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Impact Factor: 4.428

Figurational Social and Cultural Sciences (IV)

Author Details: Jeroen Staring

Retired Dr. mult. Jeroen Staring taught mathematics at secondary schools in The Netherlands. His 2005 Medical Sciences dissertation describes the life, work, and technique of F. Matthias Alexander. In 2013 he successfully defended a second dissertation, on the early history of the NYC Bureau of Educational Experiments.

The author would like to acknowledge the assistance of biologist and paleontologist Dr. John de Vos, former Scientific Curator at Netherlands Centre for Biodiversity Naturalis in Leiden, Netherlands, in finding the correspondence between Eugene Dubois and Robert Broom and for its interpretation.

Abstract:
Since the 1980s, anatomists, paleoanthropologists, and other scientists, including figurational social and cultural scientists, as well as science writers, have commented on the finds of fossilized hominin bones. For example, C. Owen Lovejoy, Henry McHenry, John E. Pfeiffer and Nancy Makepeace Tanner extrapolated from such finds possible ways of living of, for example, Australopithecus afarensis individuals. Earlier anthropologists Paul Alsberg and Dieter Claessens already outlined hypotheses about the special place that early hominins occupied in the world about 4 to 2 million years ago. Ancestors of humans developed tool use and defended themselves against predators, attacked and expelled them. According to Alsberg and Claessens these hominins did not do this with their bodies, that is, for example, with large canines, or with strong, sharp claws, but by using objects that did not belong to their bodies, that were not (part of) their bodies: for example, sticks, branches and stones. Figurational sociologists Norbert Elias and Johan Goudsblom spoke (in this context of making and using tools) about 'making detours.' They actually linked up with what astronomer Anton Pannekoek wrote in 1945 about anthropogenesis, where so-called detours via detachment involved both 'detours in thinking' and 'detours in actions.'

Keywords: *Paul Alsberg (1883-1965); Dieter Claessens (1921-1997); Norbert Elias (1897-1990); Johan Goudsblom (1932-2020); Claude Owen Lovejoy (1943); Henry McHenry (1944); Hugh Miller (1891-1891); Anton Pannekoek (1873-1960); John E. Pfeiffer (1915-1999); Volker Rittner (1946); Nancy Makepeace Tanner (1933). Figurational sociology; Figurational social and cultural sciences; Körperausschaltungsprinzip (principle of body-liberation); Distanz als Prinzip (distance as principle); Distanzierung als Prinzip (distancing as principle).*

Introduction

In the previous two episodes of this article series, a central concept from the so-called 'Amsterdam School of Sociology' was discussed: the concept of *homo clausus* self-experience. As stated there, in his works Elias did not address an 'absolute' beginning of self-images and self-experiences people have developed. This statement applies to individual people, but it also applies to what he called "the hypothetical condition of absolute ignorance about the connections of happenings" in hominins:

> The image people have of themselves, their self-experience in other words, […] has its place within the trajectory of knowledge leading from the hypothetical condition of absolute ignorance about the connections of happenings tempered by fantasy images of such connections, in the direction towards

> the lessening of this ignorance and the growth of the reality-congruence of their symbols. (Elias, 1992, p. 71).

This fourth part of the series of articles will discuss some of Elias's ideas that he put forward in his book *Involvement and Detachment*, especially his ideas about 'detour via detachment' — related to hypotheses and theories regarding finds of fossilized remains of early *Australopithecus afarensis* since 1978 and *Australopithecus africanus* since 1924.

Australopithecus afarensis

It is logical that all the finds and discoveries of paleoanthropologists such as Richard Leakey, Allen Walker, Donald Johanson and many others since several decades prior to the turn of the century have led to changes in hypotheses about so-called 'Missing Links' in the family tree of 'humankind.' Many paleoanthropological theories and stories had to be discussed and modified. And at times rewritten. New discoveries led to entirely new questions being asked and to entirely new, revolutionary theories about prehistoric people being formulated — by paleoanthropologists themselves in, for example, professional journals, and by science journalists in popular scientific works, among others.

In 1982, American anthropologist Henry McHenry published an inventory of new theories about hominins. He pointed out that the founders of the theory of evolution stated that walking upright on two legs preceded increases in brain capacity and skull size in the evolutionary development of humans. Lamarck, Haeckel and also Darwin were of this opinion, but they could not prove their statements (McHenry, 1982, p. 151). In the 1970s, fossil discoveries provided evidence for this position of the 'founding fathers of the theory of evolution.' Fossilized remains of individuals of *Australopithecus afarensis* that Donald Johanson and his team found around Hadar, Ethiopia proved that hominins walked upright about three million years ago. However, the findings also proved that these hominins had a smaller skull size and therefore a smaller brain volume than you would expect based on existing theories. A series of fossilized footprints discovered by Mary Leakey also proved that hominins walked upright about three million years ago.

On the other hand, until the late 1970s, many evolutionists promulgated the theory that brain volume and skull size increases preceded upright gait (Pattison, 2020). According to the spokesmen of this theory, early hominins moved more and more from the trees to the ground several millions of years ago. In the beginning, these hominins would have moved as chimpanzees do today: walking more or less on their feet, but supported by the use of hands, on the knuckles of the joints between metacarpals and phalanges, and between first and second phalanges. Climatic changes in Africa would have provided the 'ecological pressures' for this mode of locomotion. In connection with the development of upright gait, brain capacity and skull size would have increased, and tool use would also have increased, because the forelimbs became more and more free for such useful use. Hominins would also have changed their diet: they were thought to evolve from vegetarian foragers to omnivorous hunters.

A whole range of evolutionists attributed human evolution to a vicious circle: more tool use, therefore larger brains, therefore more capacities to use and devise tools, *etc*. Hunting also placed demands on the intellectual abilities of hominins, as well as on their ability to collaborate. And the best prospects for survival were possessed by the best adapted, *i.e.* those who genetically passed on the conditions for larger brain size and bipedalism to their offspring. A selection of interrelated aspects would therefore have emerged in human evolution. The living on the ground; the increasing brain capacity and skull size; the recession of the snout region ; the 'release' of the front limbs for tool production and use; diet changes; anatomical-mechanical 'adaptations' of pelvis, legs and feet to upright walking and erect posture; living together in groups: this was the coherent package that evolutionists taught (see *Note 1*).

However, McHenry concluded in his overview article that such a package of interwoven, interrelated and mutually reinforcing aspects had not existed. *Australopithecus* individuals already walked upright, but

had a brain size comparable to that of a current chimpanzee. The dentition of individuals of *Australopithecus afarensis* shows a transitional phase from pongids to hominins, and the forelimbs of *Australopithecus afarensis* individuals show little similarity to our arms and hands. McHenry (1982, p. 163) stated that the "origin of hominid bipedalism may not have involved extraordinary events, but could have arisen as an energetically efficient mode of terrestrial locomotion for a small-bodied hominoid moving between arboreal feeding sites." Only with the appearance of *Homo habilis* would the increase in brain volume and skull size have become significant, and that occurred approximately one to two million years after the appearance of *Australopithecus*. McHenry hinted that the upright walking of *Australopithecus afarensis* individuals would not yet have been fully 'human.' Even though with this statement he rejected the central position of American anatomist and paleoanthropologist Owen Lovejoy (*Australopithecus afarensis* individuals walked just as well, if not better, upright than we do), McHenry nevertheless said that Lovejoy had a well-developed theory about the origin of upright gait and about the ways of living of *Australopithecus afarensis* individuals.

