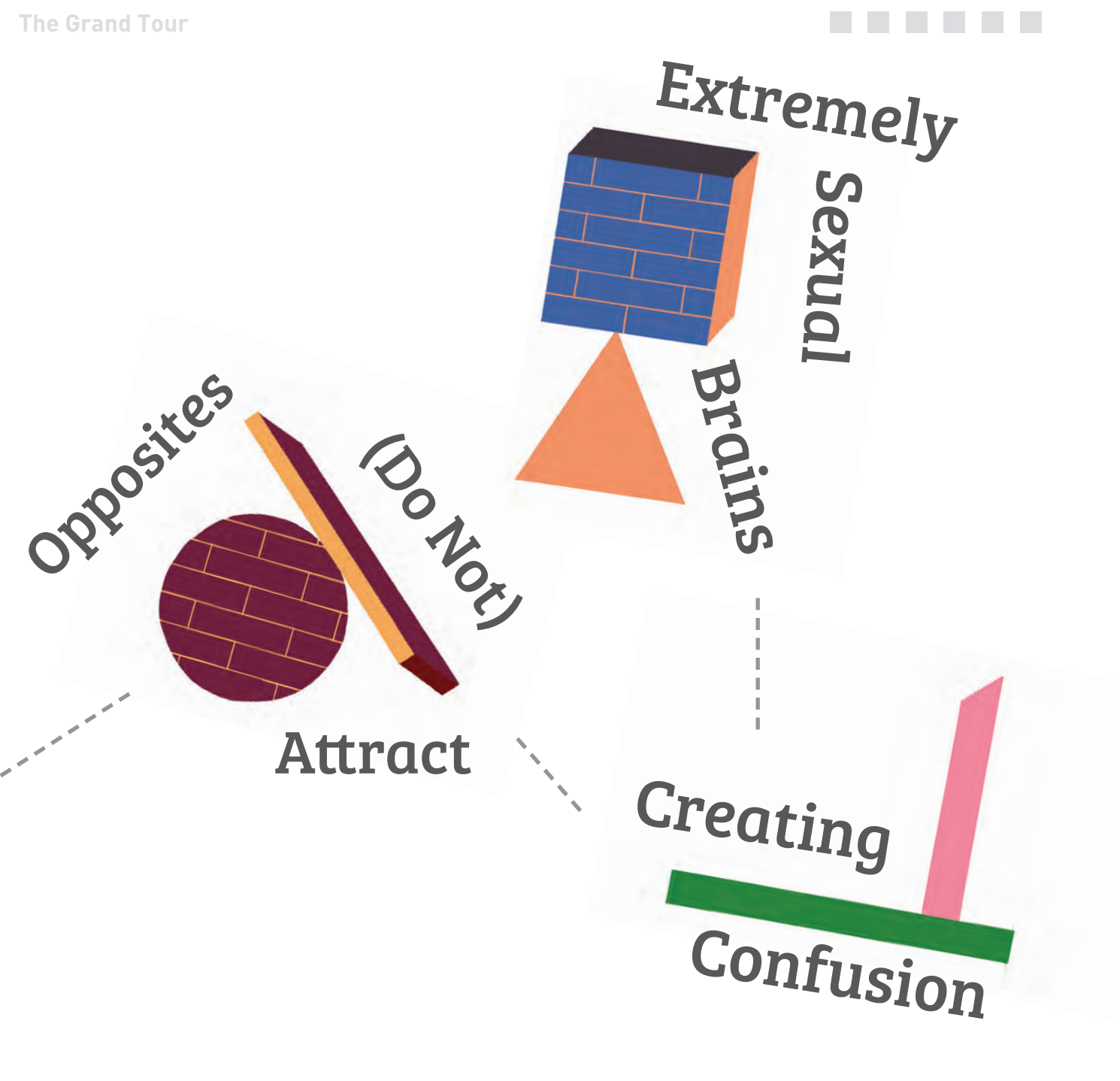


The Grand Tour

In the beginning of modern times, young upper class European men were supposed to go through a rite of passage, the so-called “Grand Tour”. This was an educational journey through Europe on a more or less fixed route. Aims were to encounter arts, culture and the roots of the “modern world”. Since then, quite some time has passed and fortunately in many regards, times have changed: women have gained ground in their fight for equality, people have become more aware of human fundamental rights and technology has made a leap forward.

Nevertheless, the founding thoughts of the Grand Tour: openness, intellectual freedom and the willingness to leave your comfort-zone and to encounter different ideas and people, are not old and have not vanished. In fact, they are as important as they could be in today’s world.

Nowadays, a global Grand Tour has become possible for the average student due to the availability and affordability of modern public transport and aviation. But we are not acting in the tradition of the Grand Tour by just flying to Rome for a weekend. The Grand Tour is more about true freedom of thinking. This can only happen in our own minds with our own effort. *Honours Review* hopes



to strengthen this spirit. In our newest issue, we embark on an intellectual Grand Tour in which you as a reader will first travel through the complexities of atheism being responsible (or not) for the many inhumanities we experience nowadays (Atheist Atrocities), and then take a turn to learn why it is important to understand the mechanism of social polarization in today’s world (When Societies Divide). Later, you may want to take a back seat and read our interview with Nobel Laureate Prof. Jean-Marie Lehn (Ask: Why Not), who talked with us about what chemistry has taught him, why music is important and what has shaped his career as a scientist. After the break, delve into the psychology and biology of intimate

attraction (Opposites (Do Not) Attract), and a critical view on colonial English literature (Creating Confusion). You’ll cross the finish line reading about sex influences on mental conditions (Extremely Sexual Brains).

Throughout this vibrant journey, we bring arts, culture and history closer to home and hope to inspire you to find it yourself. We truly hope that you will enjoy this intellectual tour. Let the Grand Tour begin!

ML

Atheist Atrocities

Turning Nothing Into Something



Written by: Benjamin Markovitch (Psychology)
Illustration: Senne Trip

As we reflect on the sobering lessons of the atheist extremism of the twentieth century, let us never forget how the exclusion of God, religion and virtue from public life leads ultimately to a truncated vision of man and of society” (1). Pope Emeritus Benedict XVI in his address at the Palace of Holyroodhouse – Edinburgh. 16 September 2010.

Stalin’s Soviet union, Pol Pot’s Khmer Rouge, and Hitler’s Nazi Germany were some of humanity’s most brutal regimes, responsible for the deaths of millions of innocent civilians (2). In addition to being a somber reminder of the human capacity for cruelty, the violence of these regimes is sometimes used to exemplify the dangers allegedly inherent to atheism (3). It is argued that the devaluation of human life, as illustrated by the proverb “To keep you is no benefit, to destroy you is no loss” told during Pol Pot’s reign of terror (4), is possible only in a godless society, and is an inevitable consequence of atheism (3). A common counterargument voiced by outspoken atheists such as Richard Dawkins and Michael Sherlock is that “Hitler was a Roman Catholic” (5,6). It appears that instead of having a constructive debate on the meanings and implications of religion and irreligion, contemporary public figures blame contemporary ideas for atrocities committed by the followers of past ones.

Throughout history, humanity has endured innumerable instances of man-made savageries; committed by theists and atheists, and done in the name of god, state, and even science (7). If we are to examine destructive societies, we are bound to find characteristics that are common to some of them; nevertheless, these might have nothing to do with violence. Furthermore, even if some characteristics were repeatedly shown to encourage cruelty, it is still possible that they are not inherently harmful. This notion forms the basis for another perspective on the atheist atrocities debate; a perspective which asserts that atheism has no intrinsic violence-promoting characteristics that are independent of the social context.



Atheism is not a belief; rather, it is the absence of it.

Atheism is defined in the Oxford Dictionary as “disbelief or lack of belief in the existence of God or gods” [8], and originates from the Greek word *atheos*, which means “without a god” [8]. A misleading element in the word atheism is its suffix – *ism*, as *ism* is often used in nouns that refer to beliefs [9], while a notion of atheism as a belief can easily be dismissed. I will follow the lead of others [10], and straightforwardly state that counting atheism as a belief is equal to perceiving baldness as a hair color, and classifying ‘not watching Game of Thrones’ as one’s favorite character in *Game of Thrones*. Atheism is not a belief; rather, it is the absence of it.

When one claims that atheism was the driving force of numerous violent regimes, it is implied that religious disbelief had a systematic influence on different societies [1; 3]. When examining such an idea, it is first necessary to consider whether the absence of religious belief has any *inevitable, inherent, and universal* consequences. An argument against this essentialist notion is that if we see the dismissal of a single belief as sufficient to justify a distinct category, then we end up with a vast number of categories whose members share nothing in common beyond membership in that specific category.



1 Birks, J. 2014. *News and Civil Society: The Contested Space of Civil Society in UK Media*. Ashgate Publishing.

2 Rummel, R. J. 1997. *Death by government*. Transaction Publishers.

3 “Atheism and Mass Murder”. *Conservapedia*, accessed September 24, 2015, http://www.conservapedia.com/Atheism_and_Mass_Murder.

7 “Nazi Medical Experiments”. United States Holocaust Memorial Museum, accessed September 24, 2015, <http://www.ushmm.org/wlc/en/article.php?ModuleId=10005168>.

8 “Atheism”. In *Oxford Dictionaries*, accessed September 24, 2015, <http://www.oxforddictionaries.com/>.

9 “Ism”. In *Cambridge dictionaries online*, accessed September 24, 2015, <http://dictionary.cambridge.org/>.

10 “What is atheism”. *American Atheists*, accessed September 24, 2015, <http://atheists.org/activism/resources/what-is-atheism?>.

11 Gervais, W. M. 2013. In *Godlessness We Distrust: Using Social Psychology to Solve the Puzzle of Anti-atheist Prejudice*. *Social and Personality Psychology Compass*, 7(6), 366-377.

