



Evolutionary Psychiatry Special Interest Group (EPSIG)

Newsletter April 2022

- Editor: Dr Annie Swanepoel (Consultant Child & Adol. Psychiatrist) annie.panzer@gmail.com
- EPSIG Chair: Dr Paul St John-Smith (Consultant Psychiatrist) paulstjohnsmith@hotmail.com
- Finance Officer: Dr Riadh Abed (Consultant Psychiatrist) abedrt@btinternet.com
- EPSIG YouTube Channel: <https://www.youtube.com/channel/UChyW9iyWB4jcQTequ-Nrq5w>
- EPSIG web Pages: www.epsig.org

1. Notes from the Editor

I am pleased to invite you to read our April 2022 EPSIG Newsletter, which has links to our AGM on 10th June, as well as a not to be missed free virtual talk by Prof Randolph Nesse about the evolutionary foundations for psychotherapy on 26th May 2022, as well as information on our Evolutionary Psychiatry symposium at the RCPsych June conference in Edinburgh.

In this Newsletter we feature a contribution by Dr Gerhard Medicus, which is very salient, given the current political situation both in the UK and abroad. His presentation is about an ethological perspective on leadership and workplace dynamics. I have picked the below bits out to whet your appetite and inspire you to read the whole piece:

- 70 % of employees that quit do so because of differences with their superiors
- The hierarchical structures of human societies are based on behavioral dispositions that can also be observed to a large extent in animals
- The early childhood experience of security, associated with positive emotions, is arguably at the root of the ability of even adult humans to voluntarily fit into hierarchical systems. This emotional readiness can, of course, be abused by leaders
- Humans are the most cooperative and potentially most unselfish primates
- However, there is no satiation in the pursuit of power and appreciation (in contrast to satiation in hunger, thirst, and sexuality)

- Since corresponding leadership positions are associated with a gain in autonomy and prestige, it is not out of the question that they are also sought by individuals who are not capable
- Power can also lead to a change in self-perception and promote overestimation of oneself and this is often fostered by flattering feedback from submissive subordinates
- As a result, it is important to create regulations that counteract this. They can consist of controlling institutionalized power, training employees and limiting leadership periods

2. EPSIG AGM

Please email sigs@rcpsych.ac.uk for a link to attend the virtual EPSIG AGM that will be held on 10th June 2022 from 1-2 pm.

3. WPA, Section of Evolutionary Psychiatry Free Webinar Program.

The next free WPA evolutionary psychiatry webinar will be on 26th May 2022 2022 at 4pm where Prof Randolph Nesse will be speaking about “Why relationships exist: Evolutionary foundations for psychotherapy”. Please register at: <https://www.wpanet.org/evolutionary-psychiatry>

4. RCPsych International Congress, Edinburgh, 23rd June 2022, 10h30-11h45

S40 What studies about maternal abuse, prenatal stress, childhood trauma and insights from hunter-gatherers can teach us about normal and abnormal child development

Chair: Dr Paul St John-Smith, Chair of Evolutionary Psychiatry Special Interest Group

- **An evolutionary perspective on child maltreatment**
Dr Annie Swanepoel, North East London Foundation Trust
- **Prenatal stress and effects on child neurodevelopment: evolutionary explanations**
Professor Vivette Glover, Imperial College London
- **Evolutionary mismatch and mental disorder: insights from hunter-gatherer studies**
Dr Nikhil Chaudhary, University of Cambridge

5. An ethological perspective on leadership and workplace dynamics

by Gerhard Medicus

In a world driven by an ever-increasing pressure to perform and achieve, workplace dynamics and leadership styles are highly relevant. Schwertfeger (2006) estimates that **70 % of employees that quit do so because of differences with their superiors**. It is equally alarming that approximately 90 % of employees describe themselves as motivated when asked at the beginning of their career,

whereas shortly before retirement, this number decreases to 10 or 20 %. These compelling numbers are also related to many modern-day mental problems, including and above all burn-out.

Leadership styles play a crucial role in creating an atmosphere in which people either enjoy working or not. They are of paramount importance in determining a company's success and influencing both employees' mental health and that of the leaders themselves. Poor leadership can result in an enormous burden of costs both on the individual and socio-political levels.