In an article in *Science*, Lovejoy (1981) had pointed out that *Australopithecus afarensis* individuals must have led a (fairly) monogamous way of living. In his theory, pair formation, for example, explains differences in body structure between male and female individuals. As is the case with primates, sexual dimorphism can be seen in *Australopithecus afarensis* anatomy. Variations in body shape and size between the two sexes were quite large. This would normally argue for a polygynous species, but Lovejoy (1981, p. 346) believed that the reduction of canine dimorphism, and its effective disappearance, in early hominins points to the assumption that the anatomy of *Australopithecus afarensis* is not an overall anatomy of bluffing, threatening, and fighting. Furthermore, there would have been a cross-sexual, and not just an intra-sexual, dimorphism of parasexual characteristics (such as differences in body hair, prominent penis in male individuals, and large breasts in female individuals). All these striking differences in body appearance between the sexes would have had the function of promoting pair formation. In Lovejoy's view, pair formation was necessary to contribute to a tendency to live longer in a situation that required a lot of time to collect food. Female individuals had to survive into old age in order to enable their children to survive until reproductive age in the event of long-term dependencies of children on the elderly. Also, the tendency to long-term lactation, as well as the tendency to bear only one child per pregnancy, and the tendency to longer periods between successive pregnancies, required female individuals to survive longer than in conditions where such developments did not occur. Pair formation, a certain division of labor between the sexes, and perhaps other factors, helped to increase the chances of survival of young individuals.

Pair formation and division of labor contributed in Lovejoy's theory to the development of upright walking, because carrying food from the places where it was found to the place of consumption (where mothers and children were) required more carrying instruments than only the teeth. Lovejoy essentially argued that female individuals with children became less mobile to be able to 'educate' their children better by paying more attention to them, but also to develop the tendency towards a higher number of children (see *Note 2*). Reduced mobility of female individuals with children also called on male individuals to contribute searching and transporting food. The forming of pairs within a group of hominins would keep (sexual) aggression and expressions of violence to a minimum.

> Introduce pair bonding into such a society, and social harmony can grow. Males can leave the group for short periods of time without forfeiting their chance for sexual representation in the next generation. Male parental care and food sharing become possible. As a result, the females can afford to become less mobile. (Lovejoy in Johanson & Edey, 1982, pp. 334-335).

Lovejoy spoke of a feedback mechanism. The question is of course whether a strict division of labor between the sexes was a necessary part of such a feedback mechanism. American anthropologist Tim White questioned Lovejoy's theory:

> What I don't entirely buy is that theory about bringing food back to females and young. You don't need it. I think that carrying objects, carrying children, carrying food was enough of an incentive for bipedalism. (White in Johanson & Edey, 1982, p. 340).

There will be speculation for some time about the reasons why hominins evolved bipedalism. Lovejoy's argument is that there will have been lower mobility of female individuals-with-children. Even in those times, newborns no longer had hand-like feet with more or less 'opposable' digits (big toes) that allowed them to cling tightly to their mothers, normally in everyday situations, or in case of danger, for example. That is, in many situations mothers and children had to cling to each other, with their hands, arms, legs and feet, normally when walking, or in extreme situations when faced with danger. Therefore they could not be too far apart. When children did not have hand-like feet, they could cling to their mothers only with their arms and hands. Compared to monkeys, for example, they were therefore more dependent on their mothers. Mothers had to care differently, perhaps more intensely, about their babies in such situations. Emotional bonds between mothers and children had to be stronger, in a certain sense, to compensate for this 'loss of possibilities for physical bonding' (in plastic terms). Of course, this process did not happen overnight.

Feminist anthropologists, for example American Sally Linton, argued that this carrying problem must have been one of the catalysts of tool use by hominins and humans. Linton imagined that women with children must have constructed carrying devices such as nets to transport food and children, comfortably (see *Note 3*). Nancy Makepeace Tanner and Adrienne Zihlman, two other American anthropologists, painted a similar picture and stated that women who carried small children in carrying instruments could easily search for food (see *Note 4*). Very generally speaking, Tanner and Zihlman argued that the first tools were not used for hunting, but for "*gathering* plants, eggs, honey, termites, ants and probably small burrowing animals" (Tanner & Zihlman in Leakey, 1981, p. 93). These first tools were very simple; for example sticks for digging out tubers or stones for cracking nuts.

Tanner, in her *On Becoming Human* (1981), paid explicit attention to the fact already mentioned: children who had to learn to walk on two legs remain longer directly dependent on their mother. Female *Australopithecus* individuals had to carry their small children themselves for several years. This is one of the reasons for long(er)term contacts between mothers and their children. For the children this had great advantages. They were cared for and protected for longer than their four-legged ancestors. They also had longer-term opportunities to learn from their mothers, including about tool use and the "social and ecological environment" (Tanner, 1981, p. 158).

What could appeal to many in Lovejoy's theory is the solidarity between male and female individuals when caring for children, and the high threshold for exclusive violence. Lovejoy also addressed the importance of living in a group, where individual members tolerate and support each other. Tanner stated similar tolerance existed, but from a different point of view. She argued that sexual selection must have been carried by the female individuals. They "must have chosen males fairly similar to themselves" (Tanner, 1981, p. 270). According to her, this sexual selection and natural selection were complementary in the process of change from *proto-Australopithecus* to *Australopithecus*.

Lovejoy had pointed out that cross-sexual development of parasexual signs had significance for pair formation. The tendency for external ovulation signals to disappear in the female individuals would also have contributed to epigamous differentiation within the larger group. To what extent these matters should be given much attention, as has already become apparent, remains an open question. In any case, any tendency toward epigamous differentiation and pair formation seemed to have had little negative effect on the overall group (in Lovejoy's theory).

Now, we should not imagine a community of hundreds of hominins when we talk about *Australopithecus afarensis*. Rather, we must imagine more or less well-defined groups of about ten to

twenty or perhaps thirty individuals. And within these relatively small groups, pair formation can have occurred to a certain measure as the most common way of interaction between male and female individuals. Moreover, these groups did not appear to have been too mobile when the food situation in one location was sufficient for the entire group for several days or longer. This would mean that moving on to a next location would not have occurred often. The labor differentiation between the sexes that Lovejoy presented was therefore probably not very extreme. Individual members of such groups of hominins did not reach old age. For *Australopithecus afarensis* we should think of a maximum age of twenty-five to perhaps thirty years. Lifelong pair formation therefore did not cover a large period of time. And perhaps the members of such groups changed partners at times, but were more or less 'loyal' to those partners for a certain, relatively extended period of time?

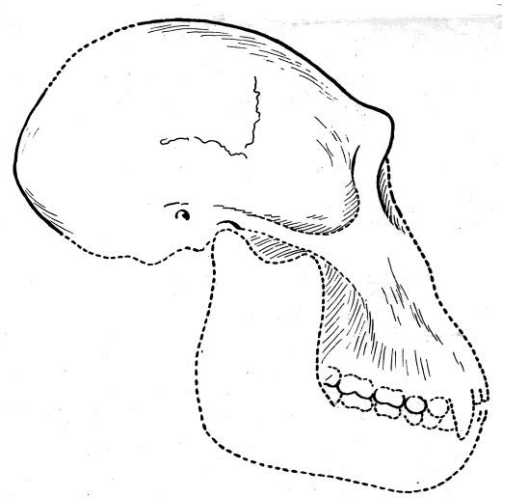
As mentioned, it was important that individuals within a group helped each other in caring for the young and could tolerate each other to a certain extent (reasonably) for a long time. In times of food scarcity, these properties must of course have been fully utilized. According to Lovejoy (1981, p. 348), such hominin societies would also develop strong emotional bonds between individual members of the groups. This would have contributed to the fact that male individuals continued to return to 'home base' with food in times of food scarcity. The mutual relationship over time between carrying food and carrying children with aids such as nets remains an interesting subject for discussion. Sally Linton assumes that women must have made the first carrying instruments, as they had to carry children who had more and more 'human' feet and less and less 'ape-like' grasping feet with more or less 'opposable' big toes.