12 Berman, D. 2013. *A history of atheism in Britain: From Hobbes to Russell*. Routledge.

Does disbelieving in an equal number of religions inherently causes Adam and Chris to be more similar in a meaningful way? Does the rejection of X+2, rather than X+1 beliefs have important *universal* implications? I doubt that anyone would provide a positive answer to these questions; therefore, the absence of a religious belief is, *intrinsically*, no more than that. Since atheism is not a belief, it follows that atheism, *intrinsically*, means no more than the number of religious beliefs one does not hold – all of them. Accordingly, atheism cannot be a universal driving force of anything (including violence).

Atheism has no essence beyond the absence of religious belief [11, 12]; alone, outside of a context, atheism means nothing. Nevertheless, a word is always used within a context [13], and even a nothing with specific social antecedents and consequences can become a meaningful something [14]. For example, working citizens who illegally avoid tax payment can be classified as tax evaders, and individuals who do not comply with a state’s military conscription policies may be defined as draft evaders. Such categories make sense only if tax payment and/or military service are mandatory. Furthermore, membership in the aforementioned groups often results in specific treatment from one’s social environment. This combination of classification and differential treatment suffices to produce a meaningful kind of thing: a socially constructed thing [14].

Socially constructed entities result from a variety of social factors that operate in a specific time and place [14, 15, 16]. The meaning and consequences of such things are not inevitable; rather, they are contingent upon the context in which the entity is constructed [14]. In the aforementioned case of draft evaders, it is clear that there is no such thing as draft evasion when military service is not compulsory; therefore, the existence of the category completely depends on a social element. Furthermore, it is reasonable to assert that the meaning and implications of draft evasion are shaped by a variety of social factors. For example, the characteristics and experience of Americans who evaded the draft during the Second World War probably differed from the characteristics and experience of Americans who evaded the draft during the final years of the Vietnam War. American public opinion was firmly in favor of the American involvement in the Second World War following the Japanese attack on Pearl Harbor [17], while the American public showed unparalleled anti-war sentiment during the last years of the war in Vietnam [18].

4 Pran, D. 1999. *Children of Cambodia’s killing fields: Memoirs by survivors*. Yale University Press.

5 “(Ateos) Richard Dawkins”. Youtube, accessed September 24, 2015, https://www.youtube.com/watch?v=KgGrB_VyySQ.

6 “The Atheist Atrocities Fallacy – Hitler, Stalin & Pol Pot”. *MichaelSherlockAuthor*, accessed September 24, 2015, <https://michaelsherlockauthor.wordpress.com/2014/10/21/the-atheist-atrocities-fallacy-hitler-stalin-pol-pot-in-memory-of-christopher-hitchens/>.

“Atheism has no intrinsic violence-promoting characteristics that are independent of the social context.”

Therefore, the quantity of dismissed religious beliefs has no meaningful *inevitable* consequences. To clarify this point, let us think of two hypothetical individuals: ‘Chris’ – a Christian, and ‘Adam’ – an atheist. Chris believes in Christianity, and rejects the X religions of which he is aware. Adam is familiar with the same number of religions as Chris, and he therefore dismisses X+1 religious beliefs. Chris was recently made aware of Scientology, and he now rejects X+1 religions – the same number of religions as those dismissed by Adam. Furthermore, a new religion, Pastafarianism, is invented by Adam in order to spite Chris; as a result, both of them reject X+2 religious beliefs.

The opinion of the American public produced specific antecedents – reasons for evading the draft, and social consequences for doing so; it thus had a role in constructing the meaning of draft evasion. Because public opinion differed, draft evasion during the Second World War was not the same as draft evasion during the Vietnam War. Being a draft evader requires specific social circumstances, and the meaning of draft evasion depends on a variety of unstable social factors; draft evasion is therefore a social construction [for more examples of social constructions, see (14)].

17 Berinsky, A. J., Powell, E. N., Schickler, E., & Yohai, I. B. 2011. Revisiting Public Opinion in the 1930s and 1940s. *PS: Political Science & Politics*, 44(03), 515-520

18 Lunch, W. L., & Sperlich, P. W. 1979. American public opinion and the war in Vietnam. *The Western Political Quarterly*, 21-44.

19 Silver, C. F., Coleman III, T. J., Hood Jr, R. W., & Holcombe, J. M. 2014. The six types of nonbelief: a qualitative and quantitative study of type and narrative. *Mental Health, Religion & Culture*, 17(10), 990-1001.

20 Beaman, L. G., & Tomlins, S. 2015. *Atheist Identities – Spaces and Social Contexts*. Springer.

21 Jacques, E. E. 1995. *The Albanians: an ethnic history from prehistoric times to the present*. McFarland.

From a constructionist perspective, the creation of atheism requires awareness of a socially influential religious belief (19, 20). Furthermore, disbelievers come to see themselves as atheists due to being classified as such (19, 20). The construction of atheism seems to depend on a critical social factor – influential religious beliefs. In some anti-theistic regimes such as Enver Hoxha’s Albania, religious individuals were persecuted, and religion was kept out of the public eye (21). This raises a provocative question: what kind of atheists are those who were never exposed to religious beliefs? When answering this question, it is reasonable for us – who are aware of religious beliefs – to see this kind of atheism as nothing more than the absence of belief. Disbelief has no central tenants, creeds, or codes of conduct (11; 19), and if not for belief, disbelievers are neither classified nor treated as atheists. Without exposure to religious belief, atheism is not a way of experiencing oneself; in a completely atheistic social environment, atheism means nothing. Even after being contrasted with religious belief (and thus becoming a viable category), the meaning of atheism is constructed by a variety of

social factors that shape its antecedents and consequences. In order to illustrate this point, let us compare a theocratic republic such as Iran with a secular democracy such as Sweden. In Iran, religious conviction is cultivated from an early age via educational institutions (22), while Swedish school children rarely encounter attempts to promote religious beliefs (23). The antecedents for being an atheist thus differ between the two states: in Iran, atheism implies an active and deviant rejection of dominant beliefs that

“In a completely atheistic social environment, atheism means nothing”

were ingrained over years of socialization (22); while in Sweden, atheism implies a passive indifference toward strange and unfamiliar beliefs (23). It is quite reasonable to assert that due to their distinctive social antecedents, Swedish disbelievers are remarkably different from their Iranian counterparts.

13 Wittgenstein, L. J. J. 1953/2001. *Philosophical Investigations*. Blackwell Publishing.

14 Hacking, I. *The Social Construction of What?*. Cambridge, MA: Harvard University Press 1999.

15 Engler, S. 2004. Constructionism versus what?. *Religion*, 34(4), 291-313.

16 Kendler, K. S., Zachar, P., & Craver, C. 2011. What kinds of things are psychiatric disorders?. *Psychological medicine*, 41(06), 1143-1150.

22 Paivandi, S. 2013. *Iran: The Islamization of the School*. Education in West Central Asia, 30, 79-99.

23 Zuckerman, P. 2008. *Society without God: What the least religious nations can tell us about contentment*. NYU Press.

24 “Freedom of Thought report 2013”. The Freedom of Thought Report, accessed September 24, 2015, <http://freethoughtreport.com/wp-content/uploads/2013/07/FOTReport2013.pdf>.

Furthermore, the consequences of being an atheist also differ between the two states. In Iran, atheism is an unaccepted stance that is punishable by death (24), whereas in Sweden atheism is legal, accepted, and quite common (23). By classifying disbelievers as socially deviant and persecuting them, Iran is constructing its own kind of atheism, which is not the same as its Swedish counterpart.

When Pope Emeritus Benedict XVI spoke in Edinburgh and asserted that the atrocities committed by Marxist states should serve as a lesson on the dangers atheism bears to society, he compared contemporary British atheism to atheism in a different time and place. The idea that atheism has any meaning or role in an atheistic society is objectionable, as it is quite plausible that members of such a society are neither classified nor treated as atheists.

While it is reasonable to assert that atheism is a necessary ingredient for violent anti-theistic regimes, it is also worth mentioning that anti-theism is advocated by Marx’s *Communist Manifesto* (25) and not by a non-existent ‘Atheistic Manifesto’. Another problematic implication of the Pope Emeritus’ speech is the idea that atheism in Britain might have the same consequences it (supposedly) had in, for example, Stalin’s Soviet Union. In order for this notion to hold, British atheism has to be comparable to Soviet atheism, and contemporary British society has to be similar to the that of the past Soviet regime. However, it seems that modern British society is remarkably different from Stalin’s. Furthermore, it is quite plausible that the manner in which atheism is currently being constructed in the UK is completely different from how it was constructed in Stalin’s Soviet Union. A reflection on the ‘atheist extremism of the twentieth century’ reveals only one valuable lesson: atheism in Britain is not what it was in a different place and time.

Instead of focusing on atheism, one can argue, the remarks of Pope Emeritus Benedict XVI may have been made in reference to the moderating role of faith. The notion that religious beliefs prevent violence is beyond the scope of this paper. Nevertheless, I suspect that a proper inquiry will leave the belief in God (or gods) without any intrinsic characteristics capable of discouraging (or promoting) violence [see 26].

The social world is in flux; new categories and ways of experiencing oneself are being created, while old meanings either change or fade away. In this social reality, many entities possess qualities that are neither intrinsic nor inevitable; what was once used to promote violence can be reconstructed to discourage it; what is odd and depraved at one place may be common and rational at another. Our reality is, to a large extent, created by us and by those who surround us. We hold the power to turn an empty nothing into a meaningful something; we can construct a scientific New Atheism; we may create a violent anti-theism; or we might dismiss atheism as a useless concept. It is us who create our social world (14; 27), and we should not disregard the power of our words and actions, for they are capable of producing a special kind of thing: a socially constructed thing.

25 Marx, K., & Engels, F. 1967. *The communist manifesto* (1848). Trans. AJP Taylor. London: Penguin.

26 Fitzgerald, T. 1997. A critique of “religion” as a cross-cultural category. *Method & Theory in the Study of Religion*, 9(2), 91-110.

27 Berger, P. L., & Luckmann, T. 1991. *The social construction of reality: A treatise in the sociology of knowledge* (10). Penguin UK.



When Societies Divide

Can Social Polarization
Explain Terrorist Attacks?