Considering the relevance of this issue today, our understanding of hierarchies and leadership behaviour remains insufficient. This lack is partially due to the persistent yet unjustified separation of natural and human sciences. However, our biological roots have much to offer about our modern human behaviour. **An ethological view on hierarchies and their origin can help bridge the gap and enhance our knowledge and understanding of leadership and how different styles affect our behaviour.** Darwin already knew: "In the distant future I see open fields for far more important research. [A Theory of] Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation. Light will be thrown on the origin of man and his history" (1859: p. 488).

Darwin's consideration (1859) was taken up by (1) Konrad Lorenz (1978: *Behind the Mirror*), who developed a theory on the evolution of cognitive performance. This theory is related to the systematics of vertebrates; it is summarised in the second English edition of Gerhard Medicus' book (2017, Table 5, p. 64). Following this Darwinian model, (2) Hans Kummer (1991) and Peter Hammerstein (1981) reconstructed development stages in how resources and possessions are handled (Medicus 2017, Table 8, p. 108). (3) Gerhard Medicus and Sigrid Hopf (1990) extended Darwin's and Lorenz' theory by including the evolution of gender differences (Medicus 2017, Table 9, p. 118).

Later, a reconstruction of the evolution of cognitive presuppositions for morality and reflection on humanity and human dignity was proposed ((4) Medicus 2017, Table 7, p. 99). In principle, the four reconstructions match the neuro-anatomically layered structure resulting from different brain parts' phylogenetic age differences. As can be derived from the Periodic Table of Human Sciences (Medicus 2017, Table 1 & 3, p. 26 & 28), the reconstructions represent cornerstones of an emerging *Theory of Psychology*. Many phylogenetically old behavioural traits continue to shape and influence our psyche today and affect neurotic regressions.

The following four premises support this understanding of reconstructions of behavioural phylogeny based on vertebrate evolution. The first two premises are derived from research in comparative morphology.

(1) Phylogeny is the evolutionary outcome of a *series of pre-existing traits or preconditions*. Many fossils display characteristics that were once preconditions for phylogenetically more recent traits.

(2) Phylogenetic history is *conservative*. Many traits persist, often in modified form, over extended periods of phylogenetic development. The probability of an existing trait being lost decreases with increasing phylogenetic age. Examples include the spinal column and spinal cord, which are found in all vertebrates. A benefit from losing either one of these traits is currently unthinkable. Consequently, new traits emerge on the foundation of older pre-existing traits.

(3) Behaviour, emotion, and intellect are capacities based on electrophysiological processes in the nervous system’s anatomical structure. It follows that the first two premises can equally apply to the nervous system’s anatomy and capacities.

(4) During evolutionary history, human ancestors have shown increasingly complex behavioural repertoires. Some capacities and traits correspond to those found in extant organisms.

The fifth reconstruction, **“Ranking and hierarchy from an ethological point of view”**, further explores this line of thought, as shown in the following table and discussed further below.

Types of Hierarchy	Classification	Advantages
5. Appreciation	Humans	Social Care
4. Assertion (antisocial empathy)	Chimpanzee	Care by reassurance (comforting)
3. Competence	Higher monkeys	Learning for group members
2. Strength (“pecking order”)	Social mammals	Reduces fights
1. Caring towards young	Lower mammals	Protects young

In both animals and humans, social groups are characterized by so-called rank orders (hierarchies, after the ancient Greek words hieros/sacred and arche/order or dominion).

Hierarchies of different expressive forms exist in every social association. The position of an individual in the hierarchy depends on various factors, such as age and gender, ecological conditions and evolutionary developmental level. Someone's hierarchical position also depends on whether or not a female has a young. In humans, life history, origin and socio-political conditions also play a role. Hierarchical relationships can also vary in animals and humans depending on the time of day.