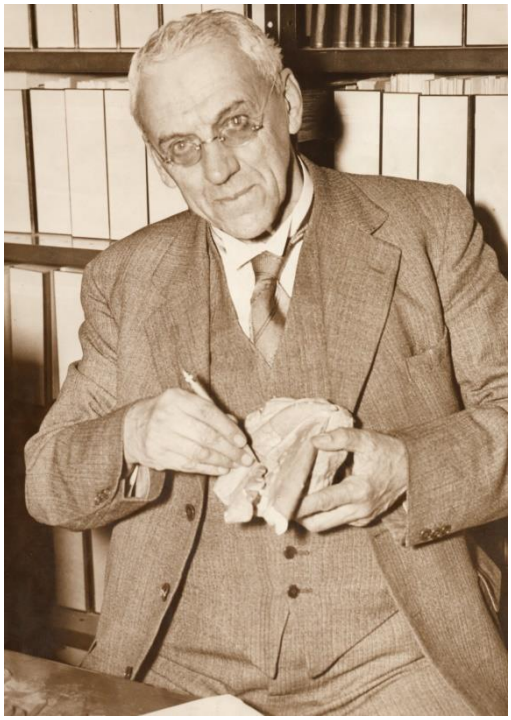
In the words of Dutch figurational sociologist Johan Goudsblom, there could already have been certain forms of 'detour behavior' that are associated with a pattern of "deferred gratification" (Goudsblom, 1984, p. 233; 1992, p. 18). After all, part of the food collected in such circumstances will have been consumed by the male group members on the spot, but another part served to satisfy others (*i.e.* the females group members and the little ones), and for themselves at later times, within the group. What we can then assume are tendencies of self-restraint and self-control, but also of certain planning and foresight as well as of certain social (group) pressures to self-compulsion.

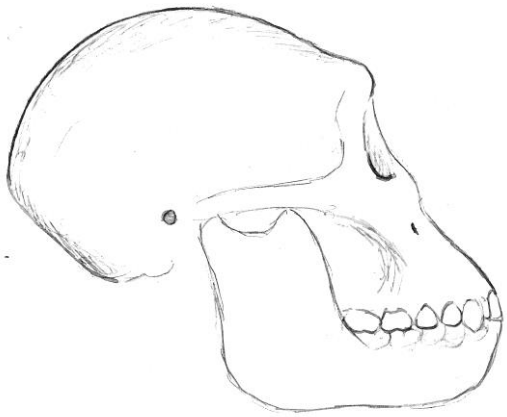
Feminist anthropologists are probably most right on this issue. They point to the fact that female individuals foraged relatively much food. This food included tubers, nuts, fruit, honey, eggs, termites, and army ants; in short, female individuals gathered, probably with the help of simple tools, an abundance of food for themselves, for their children and expectedly also for male individuals (Leakey, 1981, pp. 93-94). Here too, especially here, there must have been forms of 'detour behavior' (in Goudsblom's figurational sociologist terminology) that are associated with 'patterns of deferred gratification.'

However, there are still other very far-reaching roots of certain behavior consistent across such small societies of hominins. As Lovejoy also noted, but did not elaborate further, *Australopithecus afarensis* individuals lived together in (small) groups. One can think of these groups as defensive units in Elias's figurational sociological terminology. Within such units, certain social mechanisms are put into effect that differ from the mechanisms that occur under similar conditions among individuals who do not live in such groups. For example, it has been observed in groups of chimpanzees that older individuals, when confronted with, for example, an imitation lion, herd young individuals into a small space, while they themselves have to deal with 'the danger.' Instead of showing escape behavior, they inhibit strong impulses to do so and show bluffing and threatening behavior towards 'the enemy.' Sometimes they grab sticks and tree branches to hit the ground dangerously, or to hurl these objects as projectiles. In his book *Our Kind*, American anthropologist Marvin Harris (1990) referred to these and other forms of tool use by chimpanzees, while the Dutch filmmaker Bert Haanstra (1984) has made beautiful film footage of such group behavior towards a stuffed lion in the zoo in Arnhem, Netherlands. Haanstra essentially repeated an experiment previously done by Dutch ethologist Adriaan Kortlandt to observe the reactions of chimpanzees. We can conclude here that strong impulses to escape and flee are inhibited by all members of such groups, and that more or less

coordinated and organized defensive behavior, as well as deterring, attacking and fighting behavior, is displayed in group context. Groups then function as defense units, and perhaps also as deter and attack units, with a certain differentiation in behavior occurring within such groups.







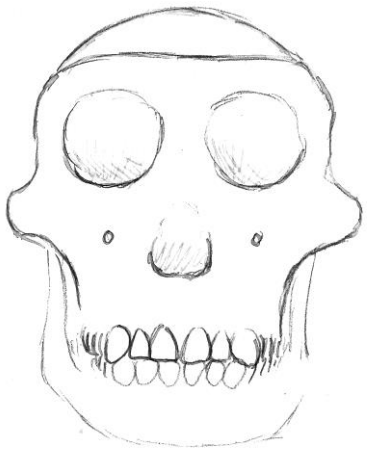


Figure 1 **(top left): Drawing (side view) of skull of** ***Australopithecus transvaalensis*** **from reconstruction drawing by Robert Broom in September 19, 1936,** ***Illustrated London News*** **(Broom, 1936a, p. 477; compare Broom's reconstruction drawing in Broom, 1936b,** ***Fig. 4*****, p. 487).** ***Figure 2 (top right): Robert*** **Broom. (Author's personal collection).** ***Figure 3 (*****bottom left): Reconstruction drawing by Robert Broom (side view) of skull of** ***Australopithecus transvaalensis*** **in letter dated October 21, 1936, written by Broom to Eugene Dubois (Broom, 1936d).** ***Figure 4*** **(bottom right): Reconstruction drawing by Robert Broom (front view) of skull of** ***Australopithecus transvaalensis*** **in letter dated October 21, 1936, written by Broom to Eugene Dubois (Broom, 1936d).**

All individuals within such groups appear to conform to the social compulsion to suppress flight impulses and conform to the more or less coordinated and organized behavior of the entire group. What is important here is that male individuals do not use their teeth or their hands in this type of defending, deterring, attacking and fighting behavior. They would do this, for example, when aggressive and/or defensive actions take place *within* the group. In the example outlined above, on the other hand, they take sticks and branches and throw them in the direction of 'the enemy.' One can no longer speak of defending and/or deterring and/or attacking *without* distance, but must then speak of defending and/or deterring and/or attacking *at a distance*. After all, all actions are aimed at maintaining and increasing distance from 'the enemy.' This happens, as already mentioned, in group contexts. If such a transformation of flight impulses into defense and/or deter and/or attack behavior *at a distance* (to put it as simply as possible) also became established within groups of (*proto*-) *Australopithecus* individuals approximately four to three million years ago, the need for an anatomy to fight without distance would also decrease — such as fearsome canines or tearing claws, especially when, for example, aggression within the group was and remained at a low level. German anthropologist Dieter Claessens spoke about a "*Körperausschaltungsprinzip*" in his book *Instinkt, Psyche, Geltung* from 1970, following the example of the German physician and anthropologist Paul Alsberg in his book *Das Menschheitsrätsel* from 1922 — of which a completely revised edition was published in 1937, and a reissue with an introduction by Dieter Claessens in 1975 (as *Der Ausbruch aus dem Gefängnis*; see *Note 5*). A more or less trunkated edition translated into English was published in 1970 as *In Quest of Man*, in which "*Körperausschaltungsprinzip*" was translated as "principle of body-liberation." Here is Alsberg's definition in English:

> The principle of animal evolution is that of compulsory adaptation by means of the body: *the principle of body-compulsion*. The principle of human evolution is that of freeing Man from the compulsion of body-adaptation by means of artificial tools; *the principle of body-liberation*. (Alsberg, 1970, p. 38).