Written by: Karlijn Smoor (Communication and Information Studies),
Frank Nijenhuis (Medicine) & Dennis Sikkens (Medicine)
Illustration: Jaime Jacob

On November 13th, 2015, the centre of Paris was the target of multiple terrorist attacks. These horrible events caused the death of many civilians and left Europe in a state of anger and fear. Unfortunately, such attacks were not the first to happen: On January 7th, 2015, a terrorist attack took place on the publisher's office of Charlie Hebdo, also in Paris. The events that unfolded in the subsequent days resulted in the death of 17 innocent people (1), leaving a huge impact on the French society as well as on the rest of the world. In the following paragraphs, we will put the recent attacks into a socio-cultural context and especially focus on the role of social polarization. Later, we look back on the attacks on Charlie Hebdo, discussing it in more detail. How does social polarization function in such a context and how is it influenced by terroristic attacks? What could have been the motivation behind the attacks and what consequences does it have for the French society? Finally, how can research help us to prevent such terroristic incidents? We are more than ever in need for insights into terrorism and its underlying societal mechanisms.

Social polarization

Social polarization is caused by a division in society. Citizens split up in different groups who take an extremely different position in certain political issues. Thus, polarization is a combination of identification with the own group and rejection of the opposing group's position (2, 3). A high degree of polarization in society increases the risk of riots and social unrest (2; 4). Polarization increases when the amount of people that take extreme positions increases. Mathematically, the degree of polarization depends on the relative size of coalitions and the distance between them. Social polarization can be modelled mathematically: the 'Relative Agreement' (RA) model of Guillaume Deffuant and others shows how an evolution to extremism can occur (5). This model is an extension of the 'Bounded Confidence' model (5-8).

Such models illustrate how the introduction of a small proportion of confident agents with extreme opinions can influence a majority of (often) uncertain agents with moderate initial opinions.

Central convergence to moderate opinions takes place when there is a small general uncertainty. The influence of the extremists is limited to the agents which were initially close to them in opinion. However, when there is a high general uncertainty, the extremes tend to dominate. This can lead to bipolarisation or to convergence to a single extreme. So, especially when there is a high general uncertainty, extremists are able to act like an (opinion) leader and (uncertain) moderate people will imitate them. Thus the extent to which social polarization can develop, depends on the levels of uncertainty in a society, the level of extreme opinions and how effectively they are propagated.



Propagation of extreme opinions

Polarization can be caused deliberately to induce fear, which may result in a greater support within someone’s own group. If people get the feeling that they are being threatened, they have the tendency to unite themselves under the guidance of a leader. Several examples in history show that large parts of a population can switch to one extreme opinion, following an initial small minority. The influence of radical Islamists is an important recent example. They manage to convince large communities in Middle-Eastern countries. This is an exceptional process, where opinions which initially were considered as extreme, become the norm for a large part of the population.

“Social polarization can be modelled mathematically.”

But how can such extreme opinions be spread? It is generally acknowledged that mass media increase the influence of opinionated leaders. Especially violent acts of extremism need media to reach the ‘target audience’. Without the media’s coverage, the impact is negligible and would remain confined only to the immediate victims of the attack. Extremists want to publicize their political causes to inform both friends and enemies about the motives for their terrorist deeds to increase uncertainty among moderate thinkers and to create a shift towards the extreme (9).



1
Levs, J., Payne, E. and Pearson, M. 2015. "A Timeline of the Charlie Hebdo Terror Attack." CNN, last modified January 10, 2015, accessed January 15, 2015, <http://edition.cnn.com/2015/01/08/europe/charlie-hebdo-attack-timeline/>

2
Esteban, J. , Ray, D. 1994. "On the Measurements of Polarization." *Econometrica* 62 (4): 819-851.

3
Zhelyazkova, A. and R. Torenvlied. 2009. "The Time-Dependent Effect of Conflict on Delays in the Transposition of EU Directives." *European Union Politics* 10 (1): 35-62.

4
Marx, K., Engels, F. and Smelser, N. 1973. "Karl Marx on Society and Social Change".

5
Hegselmann, R. and U. Krause. 2002. "Opinion Dynamics and Bounded Confidence Models, Analysis, and Simulation." *Journal of Artificial Societies and Social Simulation* 5 (3).

Since the new millennium there has been a rapid technological progression concerning social media. This changes the way young people get radicalized. Terrorist groups are often well aware of the influence of social media on Western societies and realize their dependence on it. This enables radical individuals to actively use social media as a way to express their own beliefs, radicalising other people along the way (10). Pictures and videos illustrating the “wrongdoings of western civilization” are shared with the intention of creating an ill-conditioned image of our society. Videos of terrorists, punishing or beheading people from first

world countries, are meant to create a “just cause” for radical Muslims to rally behind. The greatest impact of radical ideologies *via* social media seems to be on the uncertain, often mistreated, young Muslims in western society. The increasing role of social media could also mean an increase in lone-wolf attacks in western society, committed by radicalised Muslims, not directly connected to terrorist organisations. The fact that extremists are able to spread their ideologies throughout the world relatively safely and anonymously makes social media such an excellent platform for radicalisation.

The road to radicalism

The assailants who performed the raid on January 7th were two brothers, Said and Chérif Kouachi. Both brothers were moderate, even though they behaved criminally. How did they become the radical Muslims they were when they attacked *Charlie Hebdo*? Their radicalisation was probably influenced by three different aspects. These three aspects are individual, interpersonal and circumstantial processes (11). Young people searching for their identity and their place in the world must not only have individual traits that leave them susceptible to radicalisation, but they must also be influenced by interpersonal interaction with people who stimulate them to become radical, and they must be influenced by certain circumstances in general.



The path to radicalisation usually begins during the process of identity formation in young people. In the case of the Kouachi brothers, their troubled youth could have been a predisposing factor for these ideas to form. As immigrant orphans, underlying feelings of not belonging to the French society could have created and exacerbated the identity crisis. Such a crisis will lead the concerned individual to look for what it means to be a Muslim in a country with a predominantly agnostic government. The problem here seems to be the lack of appeal that traditional religious institutions seem to have on young adults in an identity crisis when compared to extremist

“Since the new millennium there has been a rapid technological progression concerning social media. This changes how young people get radicalized.”

groups. Another key factor in Muslim radicalisation is a lack of education concerning the religious texts, which leads to young Muslims being unable to judge whether radical groups represent the teachings of the Islam correctly. In short, Muslims who are still figuring out their religious identity in the modern world are susceptible to extremist ideas. The Kouachi brothers were radicalised because they were unable to find their place in society and this left them susceptible to radical ideas.

The attack, however, did not have the intended results. It incited a worldwide public response, sometimes even violent in nature. Most Muslim groups publicly denounced the attacks. To prevent these events from repeating themselves, and therefore to prevent radicalization, governments are trying to change the way we treat Muslim extremists by offering deradicalisation programs, but this is not sufficient. To completely integrate Muslims into our society and to prevent radicalization, we must ensure that public agencies are able to fulfill the needs of Muslims. The government also needs to prevent shunning of Muslims due to extremistic acts. Aggression against Muslims will only lead more individuals to develop extremist ideologies. Finally, to improve Muslim integration, we must improve the way traditional Muslim institutions approach young people, so they become more appealing than radical groups.

6
Krause, U. 2000. "A Discrete Nonlinear and Non-Autonomous Model of Consensus Formation." In *Communications in Difference Equations: Proceedings of the Fourth International Conference on Difference Equations* , 273.

7
Deffuant, G., D. Neau, F. Amblard, and G. Weisbuch. 2000. "Mixing Beliefs among Interacting Agents." *Advances in Complex Systems* 3 (01n04): 87-98.

8
Richell, R.A., D.G.V. Mitchell, C. Newman, A. Leonard, S. Baron-Cohen, and R.J.R. Blair. 2003. "Theory of Mind and Psychopathy: Can Psychopathic Individuals Read the 'language of the Eyes'?" *Neuropsychologia* 41: 523-526.

9
Nacos, B. L. 2006. "Terrorism/Counterterrorism and Media in the Age of Global Communication." *United Nations University Global Seminar Second Shimame-Yamaguchi Session*.

Research ideas

As discussed above, certain social phenomena play an important role in the origination of terrorism and its effects on society. Herein, scientific research is essential. It can help gaining an understanding of the underlying complex mechanisms. Terrorism is, however, not only a sociological phenomenon. It also has economical, psychological and medical dimensions. As a logical consequence, research on the topic of terrorism is very broad and involves many different faculties.



“Terrorism is, however, not only a sociological phenomenon. It also has economical, psychological and medical dimensions.”



Although we are familiar with the phenomenon of terrorism, research still faces difficulties in defining what terrorism actually is [12]. Thus a clear definition still does not exist. This is not helped with the fact that terrorism is an ever evolving phenomenon. After the attack on the twin towers, in New York city known as 9/11, the number of researchers in the field of terrorism grew considerably. Overnight the research field moved from the relative periphery into the absolute vortex of academic interest and political concern worldwide [13]. This sudden explosion of interest resulted in many new articles, not always based on scientific evidence. This also lead to a sudden change of the scientific landscape: journalists started writing “academic” papers on terrorism without formal training and established researchers left to work for governmental institutions. Fortunately, this tumult seems to be diminishing, allowing to focus again on questions that really matter [13]. Due to the broad variety of backgrounds a lot of information on terrorism in diverse fields is available. However, there are very few integrative reviews on the topic. An integrative view is needed to combine important insights from different fields to gain a more thorough understanding of terrorism.