In the species comparison, different forms of hierarchy can be observed in different degrees of expression: Pecking orders, situation-dependent mutual support in rank struggles, competence hierarchies, appreciation hierarchies and hierarchies by assertion. **The hierarchical structures of human societies are based on behavioral dispositions that can also be observed to a large extent in animals.** However, the evolutionarily anchored striving for rank and recognition is associated with considerable risks, especially in so-called advanced cultures. Functional and dysfunctional dispositions can be combined within the framework of a theory based on human ethology. The focus of this chapter is on hierarchies in groups of people. The topic is particularly relevant for organizations and managers, but also for business administration, ethics, employee motivation and health and job satisfaction.

1 Forms of rank order

1.1 Early Mammals

Caring hierarchy: At the time of the emergence of brood care in early mammals, hierarchical relationships between adults probably did not yet exist. The first hierarchy between individuals of the same species may have been that between mother and young.

Already in egg-laying mammals, there is a strict dependence of the young on the mother, who provides it with mother's milk, keeps it clean, and, if necessary, warms and protects it. Even after weaning, the young are often still dependent on assistance in obtaining food and protection from predators, assistance in which both parents participate in some species. Thus, the earliest form of hierarchy, also called caring hierarchy, results from these supportive acts toward the young. Their purpose is, among other things, to prevent self-endangering autonomy attempts by the young. However, until the young have reached the necessary body size and have acquired the vital skills (e.g. for catching prey), they too can be quite challenging for the parents. For this reason, one speaks here also of an omega hierarchy.

"Potentials" of caring for other forms of hierarchy: The caring hierarchy characterized by altruism probably has little to do with evolutionary later forms of hierarchies between adults, characterized by dominance, submission and flight. And yet, with brood care, an important basis for this may have emerged because the capacity for individual recognition, useful in the context of maternal or parental care, has been extended to adult members of the social group. Equally noteworthy, with the evolution of empathy, theory of mind, and reflection, new options for caring emerge that benefit not only young but also adults.

The early childhood experience of security, associated with positive emotions, is arguably at the root of the ability of even adult humans to voluntarily fit into hierarchical systems. This emotional readiness can, of course, be abused by leaders for their own purposes (Eibl-Eibesfeldt 1996). However, it can also be cultivated prosocially. In terms of its cultivability, moreover, the humility of adults is particularly relevant. Its roots presumably lie in the emotional experience of small children who feel "sheltered." This ability also promotes resilience and can be used in music therapy, for example.

1.2 Social Mammals

The so-called **hierarchy of strength**, which orders the individuals of a group according to their forcefulness, developed in the context of the struggle of social mammals for limited resources. This form of hierarchy has the advantage of avoiding repeated strength-consuming fights from the establishment of the order onwards. Thorleif Schjelderup-Ebbe (1922) first described it in chickens, where there is a clear **pecking order**. Rank fights are an agonistic form of aggression. The drive goal is the subjugation of the opponent. If a fight is won, the winner usually shows feelings of triumph and/or typical dominance behavior, whereas the inferior signals his/her submission, for example by flight and/or gestures of humility. Victory is significant not only because of the resources contested, but also because the higher-ranking animal usually enjoys reproductive advantages over the lower-ranking. The lower-ranking animal gets food only when the higher-ranking animal is satiated or unobserved by it, or when it devours the "prey" faster than the higher-ranking animal can drive it away.

Hierarchies need not be linear in the sense of α stronger than β , β stronger than γ , γ stronger than δ , δ stronger than ϵ : in fact, "inconsistencies" in the sense of, for example, ϵ stronger than γ are observed in practice. Sometimes α supports γ in the struggle against β . Thus, α can secure and increase the distance to β .

1.3 Higher Monkeys

The hierarchy of strength behaviour described above can also be observed in higher monkeys. In addition, higher monkeys support "friends" by whom they are regularly groomed, in rank encounters and current disputes.

Hierarchies based on strength do not go unchallenged in the long run. When a new hierarchy has been established after disputes, many species require reconciliation to avoid jeopardizing group cohesion. To ensure such reconciliation, it is necessary for the inferior to acknowledge the rank of the stronger through facial expressions, posture, and gestures, and then to initiate and maintain contact again using behaviours that have their roots in brood care behaviour (e.g., "delousing" or grooming). The benefits to the group include communal avoidance and defense against predators; a sense of belonging in the group is likely to be accompanied by positive emotions in social mammals.

