 as a between-subjects factor and the ASQ dimensions as continuous covariates ($\alpha = 0.0167$). A significant interaction between confidence and genotype emerged for Instagram number of followings ($F(1,57) = 7.34, p < 0.009, \eta^2 = 0.14$). Confidence was negatively associated with the number of followings for C-carriers ($t(15) = -1.11, df = 13, r = -0.30, ns$), but positively associated with the number of followings for T/T homozygous ($t(43) = 3.61, df = 41, r = 0.49, p < 0.001$). A significant difference between the slopes for T/T and C-carriers was confirmed by Fisher's z ($z = 2.56, p < 0.005$). Post-hoc Student's t -tests revealed that the users with the genotype more sensitive to environmental influences (T/T homozygotes) showed a greater Instagram number of followings than non-sensitive ones (C-carriers) when they experienced high level of confidence with others ($t = 2.38, df = 25, p < 0.013$), but not when they reported low scores in confidence ($t = -1.14, df = 29, ns$).

This result discloses potential asymmetries between genetic factors and quality in the adult relationship on online sociability. Our finding also corroborates the *plasticity genes model* [4] which describes different biological patterns of social behaviour in connection with the experiences lived throughout human development, such as the quality of relationships with the caregivers [5].

No conflict of interest

References

- [1] Cataldo, I., Neoh, M.J.Y., Chew, W.F., Foo, J.N., Lepri, B., Esposito, G., 2020. Oxytocin receptor gene and parental bonding modulate prefrontal responses to cries: a NIRS Study. *Scientific Reports* 10 (1), 1–11.
- [2] Bonassi, A., Cataldo, I., Gabrieli, G., Lepri, B., Esposito, G., 2020. Do Serotonin transporter gene and relationship with peers moderate Instagram behaviour? *Open Science Framework* Available from: osf.io/wxkq9.
- [3] Feeney, J.A., Noller, P., Hanrahan, M., 1994. *Assessing adult attachment*. Guilford Press.
- [4] Belsky, J., Pluess, M., 2009. Beyond diathesis stress: differential susceptibility to environmental influences. *Psychological Bulletin* 135 (6), 885.
- [5] Bonassi, A., Cataldo, I., Gabrieli, G., Tandiono, M., Foo, J. N., Lepri, B., Esposito, G., 2020. The interaction between serotonin transporter allelic variation and maternal care modulates sociability on Instagram. Available from: <https://doi.org/10.31234/osf.io/dkvnf>