10 Thompson, R. L. 2011. “Radicalization and the use of Social Media.” Journal of Strategic Security 4 (4): 167-190.

11 Choudhury, T. 2007. “The Role of Muslim Identity Politics in Radicalisation.”.

12 Matusitz, J. 2013. “What is Terrorism?” Chap. 1, In Terrorism and Communication A Critical Introduction.

13 Silke, A. 2005. “Research on Terrorism Trends, Achievements & Failures”. Cass Series on Political Violence.

In order to maximize efficiency of research on the topic of terrorism, we propose an integrative review covering all knowledge on the subject. Scientists with different backgrounds from psychology to sociology and economy to law, should cooperate in order to gain an accurate framework of knowledge. This framework would in turn be able to accurately illustrate the acquired knowledge on terrorism as seen from different perspectives. A next step for research would be to integrate theories from various disciplines to further increase our understanding of the phenomenon and to underline the effects certain aspects have on each other. This would mean that instead of looking at the aftermath of a terrorist attack from only an economical view, social theorems, psychological effects and medical consequences should also be taken into consideration. We do realise that this would mean a shift in current research methods, which could turn out to

be a time consuming process. A first small step to achieve this goal would be to form an international group of multi-disciplinary scientists aiming at integrating the existing knowledge on the field of terrorism.

A better understanding of terrorism on a multi-disciplinary level, could prove beneficial for preventing terrorist attacks in the future. While we do realise that preventing terrorist attacks all together is nearly impossible, research could also gain insight as how to handle with the aftermath of a terrorist attack. This information seems most relevant for various governmental institutions, as the government is responsible, both directly and indirectly, for dealing with aforementioned crises. In conclusion, we suggest that the government plays a direct role in shifting the research method in the field of terrorism.

Ask: Why Not?

An Interview with Jean-Marie Lehn

Switching from a deep understanding of chemistry to a broader perspective comes natural to Jean-Marie Lehn. Honours Review sat down with the Nobel laureate for a conversation filled with supramolecular chemistry, evolution, physics, and jokes.

“You should realize that when you look at the periodic table, you see the building blocks of all the visible matter in the whole of the universe. Think about it. By looking at this table we know what an entity, which may be billion of lightyears away, is made of. The same carbon, the same nitrogen, hydrogen, oxygen and so on. The entities may have different shapes and some other differences, but the table is complete. At least, in the case of visible matter.”

What do you like about chemistry and how do you keep finding new areas to explore?

I think that working at interfaces between areas is very important. Chemists like to say that chemistry is a central science, which is correct. It also touches on biology and material sciences. It's there, at this interface, that new things can happen. In fact, there was a French sociologist, not well known, who wrote an interesting book on scientific creativity. He recommended that a way to systematically explore where new things could lie, is to have an approach like a table, where the column, the vertical, would be different types of molecules, and the horizontal would be different properties, like electronic and optical properties and colors, and so on. You can then see whether a certain type of molecule has, for instance, given rise to magnetic studies. If not, you ask: why not? The outcome may be because there is nothing magnetic at all, but on the other hand, there may be loopholes which you can fill in.

What if you find such a loophole, but going into it you realize you're not getting any (interesting) results?

You don't speak about the failures, simply because books and journals would be filled with failed experiments. It would be totally impossible to read everything. It is impossible to read everything now! On the other hand, it would be good to know about failures, because you would spend less time doing things which have already been tried. But this is a double-edged sword: you would probably also miss things which have been tried in an incorrect fashion and have not given results just because somebody made a mistake. It happened to me when I had a lot of co-workers. When some of the less good ones were given a problem, nothing seemed to work. Then somebody else comes and makes it work.

Interview by:
Gwendolyn Hooijkaas (American Studies),
Michael Lerch (Editor), Martijn Zwinderman (Editor)

“I usually recommend trying new ways of looking at things. You have been trained to mix stable molecules, what about unstable ones? Test the reverse, the opposite, switch!”

What role does philosophy play in your life?

In the last year of high school in France, at least in my time, you could choose between philosophy, experimental science, and math. And I chose philosophy, because I was interested in that as a way to address the problems which all of us have at a certain age, when you want to figure out what you are going to do later on. One of the books I studied at the time, which was very important in shaping the way I look at things, was Sigmund Freud's "Introduction to Psychoanalysis". I read that when I was 17. Another author I read was Nietzsche. And Kant. And some Sartre. And it shocked me. Not the conclusions, they don't matter. The way they think and approach things is very important. The impact of reading such books depends on the age when you read them, but reading them at 17 gets you to think differently.

Studying philosophy in my time, you had to do one exam in science. I think this was very reasonable, to force philosophers – future philosophers – to have some kind of experience in the sciences. So I started with that, and became very interested in chemistry. You know, philosophy has fantastic and big ideas, but you cannot really test them. And that's big in chemistry, you can test what you think. Your hypotheses can be tested.

You once remarked that physics provides the laws of the universe and that chemistry can play with these laws. Do you think there is a lot of freedom and room to play?

What is freedom? That is a question which philosophers often ask scientists. For me, freedom resides in diversity, in the fact that the same laws can give different expressions. In other words: the laws of physics direct the world, you cannot get out of that, but outcomes may be different because of different combinations. Consider painters; the colors they use are essentially the same, but there is only one Van Gogh. So, freedom is not the fact that you are able to do anything that is possible, but the fact that the outcome of a given action is something which depends on the number of expressions, the number of paintings you can do. You can always make another painting and the outcome will depend, for instance, on whether or not that day there was a nice sky. Most things are determined by their circumstances and this complexity gives you the possibility to have many ways of expression. Freedom to me is the fact that many things are possible.



We also heard that you are good at playing the piano. What made you choose the piano over other instruments?

Oh, that's just because my father played the piano. He was also an organist. Learning to play the organ when you're not in a music school is not so easy, simply because you don't have that many opportunities to play it. I play the piano now, and there are a lot of differences. In the literature, for example, composers for the piano are much more interesting. Of course, with the organ, you have Bach and some others, but it's quite intimidating in terms of style, whereas piano music is much wider and intense. What is interesting about the organ is the instrument itself, because they are all different. They all have different sounds, a different bag of pipes and different types of arrangements.

Then how important is music to you?

I would say it is the main thing I do outside of chemistry. **So, Mozart in the lab?** That depends, background music can be disturbing and it is not kind to the composer. You're not really paying attention to the music. The kind of music I like is music which is constructed, where you have a horizontal and vertical construction. Of course, music can be approached first of all by simply being sensitive to the sounds, by liking the sounds, liking the melodies, and so on. But much of the music is knowing how it is constructed, which gives you a deeper understanding. It doesn't necessarily change the enjoyment but you get a deeper understanding of what the composer wanted to do.

Finally, to what extent do you think you have struck a right balance between work and other aspects of your life, like family? What is a right balance?

You know, life is a limited thing. It's a nonreversible process, so you don't get to do the experiment twice. That's quite clear. On the other hand, if you want to achieve something, you have to be very dedicated. Now, of course, when you do a lot of science and just do that, people call you obsessed, or whatever, I mean, a nerd, as the Americans like to say. A pianist is it too. A good pianist or a good violinist has to train all the time and put as much effort into what they are doing as I do. You certainly have to leave out some things that'd be nice to do, just because there is not enough time.

So, the picture is complex, because you have to choose something, and for this something you need to find reasons for doing it. Therefore, in my lectures, I always like to start with a general view, because I know I'm talking to students, and students ask themselves questions, such as "Why am I doing what I am doing?" and, "Why do I spend my life on this dumb thing?" You can even ask: why bother with science? Sure, but it is the only way in which we can try to understand what we are doing here. Now the question is, why would we like to understand that? We might as well take advantage of what we have. That's correct, but I would dispute this. I would urge everyone to think about the things you want to know and then figure out why you want to know them. As scientist, you bring a stone to science, it can be a big stone or a small stone, but it is your stone.



“When you
do a lot of
science and
just do that,
people call you
obsessed or a
nerd.”

The Search for a Perfect Match

Opposites ((Do Not)) Attract



Intimate attraction virtually is the basis of all human procreation. Despite its significance, there is still a great deal of confusion about the underlying mechanisms of choosing one's partner. This is especially true when it comes to understanding on what basis attraction occurs (1). Here, different views clash: psychological research has shown that the more similar people are in a variety of aspects, the more likely they are to become attracted to one another (2). On the contrary, biological research has shown that similarity does not necessarily lead to attraction. This article will explore these seemingly conflicting views, and seeks to clarify the mysteries of human attraction.

Genetic diversity leads to healthier offspring; thus better overall survival.

The cognitive perspective

Contrary to popular belief (1), many researchers have found a strong positive correlation between people’s attraction towards others and the extent to which they are similar to each other (3). This so-called “similarity effect” is supported by a number of studies and a recent meta-analysis (2). Some of the attitudes researchers have tested for example, include opinions regarding fraternities, views on a country’s integration policy, and even preferences of gardening.

It is interesting to take a glimpse at some of the techniques used to measure the aforementioned “similarity effect” in experimental settings. One study, for instance, simulated an especially realistic setting where 44 participant pairs were evaluated on their attitudinal similarities and brought together on a “date” (4). Participants were preselected to have multiple common traits, in order to support the hypothesis that levels of attraction will increase in proportion to similarity. The participants however, no longer blind to the hypothesis after the first few experimental sessions, began behaving in unexpected ways. They had realized the benefits of the study – it not only brought them on a date, but it did so by matching them to a partner who was similar to them in numerous ways. As a result, participants began showing up for the study dressed in their best clothing and wearing excessive amounts of makeup and perfume (4). In this way, it could be observed that the participants’ behaviors strongly attest to the reliability of the similarity effect.

Other studies have resorted to using methods such as archival studies for measuring **implicit egotism** in mate selection, or investigating the convergence of attitudes in couples over the course of their marriage (5). Regardless of the way psychologists choose to approach attraction, the conclusion remains unanimous. That is, cognitive similarities are more likely to produce attraction on a cognitive level (6) – or when seen from a different angle – that dissimilarities are likely to repulse (2-7).

Implicit egotism

Likelihood of marrying someone whose name begins with the same letter as your own; also known as the “name-letter effect”.

1

Lilienfeld, S., S. Lynn, J. Ruscio, and B. Beyerstein. 2010. 50 great myths of Popular Psychology: Shattering widespread misconceptions about human behavior. West Sussex, United Kingdom: Wiley & Sons.

2

Montoya, R. and R. Horton. 2013. A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships* 30 (1): 64-94.

3

Byrne, D., and D. Nelson. 1965. Attraction as a linear function of proportion of positive reinforcements. *Journal of Personality and Social Psychology* 1 (6): 659-63. Brown, J. 1997. A theory of mate choice based on heterozygosity. *Behavioral Ecology* 8 (1): 60-5.