Hierarchically structured family groups (e.g., in wolves and common marmoset/*Callithrix jacchus**1*), in which only the strongest pair reproduces, are called aristogamies (Bischof 1985). In members of some species, the female takes the rank of its male.

Age or competence hierarchy: Physical strength alone, however, is insufficient in many species. Thus, it is often the most experienced or the eldest individual that takes the leading position. In this way, the young and inexperienced group members can learn from them. Such a hierarchy of competence can be observed in elephants, for example. In some baboon species, the group primarily follows the strongest; however, if the most experienced animal does not participate in a morning departure, for example, and thus refuses to follow, the group follows not the strongest but the most experienced animal (Kummer 1975).

Inheritance hierarchies: In special cases, rank can be inherited without prior evidence of strength or competence. For example, cubs of high-ranking rhesus monkey mothers have advantages over cubs of lower-ranking mothers. Inheritance hierarchies are also widespread, especially in humans. By belonging to certain ethnic groups, religions, castes, clans or noble houses, certain advantages can be passed on to descendants. In Palaeolithic societies, reciprocity and meritocracy were prominent. In Neolithic cultures, with the emergence of social distinctions regarding property and wealth, both chieftaincy and legacies were increasingly determined by inheritance rules and contention.

1.4 Great Apes

Coalitions: Hierarchical dynamics experience new options in chimpanzees and humans. Thus, in both, "male alliances" are formed again and again with the aim of ousting the highest-ranking group member from his position and thus enjoying his privileges (in chimpanzees these are predominantly sexual privileges, in humans often privileges of status and power, sometimes outside the legally provided framework). The weaker coalition partner can sometimes exercise more power than the objectively stronger of the two.

In chimpanzees and humans, it has been repeatedly observed how reconciliation with the former adversary helps to win that adversary as a coalition partner when needed. The inability to reconcile

is tantamount to "sociopolitical suicide" (de Waal 1982).

However, through reciprocal support, bonobo females also secure food resources against both sexes. Long-term strategies and "sympathies" as well as family ties play a greater role in chimpanzee females than in males which are more power opportunistic.

Hierarchically ascending male chimpanzees first subjugate the females in their group and then attempt to work their way up the male hierarchy. In doing so, they employ imposing behaviour, a method in which group members are frightened by show of force (i.e. assertion hierarchy), but also by, for example, making noise with tin cans (Goodall 1986). This striving for status and rank requires the ability to empathise, which is often unilaterally associated only with prosocial behaviour (e.g., comforting).

Relative hierarchies: In bonobos and humans, there are also context-dependent hierarchies in which absolute hierarchy aspects are overridden: When a bonobo, initially alone in a tree eating attractive fruit, faces competition from stronger conspecifics, it sometimes quickly builds a nest with fruit-laden branches. With luck, the improvised nest will be respected as territory by conspecifics (Fruth et al. 1993).

Similarly, absolute rank relationships in the military or in workplaces are overridden in certain situations, such as when a superior is invited to his employee's home. Absolutist authorities, however, ignore these distinctions.

1.5 Homo sapiens

Appreciation hierarchy: With the emergence of emprohesis (or Theory of Mind; ontogenetically from the fourth year of life, phylogenetically possibly from *Homo erectus* onwards, neurobiologically linked with a multitude of behavioural realms), there is an awareness of what others can and cannot know. This awareness is a prerequisite for the striving for recognition; self-worth is also related to it. Thanks to special talents and achievements as well as to the knowledge of their position in the group, individuals can therefore gain even more prestige and thus the position of a leader. The resulting appreciation hierarchy is fragile, however, because it remains dependent on the assessment by others (Bischof 2012).

So-called meritocracies have been observed among indigenous cultures. Their leaders "earned" their role through special competencies, social attractiveness or skill; their status depends on social control and support in the group. Rank and risk often correlate in direct proportion in this context.*2*

Thanks to theory of mind and reflection, the appreciation hierarchy has increasingly emancipated itself from the hierarchy of strength and from assertion hierarchy (Bischof 2012). Thus, **humans are the most cooperative and potentially most unselfish primates**. Because humans can reflect on and communicate their judgment, that judgement turns out to be more differentiated than intuitive assessments within the hierarchy of competence.