Since *Australopithecus afarensis* individuals already walked upright; lived in small groups; had a small canine dimorphism; and, according to Lovejoy, did not have an overall anatomy of bluffing, threatening, and fighting, we can safely imagine that individuals of this species 'were already evolving through' the "*Körperausschaltungsprinzip*," this principle of body-liberation.

Short Intermezzo: The 1936 Dubois-Broom Correspondence

Interestingly in this context, neither Lovejoy (Lovejoy 1981, 1988; Lovejoy in Johanson & Edey, 1982), nor McHenry (1982) referred to Raymond Dart or Robert Broom, who previously had made discoveries of fossilized remains of *Australopithecus* individuals in South Africa since 1924. In this respect it is fascinating to see how Scottish-South African physician and paleontologist/paleoanthropologist Robert Broom (see *Figure 2*) at the end of 1936 described the dentition and other anatomical features of his 1936 find of hominin fossils to Dutch anatomist, paleoanthropologist and geologist Eugene Dubois, discoverer of *Pithecanthropus erectus* — later renamed *Homo erectus* (see Dubois, 1894, 1896, 1899). The 1936 correspondence is in the library of the Naturalis Museum, Leiden, The Netherlands. It concerns Broom's discovery of fossilized remains of what he suggested upon examination was an *Australopithecus transvaalensis* individual, in July of that year, reported by him on September 19, 1936, in *Nature* as well as in *The Illustrated London News* (see Broom, 1936a, 1936b). Broom concluded in *Nature*,

> This discovery shows that we had in South Africa during Pleistocene times large non-forest living anthropoids—not very closely allied to either the chimpanzee or the gorilla […]. They also show a number of tyupical human characters not met with in any of the living anthropoids. (Broom, 1936a, p. 488).

On September 19, 1936 Dubois made a request for casts of Broom's find at Sterkfontein, South Africa to Australian-British anatomist, anthropologist and Egyptologist Grafton Elliot Smith. The latter forwarded Dubois' letter to Broom, who at the time worked at the Transvaal Museum in Pretoria, South

Africa and who sent a detailed reply to Dubois on October 7, 1936, explaining he needed more time to reconstruct the find and make casts of it. Yet Broom already mentioned a number of remarkable aspects of his find:

> […] you will see that we have nearly the complete skull apart from the mandibles of which of yet we have no trace. I am in hopes I may find a mandible in the rock yet.[…]. You will see before this [= letter Broom to Dubois, Oct. 7, 1936; J.S.] arrives a short account of the dentition in "Nature" [= Broom, 1936e; J.S.]. The teeth are amazingly human. The canine is small and there is a diastema between C + I^2 [= Canine and Incisor 2; J.S.]. Pm^3 + pm^4 + m^1 [= premolar 3 + premolar 4 + molar 1; J.S.] are typically human. (Broom, 1936c).

Broom wrote he probably had "much of a hind leg of another skeleton" and that if that leg belonged "to the same animal then the ape was very short-legged like the chimpanzee and probably did not walk quite erect;" that "the animal is immature;" and that "the arm is probably rather long." He added,

> One was discovered but has been stolen and I have been unable to trace it. I have however a good part of a hand with the metacarpals rather long — longer than in man. (Broom, 1936c).

Two weeks later, on October 21, Broom sent a follow-up letter to Dubois, accompanied by two reconstruction drawings of the skull from the find (see *Figure 4* and *Figure 5*). Referring to these reconstruction drawings, Broom categorically wrote that the "teeth might readily be ancestral to Pithecanthropus" (Broom, 1936d). Three days later, *Nature* published a letter to the editor written by Broom discussing the dentition of his find, showing in a reconstruction drawing that the upper dental arch was not U-shaped but parabolic-shaped and that the canines were small. Broom concluded that the dentition shows that the "Sterkfontein ape at least is not a chimpanzee, and that it approaches man in quite a number of characters" (Broom, 1936e).

In the meantime it should be clear, partly because Broom made reconstruction drawings in which the upper canines were large during the first reports of his find (Broom, 1936ab; see *Figure 1*), but already in his second letter to Dubois he had sent a reconstruction drawing in which the upper canines are small and human-like (Broom 1936d; see *Figure 3, Figure 4*), that he was convinced that he was dealing with an early hominin with already very pronounced hominin characteristics.

Dubois did not respond to Broom's various comments about the dentition of *Australopithecus transvaalensis* in his draft of a response letter dated November 9 that year. He did, however, thank Broom for the reconstruction drawings in both his letters, stating, "As I now see it, Australopithecus must have been a form which was nearly related to the ancestor of ~~the~~ Pithecanthropus" (Dubois, 1936).

Broom later concluded in a letter to the editor published by *Nature* in February 1937 that his find — 'The Sterkfontein Ape' — is "fairly comparable in size with the chimpanzee, but with teeth which in my opinion resemble those of man much more than they do those of any of the living anthropoids" (Broom, 1937a).

Subsequently, in another 1937 letter to the editor of *Nature*, Broom discussed the discovery on September 15, 1937 of a lower third molar of an *Australopithecus transvaalensis* individual (Broom, 1937b). And then, on May 7, 1938 he announced in a letter to the editor of *Nature* that he had found a "fairly well-preserved lower canine" of an *Australopithecus transvaalensis* individual at the end of April 1937: "It is like the human lower canine, but the face of the crown is in *Australopithecus* directed more outwards than forwards. It bears no close resemblance to that of the chimpanzee, either in size or shape" (Broom, 1938a, p. 828). He added,

> Then last week, I made a much more important discovery—a nearly complete right maxilla in good condition and with the second incisor, the canine, the first premolar and first molar in position. The

> premolar and the molar agree so closely with those of the type as to leave no doubt that the jaw is of the same species—*Australopithecus transvaalensis*.
>
> The new specimen is of supreme importance as it shows that the canine is not much more enlarged than in man and that it is ground down to the same level as the first premolar and the second incisor; and further, that the second incisor, which is smaller than in man, is quite close up to the canine. (Broom, 1938a, pp. 828-829).

Below this text was a reconstruction drawing of the front view of the skull of *Australopithecus transvaalensis* by Broom that corresponds to the reconstruction drawing he had sent to Dubois in October 1936 (see *Figure 4*). In November 1939 he again announced new discoveries in *Nature*, this time not about the dentition, but among other things about a right humerus (of a South African Pleistocene anthropoid) that was virtually human "in all its characters" and differed greatly from a chimpanzee or gorilla humerus (Broom, 1939). In July 1941, then, he recapitulated various South African finds; their reconstruction and interpretations; and the criticisms thereof, starting with the discovery of a skull of *Australopithecus africanus* by Raymond Dart in 1924 near Taung and also his own finds at Sterkfontein, as well as in Kromdraai (Broom, 1941).

Alsberg and Claessens: *Körperausschaltungsprinzip*

As stated above, since *Australopithecus afarensis* individuals already walked upright; lived in small groups; had small canines; and, according to Lovejoy, did not have an overall anatomy of bluffing, threatening, and fighting, we can safely imagine that individuals of this species, 'were already evolving through' Alsberg's "*Körperausschaltungsprinzip*," the principle of body-liberation. Moreover, we can reasonably assume that they have indeed exhibited more or less defensive and/or deter and/or attack behavior by using 'tools' towards, for example, group-threatening animals.