The biological perspective

While most psychologists seem to agree that similarities bring people together, evolutionary biologists and geneticists may think differently (3-8). The argument in favor of “Opposites *Do* Attract” could be defended through a genetic perspective based on evolutionary ideas: Genetic diversity leads to healthier offspring, thus better overall survival. As a beneficial evolutionary principle, the lower the genetic similarity between two individuals, the higher the levels of attraction between them. The question is of course, how are we able to detect genetic similarities and differences in potential mates?

The two central theories in support of genetic dissimilarity for mate selection are promotion of heterozygosity and avoidance of homozygosity. The former represents the idea that people actively search for genetically dissimilar mates, whereas the latter suggests that organisms actively try to avoid inbreeding. One of the strongest arguments in support of the heterozygosity theory is that beneficial genes negate the effect of certain maladaptive ones, since different versions of a gene (known as alleles) are likely to neutralize potentially harmful genetic combinations. Furthermore, genetic diversity serves the evolutionary purpose of providing successive generations with a spectrum of genes, some of which might prove beneficial in their development (9). Promotion of heterozygosity has been found to show positive correlations between mating choice and genetically different partners (10).

Different versions of a gene [...] are likely to neutralize potentially harmful genetic combinations.

Major Histocompatibility Complex

Also known as the Human Leukocyte Antigen (HLA). This complex plays a crucial role in controlling the activation of the immune system, including all types of B- and T-lymphocytes, as well as macrophages (11).

Researchers have identified a variety of mechanisms which allow humans to identify a potential heterozygous mate. On a genetic level, a structure involved in the immune system – the **Major Histocompatibility Complex** (MHC) – plays an important role in allowing vertebrates to identify such mates(4; 11: 12). Due to its diverse alleles, the MHC is able to provide a broad range of immune responses to a variety of diseases. Hence, finding mates who are different from oneself in their MHC alleles will provide the potential offspring with higher overall immunity and chances of survival (3; 11; 13).

The avoidance of homozygosity also provides some compelling arguments, stating that individuals put active effort in selecting mates who will *not* produce inbred offspring (3). Consequently, the new offspring may, figuratively speaking, not only inherit a toolbox to fix maladaptive genes but also a preparatory kit for a broad range of future challenges. The tendency to avoid homozygous partners is sometimes strong enough to overrule other aspects of mate selection, such as searching for a stronger or a more vigorous mate (3).

4

Byrne, D., C. Ervin, and J. Lamberth. 1970. Continuity between the experimental study of attraction and real-life computer dating. *Journal of Personality and Social Psychology* 16 (1): 157-65.

5

Jones, J., B. Pelham, M. Carvallo, and M. Mirenberg. 2004. How do I love thee? Let Me count the js: Implicit egotism and interpersonal Attraction. *Journal of Personality and Social Psychology* 87 (5): 665-83.

6

Byrne, D. 1997. An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships* 14 (3): 417-31.



Finding heterozygous mates may indeed be useful, but how are people able to identify such mates amongst all the potential opportunities? As it turns out, humans are actually capable of smelling even minor differences in others' MHC. This effect was observed in a series of experiments conducted by Claus Wedekind and his colleagues [4; 14]. Male participants were asked to wear a T-shirt for two consecutive days and to lead a lifestyle that would interfere as little as possible with their natural body odor. Afterwards, their T-shirts were presented to female participants who rated them on several scales including odor pleasantness, intensity, and the extent to which the smell reminded participants of their current or ex-partners. Every female participant was provided with 6 T-shirts to smell

– 3 with the MHC similarity as high as possible, and 3 where the MHC had the lowest possible similarity. The studies showed that females have a significant preference for the T-shirt odor of MHC-dissimilar mates [4]. What is more, when the scent of a T-shirt reminded participants of their ex-partner, the MHC similarity was especially low [14]. Individuals who share many MHC genes are likely to be related to one another [11; 13]. The progeny of closely related individuals is less fit and is at higher risk of disease compared to the offspring of heterozygous individuals. This happens because the advantages of having a heterozygous gene pool diminishes, while at the same time the expression of recessive genes becomes more likely [11]. As a consequence of the negative effects of inbreeding, humans have evolved

mechanisms such as the ones described in this article which prevent them from engaging in incest [11].

Interestingly, however, the female preference for males with different MHC [14] was not as pronounced when they were taking birth control pills. Such participants had their preferences inverted, meaning that they preferred mates with *similar* MHC [4; 13; 14]. Researchers hypothesize that since the effects of contraceptive pills resemble those of pregnancy, females might be more inclined to search for a helping hand for the offspring (i.e. a close kin) rather than a mate. They are thus more likely to seek genetically related males for this reason [11].

Another topic worthy of further research would be attraction between the same gender. Since two people of the same sex cannot produce offspring, however, there is currently no theory which can explain why two people of the same gender would be attracted to each other's MHC.

Lastly, the question of whether people seek out mates whose MHC is simply different, or whether specific gene combinations are preferentially sought out, has inspired some research [14]. The idea that people make use of their ability to smell MHC differences to find mates whose complexes are not just different, but also complementary seems compelling. To test this hypothesis, researchers Wedekind and Furi [14] assigned more than 140 participants to different levels of gene similarity. Upon failing to find any effect in their sample, the researchers concluded that complementary MHC genes could only provide resistance to highly specific diseases. They therefore argued that to find evidence for complementary MHC, one would need to examine a population which suffers from a highly specific pathogen. Such mechanisms would be obsolete in a large scale population, because of the fundamental diversity found in MHC genes [14].

7

Rosenbaum, M. 1986. The repulsion hypothesis: On the nondevelopment of relationships. *Journal of Personality and Social Psychology* 51 (6): 1156-66.

8

Penn, D., and W. Potts. 1999. The evolution of mating preferences and major histocompatibility complex genes. *The American Naturalist* 153 (2): 145-64.

9

Doherty, P., and R. Zinkernagel. 1975. A biological role for the major histocompatibility antigens. *The Lancet* 1 (7922): 1406-9.

10

10. Garcia-Navas, V., J. Ortego, and J. Sanz. 2009. Heterozygosity-based assortative mating in blue tits (*Cyanistes caeruleus*): Implications for the evolution of mate choice. *The Royal Society* 276 (1669): 2931-40.

As it turns out, humans are actually capable of smelling even minor differences in others' MHC

11. Penn, D., and W. Potts. 1998. Chemical signals and parasite-mediated sexual selection. *Tree* 13 (10): 665-83.

11

12. Havlicek, J., and S. Roberts. 2009. MHC-correlated mate choice in humans: A review. *Psychoneuroendocrinology* 34 (4): 497-512Brown, J. 1997. A theory of mate choice based on heterozygosity. *Behavioral Ecology* 8 (1): 60-5.

12

Bhutta, M. 2007. Sex and the nose: Human pheromonal responses. *Journal of the Royal Society of Medicine* 100: 268-74.

13

Wedekind, C., and S. Furi. 1997. Body odour preferences in men and women: Do they aim for specific MHC combinations or simply heterozygosity? *The Royal Society* 264: 1471-9.

14

People seek mates who are psychologically similar to them – who share their attitudes, beliefs, and have similar personalities. At the same time they are biologically attracted to genetically dissimilar mates – ones who promise to produce strong, disease-resistant progeny.

Some of the points addressed in the preceding paragraphs are inspired by creative ways of approaching the difficult questions of intimate attraction. These points address some key issues that are yet to be explained, without claiming to provide an exhaustive summary of what is still unknown. Much more research is needed to find such answers and advance the scientific understanding of how human attraction works.

Furthermore, it should be noted that although different perspectives on attraction exist, there is no one single viewpoint on the topic that is universally agreed upon. Cognitive and biological mechanisms do not compete against each other; they work simultaneously. Each of the mechanisms described exerts its force in varying degrees at any given moment, forming a complex interaction beyond the scope of any single theory. Thus, despite the lack of complete understanding of intimate attraction, mankind has been able, and will continue, to identify optimal partners.



Creating Confusion

Conrad's View on Colonialism

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Illustration: Senne Trip

Nowadays, the Polish author Joseph Conrad (1857-1924) is generally regarded as one of the greatest novelists in the history of English literature. Writing in the heyday of the British Empire, Conrad mainly drew on his personal experiences in the French and British merchant navies to create short stories and novels that reflected aspects of the European-dominated world of the late nineteenth century (1). While colonialism and imperialism had been considered controversial by priests and intellectuals from the fifteenth century onwards, literature became - with the rise of the novelistic genre and the feuilleton novel - in the nineteenth century one of the most powerful instruments to illustrate problems and ideas of a certain epoch (1).

Being such an engaged author, Conrad is probably best known for his novel *Heart of Darkness* (1899), but the writer himself considered the short story *An Outpost of Progress* (1897) to be his best piece, owing to its 'scrupulousness of tone' and 'severity of discipline' (2). Both *Heart of Darkness* and *An Outpost of Progress* focus on the colonial situation in Africa towards the end of the nineteenth century and challenge readers to examine the ethical questions being raised by the policy of colonialism (2). Conrad's short story *An Outpost of Progress* deals with two European men, Kayerts and Carlier, who are assigned to a trading post in a remote part of the African jungle. Although the men trade goods, their underlying purpose is to export civilization from Europe to Africa and to colonize the area, justifying imperialism as a noble enterprise, a '**white man's burden**'. With no specific tasks or important things to do, the men become increasingly isolated and demoralized.

White man's burden

The White Man's Burden is a poem by the English poet Rudyard Kipling. One general view on the title of the poem proposes that 'whites have an obligation to encourage the cultural development of people from other cultural backgrounds until they can take their place in the world economically and socially' (9).