High-ranking individuals receive more attention, they are "respected" – in humans often also with regard to the moral integrity expected from them. Therefore, high-ranking people try to increase

their prestige, for example by being caring and appreciative of others; this is a behavioural tendency that has become increasingly important in Europe as a result of the Enlightenment. However, prosocial empathy and caring can be inhibited by stressors. These can also be internal stressors, for example as a result of striving for rank and dominance.

Appreciation for a person radiates to the appreciating environment. In this sense, honors serve not only the honored person but also the honoring institution.

Self-worth, especially in adolescents, is dependent on the judgment of those whom one considers competent. As autonomy and competence increase, self-worth becomes increasingly independent of the judgment of others throughout life. The emotional prerequisite for the development of the sense of self-worth and the worth of others is the early childhood experience of having experienced oneself as lovable.

1.5.1 Power and hierarchy in modern organisations

Whereas in indigenous cultures high rank is usually associated with direct or even indirect reproductive advantages, this is hardly ever the case in industrial societies. Instead, as noted above, the question of the functionality of hierarchies in and for organisations and institutions comes to the fore. Due to their complexity, modern societies are dependent on individuals who make decisions and take responsibility for them in the sense of the division of labour, so that others can devote themselves to their tasks within a secure framework. To this end, individuals who are suitable in terms of their abilities must be empowered. **Since corresponding leadership positions are associated with a gain in autonomy and prestige, it is not out of the question that they are also sought by individuals who are not capable of doing so.**

Many strive for rank, influence and control and defend the position they have achieved at all costs. Klaus Rolinski (2017) emphasizes that those in power, whether in small businesses, in churches, companies, or world politics, and of different worldviews often put their need for autonomy, rank, influence and control first, thereby preventing, delaying, or losing sight of approaches to solutions to pending factual problems. **There is no satiation in the pursuit of power and appreciation (in contrast to satiation in hunger, thirst, and sexuality; Eibl-Eibesfeldt 1995) *3*.**

The absence of satiation can be explained by the evolutionary-biological context of origin; thus, a high rank originally increased one's own reproductive success as well as that of one's closer relatives. It is particularly harmful if a high-ranking position is taken by a person who does not have a healthy sense of self-esteem or who finds little fulfillment through core tasks of the profession. Then, as with other personality disorders, dysfunctionalities potentiate with increasing rank (Dammann 2007; Medicus 2019).

Power can also lead to a change in self-perception and promote overestimation of oneself; narcissism and the risk of feeling hurt or offended by others increase with overestimation of oneself (Haller 2013). **This development is often fostered by flattering feedback from submissive subordinates** (see McGuire et al. 1987). The fact that the team as a whole is better than any individual, including the leader, is then often no longer perceived. Thus, many high-ranking people no longer perceive the dependence of their successes on other people and develop their sphere of

power as if it were personal property and merit; the privileges associated with it can often no longer be legitimized by the function.

Even leaders who show appreciation and care run the risk of **regressing** to leadership styles based on self-assertion. This risk is due to the power-related personality changes, partly related to being overwhelmed by organisational and leadership weaknesses. At the team level, therefore, demonstrations of power in this context often manifest themselves in the belittling of employees, and at the same time many such employees feel frightened. Such demonstrations of power are experienced as demotivating and discouraging, sometimes traumatizing, and lead not only to personal suffering but also to operational and societal costs (e.g., Schwertfeger 2006).

Only a few powerful people are aware of these risks. **As a result, it is important to create regulations that counteract this. They can consist of controlling institutionalised power, training employees and limiting leadership periods.** Appreciative hierarchical leadership with openness to feedback is most likely to be realised in small teams of a dozen or so employees with a pluralistic and reflective atmosphere. The teams can then be creative and productive, and their members can develop themselves and the company in the sense of a "learning organisation."

Footnotes

1. In common marmosets, the "sterile" older siblings participate as brood care helpers. Their own fertility sets in as soon as they can establish a group themselves.

2. Appearances of politicians at catastrophes are mostly suitable for the media, but at the same time low-risk; partly they even hinder the real, more risky helpers.

3. In this context, note that children do not know saturation in the striving for autonomy either.

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