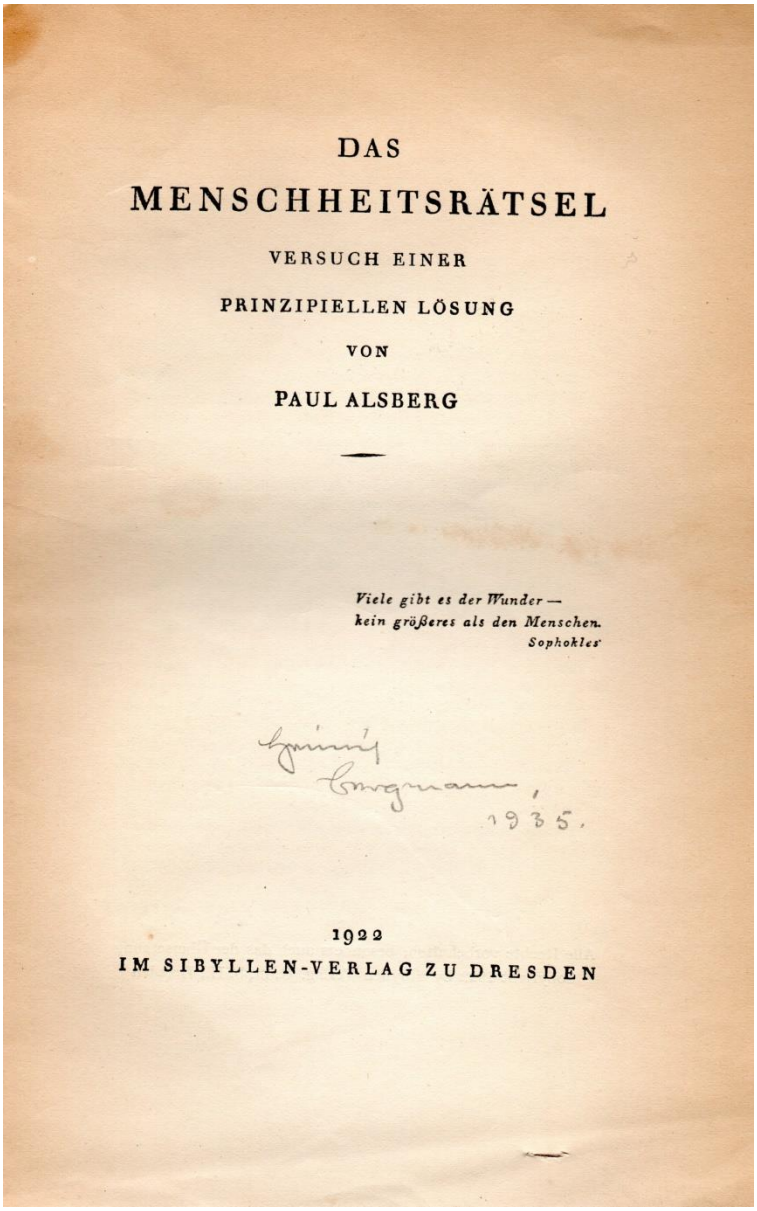
Alsberg referred to and discussed the discoveries of Dubois and Dart in his writings (see, for example, Alsberg, 1925, 1934, 1937 1970, 1975). His firm conviction regarding Dubois' discovery, for example, based on the argument in his 1922 book *Das Menschheitsrätsel* (see *Figure 5*) was very clear: "Pithec. erectus is a human (in the word's own meaning) and it should therefore no longer be considered a Pithecanthropus, but rather as Homo Trinilis based on where it was found" (Alsberg, 1925, p. 170; translation J.S.). And in the expanded version of *Das Menschheitsrätsel* from 1937, he extensively discussed the dentition of early hominins in chapters 12, 13, 16, 18, 20 and 21, paying specific attention to their canines. Furthermore, Alsberg wholeheartedly agreed with Dart and Broom's assessments of *Australopithecus* fossils they had discovered in South Africa.

> As long as the Taung skull was a solitary find, its immaturity clearly stood in the way of any definite classification, and the biological method, sponsored in this book, and which strongly pointed to its human nature, was far from being accepted by morphologists. So, when in my paper "The Taungs Puzzle" [Alsberg, 1934; J.S.] I challenged the Ape-theory, nobody would listen. Even after the discovery of many more skeletal remains of young and adult specimens with jaws and teeth of strikingly human appearance and also with hips, legs, and arms of clearly human structure and proportions which made the upright gait of the Taung species a certainty, the Ape-theory still held its ground. Here again, as in the Pithecanthropus case, the ignominiously small brain was taken as definite evidence against human classification — although a smaller brain than that of Java Man should have been expected in a species living some considerable time before the other, and to that extent nearer their anthropoid ancestry. (Alsberg, 1970, p. 153).

Tanner, who did refer to Dart and Broom too, stated that female hominin individuals often used tools such as sticks to gather food. In her book she included an image of a hairy female *Australopithecus* individual (I mean: an individual with fur) carrying a child on her back and a stick in her hand (Tanner, 1981, p. 198). Claessens wrote,

> Once, instead of the possible escape, there is a fight again, *but at a distance*, *i.e*. an attack taken *with extra-corporeal means* (where in addition, 'natural' organs such as hands and hind legs capable of standing, as well as binocular vision, *i.e.* the prerequisites for throwing and aiming, *i.e*. hitting, must be present), this new, non-corporeal fighting principle will be *retained*. (Claessens, 1970, p. 84; translation J.S.).

Tanner implied that it is quite possible that female *Australopithecus* individuals were more adept at handling sticks (and perhaps stones and other objects?) than male individuals. I largely agree with her; the primacy of tool use lies with women, not men. But where lies the origin of extracorporeal defense and/or deter and/or attack behavior? Also with female individuals? They may also have been the driving force behind the defense and/or deter and/or attack processes that mainly took place 'out of body.'



DAS

MENSCHHEITSRÄTSEL

VERSUCH EINER

PRINZIPIELLEN LÖSUNG

VON

PAUL ALSBERG

Viele gibt es der Wunder —
kein größeres als den Menschen.
Sophokles

1922

IM SIBYLLEN-VERLAG ZU DRESDEN

***Figure 5*: Title page of the 1922 edition of Paul Alsberg's *Das Menschheitsrätsel*: *Versuch einer prinzipiellen Lösung.* (Author's personal collection).**

Claessens (see the quote above) did indeed speak of a 'fighting principle' in his book. From the above it appears that we should better speak of a defense and fighting principle, or, if one wishes, of a defense, deter and fighting principle. Anyway, it may be clear that the "*Körperausschaltungsprinzip*" (the principle of body-liberation) in hominins and humans is diametrically opposed to the

"*Körperanpassungsprinzip*" (the principle of body-compulsion) in animals. Creating, or maintaining, and possibly increasing, physical distance between dangers and members of the group of hominin individuals presupposes, but cannot therefore be seen separately from, a certain psychological distance, stated Claessens in his book *Das Konkrete und das Abstrakte*:

> The escape being, which Alsberg addresses as a precursor of man, must have 'understood' the event, the liberation from the compulsion to flee […]. It was able to *stabilize* this experience - be it over a long period of time - because it acted in a group context. *Group connection and new stabilization tendencies must be seen together to explain human development*. (Claessens, 1980, p. 63; translation J.S.).