Both men are continuously plagued by diseases and they blame each other for their miserable situation. Finally, they find themselves arguing about a seemingly banal matter, sugar, which creates an irrational, uncontrolled and violent conflict between them. Carlier is accidentally killed by Kayerts, and Kayerts hangs himself shortly afterwards, which is often seen as a culmination of depravation. Previous theoretical approaches to this story have concluded that Conrad claims in his story of ‘progress’ that imposing Western culture on Africa is useless and these studies have emphasized the theme of incompetence, destructiveness, and cruelty of colonialism. The gradual physical and moral deterioration of the two colonial administrators, eventually leading to their death, is often interpreted as a reflection of the general state of colonialism³.

Post-structural and post-colonial

In literary theory, structuralists claim that human culture may be understood by means of networks of structures, modelled on the base of language. Post-structuralism on its turn questions the self-sufficiency of the structures that structuralism posits and criticize the binary oppositions that constitute those structures, such as black/white, hot/cold, Western/Oriental, etc. Post-colonialism mainly focuses on the rejection/re-evaluation of binary oppositions concerning colonialism and imperialism.

Introducing the ‘Self’ and the ‘Other’

The French theorist Jacques Derrida has become synonymous with deconstruction, often described as a ‘method of analysis’, a ‘type of critique’, an ‘act of reading’, or a ‘way of writing’ (4). According to Derrida, deconstruction involves the close reading of a text in order to demonstrate that any given text, rather than being a unified, logical whole, has irreconcilably contradictory meanings⁴. This means that the story has to be analysed in detail to ‘make the not-seen accessible to sight’ (5), to show the discontinuities in the characters of Kayarts, Carlier, and Makola. This has consequences for the way we regard the ‘traditional’ opposition between the two ethnical groups in this story; Kayarts and Carlier are often regarded as the immoral and preposterous colonizers; Africans like Makola are seen as the moral victors. A specific passage from *An Outpost of Progress* is chosen, in which the different characters incorporate the binary opposition of the ‘Self’ and the ‘Other’ very well:

1

White, A. 1996. ‘Conrad and colonialism’. In: The Cambridge Companion to Joseph Conrad. J. H. Stape (ed.). Cambridge : Cambridge University Press, p. 179-199.

2

Middleton, T. 2006. Joseph Conrad. London : Routledge, p. 1-8, 38.

3

Malcolm, D. 2008. A Companion to the British and Irish Short Story. London : Blackwell Publishing, p. 149-156.

This article will try to reveal that *An Outpost of Progress* is a more complex story than shown in previous research. By approaching Conrad’s work from a **post-structural and post-colonial** perspective, as presented in writings of the French philosopher Jacques Derrida (1930-2004) and the Palestinian-American literary theorist Edward Said (1935-2003), this article tries to find an entirely new dimension to the perception of how colonialism and identity are presented in this specific Conradian story. To achieve this, the essay will deconstruct the dichotomy of the ‘Self’ (European, white) and the ‘Other’ (African, black), by studying the main characters who incorporate this opposition: the Europeans Kayerts and Carlier represent the ‘Self’; the Sierra-Leone ‘nigger’ Makola incorporates the ‘Other’.

4

Leitch, V. 2001. The Norton Anthology of Theory and Criticism. London : Norton, W. W. & Company, Inc., p. 1680-1685, 1702-1703.

5

Barry, P. 2008. Beginning Theory. Manchester : Manchester University Press, p. 71.



There were two white men in charge of the trading station. Kayerts, the chief, was short and fat; Carlier, the assistant, was tall, with a large head and a very broad trunk perched upon a long pair of thin legs. The third man on the staff was a Sierra Leone nigger, who maintained that his name was Henry Price. However, for some reason or other, the natives down the river had given him the name of Makola, and it stuck to him through all his wanderings about the country. He spoke English and French with a warbling accent, wrote a beautiful hand, understood bookkeeping, and cherished in his innermost heart the worship of evil spirits. His wife was a negress from Loanda, very large and very noisy. Three children rolled about in sunshine before the door of his low, shed-like dwelling. Makola, taciturn and impenetrable, despised the two white men. He had charge of a small clay storehouse with a dried-grass roof, and pretended to keep a correct account of beads, cotton cloth, red kerchiefs, brass wire, and other trade goods it contained. Besides the storehouse and Makola’s hut, there was only one large building in the cleared ground of the station. It was built neatly of reeds, with a verandah on all the four sides. There were three rooms in it. The one in the middle was the living-room, and had two rough tables and a few stools in it. The other two were the bedrooms for the white men. Each had a bedstead and a mosquito net for all furniture. The plank floor was littered with the belongings of the white men; open half-empty boxes, torn wearing apparel, old boots; all the things dirty, and all the things broken, that accumulate mysteriously round untidy men (5).

In this fragment, the main characters of the story are introduced. First, we meet the European men Kayerts and Carlier. Their physical appearances contradict – Kayerts is ‘short and fat’, while Carlier is ‘tall’; but they are both described as ‘untidy’, something that can be applied to both their appearance and their character. Although Kayerts and Carlier do not have the same background – ‘Kayerts had been in the Administration of

“By reversing the ‘Self’ and the ‘Other’ in *An Outpost* and by blurring the identities of the characters, Conrad unconsciously breaks with the tradition of a real existing oriental ‘Otherness.’”

the Telegraphs, (...) Carlier [is] an ex-non-commissioned officer of cavalry’ (5) –, they are now similarly positioned in the wilderness. The narrator, in this fragment an omniscient narrator who overviews the entire situation, describes Kayerts’ and Carlier’s personal belongings as ‘... open half-empty boxes, torn wearing apparel, old boots; all the things dirty, and all the things broken ...’. This sentence does not just reflect on the possessions of the Europeans; it reveals their character. As the entire story of *An Outpost of Progress* shows, Kayerts and Carlier are the most immoral and uncivilized men in the outpost. The best example of their depraved characters is shown at the end of the story, when the two men are in a fight on sugar prices (6).

Conrad, J. 1897. *An Outpost of Progress*. The Gutenberg Project, www.gutenberg.org (downloaded September 2013), p. 1-5, 7, 14, 17, 22-24.

6

In this fragment another character is introduced: the ‘Sierra-Leone Nigger’ Makola. The description of this character can be regarded highly positive and sophisticated: ‘he spoke English and French with a warbling accent, wrote a beautiful hand, understood bookkeeping’. Makola can be considered a civilized man in European terms. He knows his languages, he writes well, and he is intelligent. Makola even calls himself ‘Henry Price’, an English name. This shows that Makola is an African who wants to adapt himself to the culture of the European colonizers; he wants to be part of their culture. On the other hand, traditional African customs are maintained by Makola. He ‘cherished [...] the worship of evil spirits’ for example, and he lives in a typical African hut (‘his low, shed-like dwelling’). All the descriptions in this first paragraph of the story serve to set the Sierra Leonean and Kayerts and Carlier apart and to create an opposition between them.

Ashcroft, B. 2000. *Post-colonial Studies: The Key Concepts*. London : Routledge, p. 138.

7

The opposition between the Europeans and the African man can be regarded as an interesting case study in relation to Edward Saïd’s idea of the ‘Self’ (the Occident) and the ‘Other’ (**the Orient**). Saïd often discusses in his works how European and U.S. literary and cultural representations, academic disciplines, and public perceptions foster biases against non-Western peoples. Joseph Conrad seems to contradict this. In *An Outpost of Progress*, we see the reversed of what Saïd argues in his work: the ‘Self’ (Kayerts and Carlier) is ridiculed, while the ‘Other’, Makola and his African customs, are encouraged.

The Orient

Influenced mostly by the works of the structuralist Michel Foucault, Edward Saïd elucidates in his work *Orientalism* (1973) how the West constructed Orient in various works such as travelogues, historical accounts, state, and official archives and novels [4]. This is, according to Saïd, a construction of ‘power, of domination, of varying degree of a complex hegemony’ [7]. The Occident is favoured by the Europeans, while the Orient is presented as childish, feminine and weak.

He breaks with the idea of a universal (European) culture that should be spread and with the idea that the ‘Self’ is in sharp contrast with the inferior ‘Other’.

Questioning binary oppositions

Does *An Outpost of Progress* and the fact that in this text the Orient is favoured and that the West is ridiculed mean that Edward Saïd’s theory is incorrect? No, absolutely not. We must see the story as a post-structuralist activity *avant la lettre*. This means that although post-structuralist thought *an sich* has not been developed yet, we can retrospectively recognize traces of it in literature. For Saïd, Orient and Oriental do not really exist, as he states in *Orientalism and Culture and Imperialism*: Westerners construct and counterfeit the Orient (8). This means that the opposition introduced before, is in fact, in Saïdean terms, not an opposition between Makola and the weak Europeans, but only a construction of an opposition. Saïd asserts that European knowledge of the East goes arm in arm with expansionism,

exploration, and settlement. This is shown in *An Outpost* by the fact that Kayerts and Carlier are convinced that they are bringing civilization to the outpost and that they can actually make profits in the outpost. Moreover, Saïd argues that the ‘Orient’ is constructed and represented in the binary opposition against the Occident, as the ‘Other’, which is in this case incorporated by the native Africans such as Makola. In relation to *An Outpost*, we can say that Joseph Conrad has already seen this phenomenon – the *construction* of an opposition between the Orient by the Occident and not a real *existing* difference – in the late nineteenth-century. By reversing the ‘Self’ and the ‘Other’ in *An Outpost* and by blurring the identities of the characters, Conrad unconsciously breaks with the tradition of a real existing oriental ‘Otherness’.

Saïd suggests that the binary opposition of the ‘Self’ and the ‘Other’ is in fact an artificial construction of the West. It is worthwhile to search for the origins of this thinking. Therefore, we return to the deconstructive and post-structuralist thoughts of Jacques Derrida, the founding father of post-structuralism. In *Dissemination* (1972), Derrida writes about the ambiguity of the binary oppositions we face every day. He discusses for example the ambivalent position of the word ‘pharmakon’: ‘this *pharmakon*, this ‘medicine,’ this philtre, which acts as both remedy and poison, already introduces itself into the body of the discourse with all its ambivalence’ [4]. This quotation makes clear that the nature of all words is ambivalent: just like the word ‘pharmakon’ has two different meanings,

all other words are in general ambiguous and can have different meanings. No fixed meaning is possible. This has consequences for binary oppositions: in fact, they are no real oppositions, because the ambivalence of words removes strict borders between words and blends their meanings. Moreover, Derrida argues that ‘... the word *pharmakon* is caught in a chain of significations’ and he calls this chain of significations a ‘play’ [4]. In this way, binary oppositions are in fact word-games that play with meanings. This is exactly what happens in *An Outpost of Progress*.