In this context, Claessens (1980, p. 63) also spoke of "*Distanz als Prinzip*" (distance as principle) and of "*Distanzierung als Prinzip*" (distancing as principle). In this distancing, Claessens explained, both physical and psychological, from predators, for example, the entire group of individuals distances itself from their instinctive compulsion to flee, and thus in fact develops the roots of distancing mechanisms in every member of the group, physically, socially, and mentally. Here we can detect roots of behavior of self-compulsion and self-control, of individuals within groups, while again noting that this is most closely related to social control. Obviously, these processes cannot be viewed and studied separated from physical, physiological processes, which together form the *praxis* of behavior. (*If* they could be studied, because we are really just speculating here.) This is how the American science author John Pfeiffer put it graphically:

> So evolution added more mnemons, more nerve cells, and the brain grew like a benign tumor at the head end of the spinal cord. Of course, it was far more than a mere increase in gross size. Subtle changes were taking place in internal organization — especially in the nerve circuitry required to inhibit or control the not-doing of things, continuing a long-established trend in primate evolution. (Pfeiffer, 1978, p. 131).

The reward for the self-restraint and self-control of each individual member of such groups in difficult situations must have been sweet: greater socio-psychological cohesion was cultivated in the group, assuming that the physical, physiological and genetic conditions for it to get cultivated had been developed in the course of the evolution. This cohesion probably was primarily a merit of the female individuals. They passed on the use of tools (in a cultural sense) to their children; they 'established' insights into the different uses of the same tools (*e.g.* sticks or stones) in different situations in their children; and thus, they passed on their knowledge to the individuals who formed the group. They taught their children when they were young to gather food using tools. But they also actively contributed to circumstances where certain self-controls and self-restraints of members of such groups of hominins became 'established' and were used in crisis situations such as confrontations with predators.

Cleassens (1970, pp. 93-98; 1980, 60ff) addressed a theorema of British-born philosopher Hugh Miller (1964) that states that the formation of such groups of hominin individuals makes adaptation possible without physical specialization (see *Note 6*). Living together in groups prevents a whole series of physical specializations that might offer non-group-living individuals greater chances of survival in certain situations but makes the species of non-group-living individuals a very specialized species (*i.e.*, easily endangered species). In the above we have already seen that the development and 'establishment' of social pressures to inhibit the 'instinctive' compulsion to flee must have been one of the reasons that in *Australopithecus* individuals' hands and teeth (canines) were not specialized as defense and/or deter and/or attack organs. Social climates were created within groups, as it were, and groups functioned as a kind of 'social wombs.' In Claessens' terminology, such groups were ecological niches; there reigned, as it were, a kind of "*Insolationsprinzip*," an insulation principle. Groups, as it were, protected individuals from outside selective pressures, but also created opportunities within the groups, since specialization under outside pressures was almost completely excluded and selection for group-enhancing traits could occur among the individuals living in groups. These primordial hominin groups can also be seen as small, pacified spaces (in Norbert

Elias' terminology), within which certain modes of behavior can emerge and develop and become 'established.'

> The body exclusion principle provides the distance that makes 'openness' accessible; the insulation principle ensures this openness against relapse, 'stabilizes' it. From a slightly different perspective: The principle of body-liberation tends to develop rationality. The insulation principle tends towards differentiation *and* tradition, i.e. cooperatively developed, the group stabilizing life techniques in order to avoid the loss of openness. […]. 'Group' — within the framework of the principle of body-liberation — *prevents* the re-emergence of instinct, makes it unnecessary and can make it unnecessary forever by protecting against that adaptive physical specialization that would allow the individual […] to survive, but would also allow the individual reach dead ends. (Claessens, 1970, p. 97; translation J.S.).

Distancing from 'instinctive' pressures at the individual psycho-physical level; distancing from dangers at the collective socio-psycho-physical level; distancing from selective ecological pressures for 'physical adaptation' at the biological-evolutionary level; self-restraint, self-control at individual and collective levels; control of certain individual and certain collective fears; living in groups and the resulting social pressures to self-control: it is one complex of coherent, mutually stimulating, inseparable interdependent factors.

Claessens also discussed a number of processes of a social nature that must have unfolded within the 'social womb' of groups of hominins:

> The more intensive mutual perception and the associated more intensive self-presentation pressure leads to more differentiated and firmly formed, but open to reflection, images of the other and, through the 'reciprocity of perspectives,' to clearer ideas of oneself, of 'the own person.' Since the eyes of the entire group rest on each individual in ongoing, intimate cooperation, the existing feeling of individuality is linked to a group ego that becomes a controlling of motivation. (Claessens, 1980, p. 68; translation J.S.).

In this passage, Claessens pointed to processes of development of 'individuality' of members of 'the group' in direct connection with processes of influencing and interdependencies between them, and to their link to a kind of group atmosphere, or group ego. In other words: "Inevitable self-identity and group identity are therefore inextricably linked in this context" (Claessens, 1980, p. 73; translation J.S.).

Many evocative words can be spent on these developments, I do not want to go into them in depth, but it is important here to realize that coexistence in groups by hominins several millions of years ago very gradually, very slowly, led to groups of individuals with certain self-identities. These groups lived largely shielded from external pressures for physical adaptation and physical specialization. This happened because living together in groups functioned as a kind of catalyst for social coercions and social compulsions. These coercions and compulsions were produced within and by the living together of group members and were to some extent transformed into self-constraints and self-restraints by the individual group members. Internalized social coercions and compulsions *i.e.*, self-constraints and self-restraints, acted in such ways that individual members' behavior became more or less reliable, predictable and calculable for other group members. This meant, among other things, that the atmospheres of such hominin groups were pacified to a certain extent. This again should have benefited the "*Innenklima*" (Claessens, 1980, p. 75), the 'inner climate,' of such groups. One can therefore imagine social processes within these groups that became more complex in nature, and at the same time became more closely knit together by the individuals themselves. Elias also emphasized these assumptions:

> There is strong reason to believe that, precisely in the evolution of hominids who possess no inborn weapons like claws or powerful teeth, the forming of groups played a central role in the struggle for survival with other species or with other groups of the same species. (Elias, 1987, p. 153).

This quote from Elias' *Involvement and Detachment*, from a text that has been added as an *appendix* to the main text, concerns hypotheses about 'the great evolution,' the evolution from subatomic particles to atoms, to small and large molecules, to unicellular and multicellular organisms, from there to more differentiated and integrated organisms, and from there to highly differentiated and integrated organisms, including humans. Elias expressed his hypotheses in his familiar way, namely using his terminology about interacting and interdependent processes in which we can observe an increasingly complex order. Such a description is of course somewhat contradictory to the words that Claessens and Alsberg used in formulating their hypotheses. Their terminology is rather reifying, to put it in Elias' judgment. They spoke of 'principles' in the evolutionary development of hominin groups and hominin psyches as if these 'principles' were separate from the same beings. In any case, Claessens spoke very philosophically, and that may be why it seems reifying, about numerous principles that would have operated at different levels of integration, differentiation and coordination. To move from Claessens' or from Alsberg's terminology to a description of human evolution in which process characters are emphasized in each phase requires a lot of inductive 'imagination' and skills. For example, Alsberg showed in his works his ability to imagine social processes that could have originated in hominins several millions of years ago, but when he put his insights into words on paper, it turned out that he assumed sharp dividing lines in the particular human evolution he described. It then appears that he was telling that 'Man' separated 'himself' from the 'animal kingdom' when 'he' started to 'apply' the "*Körperausschaltungsprinzip*." But, to put it bluntly, we know from Haanstra's film material, for example, that chimpanzees also 'apply' this 'principle,' to put it in Alsberg's terminology. Chimpanzees live in groups, in defense, deter and attack units. They throw sticks and tree branches at 'the enemy' in defense. Chimpanzees therefore use extra-corporeal means to defend the group to which they belong. Chimpanzees also pick at termite burrows with thin sticks or thin blades to encourage the protein-rich termites to move in defense of their burrow and attack clinging to the wriggling sticks and blades (Koops, Furuichi & Hashimoto, 2015). Chimpanzees have been observed scooping water using leaves and individuals of some chimpanzee groups crack open nuts using wooden hammer-like tools or stones. Chimpanzees therefore use tools to gather food. They must learn their using of tools. Chimpanzees defend themselves against enemy animals with extra-corporeal means, so at a distance, and they also gather part of their food with the help of extra-bodily means, and this is also done, in a certain sense, at a distance. If so, we must ask ourselves whether chimpanzees are equal to humans, perhaps they are humans, since they 'apply' the "*Menschheitsprinzip*," the 'Mankind principle,' in defense, deter and attack, as well as in gathering food? So, things are not as strict as Alsberg had put it (compare Alsberg, 1970, p. 75).

Furthermore, a process-based description of the history of human evolution requires us to be able to imagine ourselves in times and circumstances where our knowledge and insight about almost everything is not present at all. Alsberg and Claessens undoubtedly had this ability, but the choice of terms in their works may show that they wanted to intervene in debates of philosophers rather than in the debates of sociologists, historians and anthropologists.

Elias: *Ability, Capacity*

Involvement and Detachment, the work of Elias from which I have already quoted, contains a long introduction, in which Elias described the biological and social aspects of the growth processes that hominins engaged in since about four million years ago. These aspects, Elias emphasized, cannot and should not be viewed and studied as completely separate development processes, even if we can only formulate hypotheses about them. After all, we will never know for sure whether what we assume about the earliest times in the history of human evolution actually happened. It seems very important to Elias that the biological and social, and therefore psychological, aspects of human evolution should not be presented as completely separate entities. Therefore, to illustrate his thesis, he discussed the meaning of the genesis of 'tool use,' because the "transition to the use and the gradual improvement of human-made artefacts as tools resulted in the early days from the interlocking and blending of two distinct types of process, a biological

and a social process" (Elias, 1987, p. *xxxiv*). He stated that biologists have drawn attention to several characteristics of the biological constitution of human beings, such as bipedalism, nimble and flexible hands, and the development of the face and bifocal vision, and added,

> Without the ability to co-ordinate these various distinguishing characteristics of biological organization, or in other words without the capacity for an integrating activity at a higher level, physical details such as flexible hands or bifocal vision would be useless. (Elias, 1987, p. *xxxiii*).

Elias accused biologists of not emphasizing a model that shows different levels of integration and coordination in connection with each other. He pointed out that anyone who makes a tool must be able to coordinate his or her fingers in their function and activities. And without a coordinating ability/capacity of the brain, creating a tool through the use of flexible dexterous fingers would be impossible.

Although Elias' work draws our attention to psycho-physical mechanisms, it remains a somewhat clumsy description, in fact a list of all kinds of abilities. What he further called "integrating activity at a higher level" remains shrouded in mystery. We can guess what he meant, but there is no evidence in his work that he understood such actions existentially, in his own daily *praxis*. That is why Elias's list of abilities does not suffice. On paper it looks interesting, but the use of his terminology does not show that Elias understood anything more than other sociologists who in slightly different wording present the same summary of bare facts. A little later he suddenly spoke in *Involvement and Detachment* about "the biological learning capacity," but where this capacity originated remains unclear. In fact, there is not such a big difference between talking about "principle" (Alsberg and Claessens) and talking about "ability" (Elias). Anyway, Elias then stated,

> Above all, tool-making requires the capacity for distancing oneself from the situation of the movement, for remembering a past and for anticipating a possible future situation where the work of one's hands, the weapon or tool, might be of use. All these operations are essentials of the variety of self-regulation described here as detachment. In order to produce a tool, human beings have indeed to detach themselves to some extent from their immediate internal or external situation. If they are hungry, making a tool or a weapon does not still their hunger. They take the trouble of making the instrument in the hope that it will make it easier to fill their empty stomachs at some later time. For the time being, making the artefact requires that they restrain their hunger. Producing a tool means in fact making a detour which, for the moment, leads away from the desired goal of drive satisfaction. Humans make the detour of producing tools in the hope that it will eventually lead to a safer, fuller, perhaps even greater satisfaction of the restrained drive than that which they can expect if the desired goal of drive satisfaction is pursued directly. (Elias,1987, p. *xxxv*).

Here too, Elias introduced a "capacity" that apparently only needs to be assumed to make them reality. In any case, he did not outline the history of the capacities he discussed. Capacities and abilities suddenly fall out of the sky, and in fact form similar dividing lines in the history of human evolution that Alsberg introduced in his work. They suddenly separate humans from animals, because their histories are not explained, nor their development. Elias also did not explain the nature of the intended detours that lead away from desired goals of drive satisfaction for a shorter or longer period of time (the length of time apparently plays no role whatsoever). For example, on what was the variant of self-regulation mentioned by Elias, *i.e.*, the aforementioned "distancing," based? And how was this possible on a material level in the brains of those involved? Elias left these questions open. That is why we turn for (part of) the answers to *Anthropogenesis*, a treatise on "the origins of man" by Anton Pannekoek.

Pannekoek: *Detour in Thinking, Detour in Action*

Dutch mathematician and astronomer Anton Pannekoek provided the following definition of the nature of detours of human thinking and human actions:

> In humans, the reaction to external influences is different. The tool slides between his body and the outside world to which he must work back. Instead of directly using his body organs, taking the food between the jaws, grabbing the prey by his hands, defending himself with his fists or fleeing from danger, he takes up the tool, the weapon; and with it, like a new being, equipped with a new organ, he processes the food and attacks the prey or the enemy. His actions take a new path; then the thought must also take a new path. Action takes a detour, no longer directly to the object but to the tool, and from there, first to the object. So thinking also has to take a detour too. The spontaneous impulse to act that belongs to the toolless condition must be restrained; therefore the immediately formed representation series of fight or flight suppressed, and replaced by another which leads to the tool, the weapon. Thus one of the above-mentioned characteristics of human thinking, the detour character, emerges as a necessary consequence of the use of tools. […]. The chain of brain processes also had to change. The cerebral cortex must produce a different motor response to the same stimulus from the senses. From the sensory centers the stimulus may not pass to the motor centers in the previous manner; new connections must form for new coordinations with other cortex fields. New nerve wires must grow. The stimulus must follow a different path, must connect with memory images of the tool, the weapon, and along this detour affect the motor centers. At the same time, the old transition must be slowed down, the old connection must be taken out of use - in case of panic it comes into operation again - and the result of the new coordination must often be suspended, *i.e*. stopped. (Pannekoek, 1945, pp. 33-34; translation J.S.).

In other words, the structure and functioning of the hominin brain had to be evolved and to evolve to be organized in such a way that the inhibition of impulses to seek immediate satisfaction of natural needs could be stimulated, and that somehow there were opportunities to form new chains of mutually stimulating nerve cells. This was apparently already true in group-dwelling *Australopithecus* individuals. Up to about four million years ago, evolutionary processes must have taken place that stimulated the development of brain material that could function at such a level, even though the volume of the cerebrum was not yet very large. John Pfeiffer also pointed this out in his *The Emergence of Man*:

> The evolving cortex expressed another important trend, a greater and greater stress on inhibition, on the art of not doing things. This is implicit in the multiplicity of alternatives confronting advanced species. Choosing a course of action demands the ruling out of many possibilities. It also demands time, deliberation and delay. Life becomes less automatic and depends to a greater extent than ever before on learning, and learning is an inevitable consequence of complexity in evolution. It became increasingly important among higher species whose environments offered a wider and wider range of choices. (Pfeiffer, 1978, p. 32).