Let us illustrate the word-games on the basis of the story: we already identified the opposition between the European 'Self' and the African 'Other'. How can we consider this opposition as an artificial construction that can be deconstructed? The opposition is a good example of a word-game, because the 'Other' in the text, the African culture of Makola, is in fact not a real 'Other'. What we see is that Makola is actually half a 'Self', regarding the fact that he '... maintained that his name was Henry Price.' (6) and the fact that '... he spoke English and French with a warbling accent, wrote a beautiful hand, understood bookkeeping, ...' (6): traits we would generally – following the traditional patterns – associate with someone from the Occident. However, some traits of Makola can be attributed to the typical 'Other'. For instance the fact that he treats the white station workers as slaves, after which Carlier says: 'Makola – you beast!' (6), which also pleads for the Europeans. In this scene, they represent morality, while Makola shows immorality by trading the station workers for ivory.



Also in the case of Kayerts and Carlier, we can notice blended characters. They have a European background, which is for example visible in their indignant reaction to Makola when he trades their fellows for ivory, but they resemble at the same time the 'bad fellows' (5). Makola describes Kayerts and Carlier: 'They fight with people, and catch women and children. They are bad men, and got guns. There is a great disturbance in the country' (5). Moreover, it is important to notice that Kayerts and Carlier have, in the course of the story, more and more caricatural functions. Although 'they were two perfectly insignificant and incapable individuals' (5), the narrator makes clear that their...

... existence is only rendered possible through the high organization of civilized crowds. To the crowd that believes blindly in the irresistible force of its institutions and of its morals, in the power of its police and of its opinion (5).

8 Hale, D. 2006. The Novel: An Anthology of Criticism and Theory 1900-2000. London : Blackwell Publishing, p. 701.

9 Easterly, W. 2006. The White Man's Burden. London : Penguin Books.



It appears as if Conrad would like to demonstrate that Kayerts and Carlier are caricatural 'models' of reality. Their existence depends on the occidental system and European institutions. They represent the enormous 'crowd' of believers of the system. It seems that it does not matter which individuals Conrad would have chosen for this story: they all represent the same ideals, morality, opinion, and institutions. The ironic character of these 'models' is shown clearly in the following quotation:

They lived like blind men in a large room, aware only of what came in contact with them (and of that only imperfectly), but unable to see the general aspect of things (6).

This quotation illustrates Conrad's insight in colonialism very well. He breaks with the idea of a universal (European) culture that should be spread and with the idea that the 'Self' is in sharp contrast with the inferior 'Other'. He shows the disabilities of the system and its believers. He shows why 'the white man's burden' is a useless concept, as it is in fact a construction of the West. Thereby, I think that Conrad does not 'believe' in binary oppositions. His characters are all three blended characters and they all present a mixture of the Occident and the Orient.

Therefore, we can say that Conrad seems to play with notions on identities: he mixes them and creates uncertainties. These uncertainties can confuse the reader, because he does not know anymore with whom to identify and what to think about colonizers and colonialists. As a reader, one tends to identify with the colonialist Makola and to oppose to Kayerts and Carlier. However, this is complex, because Makola identifies with the European culture, and thus indirectly with those who have sent the immoral Kayerts and Carlier to Africa. This makes An Outpost a very complex and intriguing story. An Outpost shows that identities can change. Kayerts and Carlier are uncertain about their identity. They identify with 'the system, the institutions' and let this system use them for a ridiculous mission, but they see only in the end of the story how absurd this is. This is for example shown in the phrase '... he was putting out a swollen tongue at his Managing Director.' (6), which can be seen as an act of rebellion against the colonial system.





mechanics or computer programming [2]. People with autism are severely impaired in regards to empathy but have an unusual ability to understand systems. A powerful tenet of this theory is that males and people with autism are overrepresented in fields guided by systems, such as physics or music. Consequently, Baron-Cohen introduced the *empathize/systemize* dichotomy to define the female and male brain. These sex differences are based on averages, and the theory concurs that autism can also be present in females. Autism is four times more prevalent in males than in females [3]. In high-functioning autism, the male to female ratio is higher than 10:1 [2].

The extreme female brain

So, Baron-Cohen claims that excessive systemizing and insufficient empathizing characterize autism. Yet, what about people who have a low interest for systems, but have an unusually high drive to empathize? Logically, we would expect excessive empathizing and inadequate systemizing to be undesirable as well. This leads us to the female-end of the spectrum. There are indeed disorders characterized by an excessive sensitivity to social relationships, which are primarily seen in females. For example, borderline personality disorder (BPD) and histrionic personality disorder (HPD) are both characterized by an abnormal drive for socialization. BPD is defined by instability of behaviors, interpersonal relationships, and an unstable self-image [4]. BPD patients show weak autobiographical memory [5], constantly feel empty, experience imaginary victimization [6], and often do not know what they personally like, believe, value or prefer [7]. Interestingly, although it is not part of the diagnostic criteria, BPD patients also frequently lie and manipulate others, often to trick people into expressing sympathy for them. The female-to-male ratio in BPD is 3:1. By simple definition, BPD is a maladaptive pattern of behavior to fulfill an intense social need, often expressed by manipulative strategies to obtain nurturing attention.

Fombonne, Eric. 2003. "Epidemiological Surveys of Autism and Other Pervasive Developmental Disorders: An Update." Journal of Autism and Developmental Disorders 33 (1): 365-382.

Gunderson, John G. 2011. "Borderline Personality Disorder." The New England Journal of Medicine 364: 2037-2042.

An excessive sensitivity to interpersonal relations is not always as pervasive as in BPD, and can be seen in people that are less distressed, such as people with histrionic personality disorder (HPD). HPD is characterized by excessive attention seeking behaviors and a strong need for approval from others. People with HPD are loud, behave inappropriately, have an unstable personality, exaggerate their behaviors and emotions, and are easily influenced by others. HPD is closely related to BPD, as both emerged from the discontinued diagnosis of hysteria. Furthermore, both are overly dependent on the social environment, leading to naivety and suggestibility as defining characteristics. HPD affects women four times more than men [8]. People with HPD usually do not struggle as much as people with BPD, but its female bias is nonetheless consistent with the view that females are overrepresented in conditions of immoderate need to empathize.

5 Jones, B., H. Heard, M. Startup, M. Swales, J.M. Williams, and R.S. Jones. 1999. "Autobiographical Memory and Dissociation in Borderline Personality Disorder." Psychological Medicine 29 (6):

6 Zanarini, M.C., F.R. Frankenburg, C.J. DeLuca, J. Hennen, G.S. Khera, and J.G. Gunderson. 1998. "The Pain of being Borderline: Dysphoric States Specific to Borderline Personality Disorder." Harvard Review of Psychiatry 6 (4): 201-207.

7 Simeon, Daphne and Jeffrey Abugel. 2008. Feeling Unreal: Depersonalization Disorder and the Loss of the Self.



The Big 5 Personality Traits

The five broad domains of personality that are used to describe human personality.



Phenotypes

The appearance of an organism resulting from the interaction of the genotype and the environment.

BPD and HPD can be seen as the extremes of the normal female profile, as it shows extreme forms of the higher need for empathizing in females [2]. In addition, individuals with either condition have acute neuroticism [9], and neuroticism is the trait of **the Big 5 Personality Traits** that distinguishes best between men and women [10]. In an article published in June 2015, Baron-Cohen expressed a recommendation to continue considering people with BPD as having an extreme female brain [11]. The empirical test of this theory will most likely follow shortly, but the female preponderance in BPD and HPD is highly suggestive.

“People with autism are severely impaired in regards to empathy but have an unusual ability to understand systems”

Other candidates for the phenotypic expression of the extreme male brain

Earlier, I explored Baron-Cohen’s suggestion that autism was a result of extreme brain masculinization. There are, however, a number of disorders that are primarily seen in males which are strongly related to other masculine traits. This suggests that the Extreme Male Brain theory might not encompass all the possible **phenotypes** of the male brain, and that this shortcoming requires clarification. Here are additional disorders that are often linked to excess masculinity.



Antisocial personality disorder, commonly known as psychopathy, is defined by enduring antisocial behavior, reduced empathy, bold behavior, and fearlessness. One quarter of the male prison population fits these criteria. Robert D. Hare, who developed the Hare Psychopathy Checklist, believes that psychopaths are relatively successful in the workplace, as psychopathic traits are common in higher positions of corporate organizations. Their boldness and propensity for risk-taking may be adaptive in executive functions, and even organized crime. The traditional phenotype of psychopathy, characterized by grandiose self-image and instrumental violence, is almost exclusively seen in males [12]. Females diagnosed with psychopathy show symptoms that are more accurately described by HPD and BPD [12]. Other than being highly male biased, psychopathy is strongly linked to correlates of hyper-masculinity, such as aggression, sensation seeking, criminality and testosterone. This suggests that autism might not encompass the whole range of the extreme male brain.

8 American Psychiatric Association. 2013. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington, DC.

9 Clarkin, John F., James W. Hull, Jennifer Cantor, and Cynthia Sanderson. 1993. "Borderline Personality Disorder and Personality Traits: A Comparison of SCID-II BPD and NEO-PI."

10 Schmitt, David P., Martin Voracek, Anu Realo, and Juri Allik. 2008. "Why Can't a Man be More like a Woman? Sex Differences in Big Five Personality Traits across 55 Cultures." Journal of Personality and Social Psychology 94 (1): 168-192.

11 Larson, Felicity V., Meng-Chuan Lai, Adam P. Wagner, MRC AIMS Consortium, Simon Baron-Cohen, and Anthony J. Holland. 2015. "Testing the 'Extreme Female Brain' Theory of Psychosis in Adults with Autism Spectrum Disorder with Or without Co-Morbid Psychosis." Plos One 10 (6): 1-14.

12 Wynn, Rolf, Marita H. Hoiseth, and Gunn Pettersen. 2012. "Psychopathy in Women: Theoretical and Clinical Perspectives." International Journal of Women's Health 4: 257-263.

13 Uekermann, J., M. Kraemer, M. Abdel-Hamid, BG Schimmelmann, J. Hebebrand, I. Daum, J. Wiltfang, and B. Kis. 2010. "Social Cognition in Attention-Deficit Hyperactivity Disorder (ADHD)." *Neuroscience and Biobehavioral Reviews* 34 (5): 734-743.

14 Rutter, Michael. 2014. "Factor Structure of Autistic Traits in Children with ADHD." *Journal of Autism and Developmental Disorders* 44 (1): 204-215.

15 Fowler, Tom, Kate Langley, Frances Rice, van den Bree, Marianne B.M., Kenny Ross, Lawrence S. Wilkinson, Michael J. Owen, Michael C. O'Donovan, and Anita Thapar. 2009. "Psychopathy Trait Scores in Adolescents with Childhood ADHD: The Contribution of Genotypes Affecting MAOA, 5HTT and COMT Activity." *Psychiatric Genetics* 19 (6): 312-319.

ADHD is a neurodevelopmental disorder characterized by hyperactivity, not listening when spoken to and struggling with instructions. ADHD is often linked to hyper-masculinity, as it is often seen in traits and behavioral patterns that are typically defined as masculine, such as drug and alcohol abuse, high spatial ability, conduct disorder, risk-taking activities, and physical injury. Interestingly, people with ADHD are overly represented in sports, as it has been theorized that 25% of athletes have hyperactivity disorder. ADHD is diagnosed three times more often in males than females, and males are treated nine times more than females, and in severe ADHD, the ratio is 16:1. The higher numbers of males with ADHD and its correlations to masculine traits challenges the Extreme Male Brain theory of autism.

Comorbid

Two or more disorders or illnesses occurring in the same person.

Theory of mind

The ability to attribute mental states to oneself and others and to understand that others have beliefs, desires, intentions, and perspectives that are different from one's own.

Dissociation

Disconnection from mental states that are usually integrated, such as consciousness, memory, identity and perception.

Many have studied the link between ADHD and psychopathy and autism. Indeed, ADHD is often **comorbid** with either and its subtypes diverge in symptoms of psychopathy and autism. Specifically, the symptoms of the inattentive subtype resemble those of autism, and those of the hyperactive and combined subtype resemble psychopathy. ADHD and autism both share the symptoms of low attentiveness to social cues, communication problems and narrow interests. ADHD is also linked to a weak **theory of mind** (ToM) (13) and repetitive behaviors (14) which are the core components of autism. Furthermore, ADHD is, like autism, highly comorbid with Tourette's syndrome. On the other hand, ADHD and psychopathy are both characterized by the persistent

breaking and defying of social norms, impulsivity and impatience. Some have argued that people with ADHD have psychopathic traits, but to a subclinical extent (15). Additionally, the inattentive symptoms correlate negatively with the hyperactive symptoms, indicating that psychopathic traits and autistic traits correlate negatively in those with ADHD, in turn indicating that psychopathy and autism represent two ends of a spectrum. In short, people with ADHD show symptoms of autism, notably in their narrow interests and social deficits, and also have mild psychopathic traits, as seen in their impulsive and sensation-seeking tendencies. However, does the continuum from autism, to ADHD, to psychopathy represent the male end of excess masculinization?

16 Richell, R.A., D.G.V. Mitchell, C. Newman, A. Leonard, S. Baron-Cohen, and R.J.R. Blair. 2003. "Theory of Mind and Psychopathy: Can Psychopathic Individuals Read the 'language of the Eyes'?" *Neuropsychologia* 41: 523-526.

17 Rutter, Michael, Avshalom Caspi, and Terrie E. Moffitt. 2003. "Using Sex differences in Psychopathology to Study Causal mechanisms: Unifying Issues and Research Strategies." *Child Psychology and Psychiatry* 44 (8): 1092-1115.

18 Krahn, Lois E., Hongzhe Li, and M. Kevin O'Connor. 2003. "Patients Who Strive to be Ill: Factitious Disorder with Physical Symptoms." *American Journal of Psychiatry* 160 (6): 1163-1168.

19 Cross, S. E. and L. Madson. 1997. "Models of the Self: Self-Constructs and Gender." *Psychological Bulletin* 122 (1): 5-37.

Those with an extremely female brain might have a self-concept that is almost entirely characterized by their relationships with others.

20 Cale, Ellison M. and Scott O. Lilienfeld. 2002. "Histrionic Personality Disorder and Antisocial Personality Disorder: Sex-Differentiated Manifestations of Psychopathy?" *Journal of Personality Disorders* 16: 52-72.

21 Sprague, Jenessa, Shabnam Javdani, Naomi Sadeh, Joseph P. Newman, and Edelyn Verona. 2012. "Borderline Personality Disorder as a Female Phenotypic Expression of Psychopathy?" *Personal Disorders* 3 (2): 127-139.

It appears not, according to current assumptions about the male brain. It is unlikely that psychopaths have an extreme male brain, as they are usually reasonably well functioning socially. As a matter of fact, psychopaths have an intact theory of mind (16) and decent emotion recognition skills for most emotions, unlike individuals with autism. Even though psychopathy is strikingly sex-biased and it might seem like an indicator of an extreme male brain, psychopathy has been linked to elevated intrapersonal power, and men and women use this power differently. In a similar vein, people with ADHD experience a decrease in their

symptoms over time and about 40% will have no enduring symptoms in adulthood, even though their social cognition is mildly impaired. These conditions show sex-specific behaviors and their epidemiology is biased towards males, but they do not have the burdensome symptoms that individuals with autism have. Therefore, if the extreme male brain is characterized by the absence of a theory of mind, autism spectrum disorders represent the extreme expression of sex specific traits more accurately. Yet, ADHD and psychopathy can be considered as excessively masculinized behavioral tendencies.

What defines both extremities of the spectrum?

Females are vastly overrepresented in adolescent-onset emotional disorders involving shallow self-concepts, extreme neuroticism, **dissociation** and excessive social needs [17]. Such social need often expresses itself in manipulative strategies to evoke nurturance, by self-harm, imagined victimization or factitious symptoms [18]. Yet, it is unclear how dissociation and empathic needs relate to each other. Females consider others as representing a larger part of their identity, compared to males [19]. Accordingly, those with an extremely female brain might have a self-concept that is almost entirely characterized by their relationships with others, at the cost of not having a stable, durable identity and personal interests. This might lead to a point where their fragile sense of self makes them vulnerable to dissociation due to a complete abandonment of one's identity. Empathy would come at a cost that would contrast with the narrow interests and autonomy that people with autism have. To determine the validity of this theory, further consideration is needed. A possible first step would be to explore the empathizing/systemizing scores of individuals with dissociative disorders to establish if they score lower on systemizing than average females. That would indicate that they have an extremely female brain. If this is the case, the term empathy would seriously need reconsideration, as both histrionic and borderline personality disorders have been argued to constitute the female phenotype of psychopathy [20, 21].

Males make up the large majority of those diagnosed with early-onset neuropsychiatric disorders that involve a lack of conformity to social norms and antisocial behavior¹⁷. These disorders are all strongly linked to impairments in socialization. Consequently, lack of empathy does appear to define the male brain. More specifically, if a deficient ToM represents an extreme form of a lack of empathy, autism would be the phenotype of an extreme male brain. Yet, some ambiguity remains. For instance, there has been a recent increase in autism diagnoses in females. While they do not show the typical phenotype of autism, their impairments in social cognition are substantial. Most notably, people with borderline personality disorder, who have been theorized to have an extreme female brain, have impaired emotion recognition, which is characteristic of a deficient theory of mind. This suggests that a deficient ToM is not exclusive to the male brain, and it would be premature to exclude ADHD and psychopathy as potential expressions of excess masculinity on the basis of their functional theory of mind. Another point that needs to be addressed is that many correlates of the male brain do

not appear to be linked to autism. In spite of the strong relationship between masculinity and spatial abilities, athletic skills, aggression and sensation seeking, people with autism show none of these inclinations. In contrast, psychopaths and hyperactive people do show these tendencies. One might argue that the definition of systems should be extended to include physical and professional fields, which are systems vastly dominated by males. In this way, the reasoning that was used to nominate autism as an extreme form of male traits could be extended to ADHD and psychopathy. Consequently, the hypothesis that autism, ADHD and psychopathy are all different phenotypes of the extreme male brain deserves empirical evaluation.

The differential prevalence of mental conditions suggests that we are all on a continuum from poorly socialized to overly socialized. As psychological disorders represent maladaptive strategies to fulfill a need, they can offer us tools to determine the nature of the needs that define us. Females are overrepresented in disorders characterized by an excessive social need, and males make up the majority of those with disorders characterized by poor socialization and a need to manipulate systems. To this day, the best candidates for the phenotypical expression of the extreme male brain are autism spectrum disorders, attention deficit and hyperactivity disorder and psychopathy. Borderline personality disorder (and its ramifications) and histrionic personality disorder are the best candidates for the extreme female brain. These sex-differential inclinations offer an unprecedented parallel with different evolutionary purposes in men and women, which are generating material or social capital respectively. A certain flexibility in systemizing needs and sociability is a healthy compromise, as people with an excessive social need, just like those who are overly antisocial, experience (and cause) considerable distress. These disorders represent extreme and inflexible forms of normal tendencies, and should not be marginalized, as they help us understand the proclivities that define all of us.

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Cover: Jaime Jacob.

We thank the reviewers, the Council of Experts, the Honours College team and the Minerva Art Academy for their work and support. We would also like to thank the Honours College for their financial support.

Issue 6 | December 2015. ISSN: 2214-6083.
Edition: 500 copies.

Honours Review is a publication of students at the University of Groningen, the Netherlands.

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