It seems very likely that something like this evolved in animals that live in groups, and which are not ‘creatures of flight,’ but ‘creatures of defense.’ For example, gazelles are group-dwelling animals, but when faced with danger they flee from danger. Elephants are also group-dwelling animals. When danger threatens, the young are herded together, and this internal group is surrounded by the adults that have and keep their eyes focused on the danger(s). The adults defend the group, possibly by attacking ‘the enemy.’ Elephants, unlike gazelles, are not creatures of flight, but creatures of defense. Hominins living in groups were also most likely not creatures of flight, but creatures of defense. And the previous paragraph already showed that, precisely because they lived together in groups, they had to comply within the group with social constraints from other group members. In hominins living in groups, precisely because the individuals were thus exposed to social coercions from other group members, inhibition of the impulses to respond directly to stimuli must have occurred at the social level as well as at brain level. At the same time, there must have been opportunities at social and brain levels to allow new ways for new behaviors to emerge. This therefore concerns the ability to (more or less consciously) inhibit impulses that lead to instinctive, direct, immediate responses to sensory stimuli, as well as the ability to create and expand new routes of mutually stimulating nerve cells within the existing structure of the central nervous system.

So, we can speak here on a physical-neurological level with Claessens (1980, p. 63) about "*Distanzierung als Prinzip*" (distancing as principle), or with Elias (1987, p. *xxxvi*) about "detour via detachment." Of course, a factor here must also have been that hominins could somehow 'store' images, virtual images that is, of past events, in their brain, and that this fund of virtual images, or virtual representations, could certainly be called upon at critical moments, or that at such moments this fund could 'release' the virtual representations that were most similar to the current situation in the chain of interaction between sensory sensation and ultimate impulses to act.

Pannekoek put it as follows:

> In humans too, life is about maintaining oneself as part of nature as a whole through interaction with the whole. In humans too, action, taken as a whole, is ultimately determined by the totality of sensations, images and representations; thinking is a tool for practical action. However, there is no longer the simple direct path from sense impression to action; instead, the collected representations form a network of divergent and converging paths. There are many links between sensation and action; several chains of connected representations spontaneously form, each previous one evoking the next. In the process of conscious thought they are connected in ordered series.
>
> This means that from perception to action, thinking takes a detour. […]. [The] observed predator or prey animal is associated with representations of other experiences that are useful here, such as obtaining or preparing a weapon, sneaking around in preparation, or laying a trap. The detour in thinking corresponds to the detour in the actions themselves. Between the originally felt bodily need and the later act of satisfaction there are a series of actions that lead indirectly to the goal. They are preceded by the series of representations that consecutively indicate the path and allow it to be viewed in its entirety before it is practically taken. In the further development of humanity, these detours also become increasingly wider and more complicated due to the increasingly complex structure of society. Moreover, there is no one detour; there are many. (Pannekoek, 1945, p. 14; translation J.S.).

Hominins that lived together in groups had to all probability, like chimpanzees and bonobos in the present, such a brain structure, and it functioned in such ways, that memories of past events could be directly linked to sensory perception processes of social constraints by other group members. Elias (1987, p. *xxxiv*) called this "the biological capacity for learning." In fact, it is inherent in the organization and functions of the brain that social constraints could be transformed into self-constraints, into self-regulations. The "social fund of human knowledge" (Elias, 1987, p. *xxxv*) was in fact not a fund in those times that could also be separated from the direct fund managers (as is now possible in books, films or in other databases), but was based on functioning in virtually every group member's neuro-physiological processes of creating, maintaining and exploiting detours of the instinctive-direct paths between the senses on the one hand and motor skills on the other. The most important condition for this was 'the ability' (so to speak) of the brain to more or less consciously inhibit impulses. The difference between hominins and other animals lies in the paths' openness and scope.

> The animal also often follows a non-direct path in its behavior; we speak of the trick in some predators. Here, however, the detour, the sneaking around, hiding and lurking becomes a regular habit of life imprinted by the struggle for existence. There is also a certain choice with the animal, in the moment and place of action. But this choice is limited within a small range, due to the narrowness of the body organs that prescribe a certain way of life. These special characteristics of human mental life are therefore also present in small traces in animals. (Pannekoek, 1945, p. 16; translation J.S.).

In this quote, Pannekoek pointed out that animals also have the brain's ability to more or less consciously inhibit impulses. They also make use of this ability, as evidenced by the example of predators.

Goudsblom: *Detour Behavior, Deferred Gratification*

Well, in whatever terminology expressed, the more or less conscious inhibition of impulses to strive for direct satisfaction of natural needs must have occurred at the social, individual-psychological and therefore

also at the neuro-physiological level, and to a greater extent, and more complex, as the social complexity of the groups of hominin individuals increased. This also applies as tool production and use increased within such groups. The gradual expansion of social coercion (to self-restraint) and the gradual expansion of tool use and of the production of human artefacts, meant that at the neuro-physiological level, impulses for direct gratification of natural desires had to be inhibited, and that greater and more complex ranges of 'detours via distancing' had to be created and maintained in the brains of those involved. Social control and self-control gradually increased as the complexity within hominin communities increased. This of course occurred in step with the expansion of the arsenal of tools and their use and production.

We are talking here about processes that spanned several million years. Scientists from different disciplines have discussed these processes, each in their own terminology, and each with their own emphasis, but often based on the same hypotheses. Elias may have acted as if others overlook all kinds of things and always miss the mark in reifying ways, but the above shows that this was a very exaggerated idea of his. Very often he appears to have written in almost literally the same terminology as those he criticized. His description of the 'detour via detachment' character of human behavior may serve as an example. And although he recognized that at times "a physio-psychological and sociopsychological double-bind" (Elias, 1987, p. 48) existed, or exists, he entirely omitted a description of this aspect in his hypotheses about the early stages of human evolution. Instead, he introduced a multitude of biological capacities that apparently serve to camouflage the lack of descriptions of such "physio-psychological and sociopsychological double-bind" processes he was referring to.

Elias's hypotheses remain vague, and the double-bind processes that he did describe are, as it were, disconnected from the hominins and humans about whom he formulated his hypotheses (see *Note 7*). This also applies to the hypotheses of Goudsblom about a special form of tool: fire. He stated he promoted "connections between the different [scientific; J.S.] specialisms" and that it is attractive "to look for such connections" (Goudsblom, 1984, p. 228), criticizing others for rarely referring to literature from different disciplines (*Ibid*., p. 239). In recognizing his indebtedness to Elias, referring to the German terms *Fremdzwang* (social coercion) and *Selbstzwang* (self-coercion), Goudsblom stated,

> With a paraphrase of Norbert Elias, we can say that fire unintentionally and inevitably emanates a certain *Fremdzwang* to which people direct themselves with commandments and prohibitions and with forms of *Selbstzwang*. Control of fire is accompanied by social control and self-control; in this respect its development can be regarded as a "civilizing process." (Goudsblom, 1984, p. 228; translation J.S.).

Goudsblom also pointed out that when tending a fire one can speak of a form of "detour behavior," or a pattern of "deferred gratification:"

> Detour behavior or deferred gratification occurs when people tailor their behavior to a future goal, and do not respond to any deviant impulses aimed at more immediate gratification. (Goudsblom, 1984, p. 233; translation J.S.).

Note that Goudsblom expressed the same ideas as Elias, who also wrote about approximately the same as Pannekoek before him. It therefore seems exaggerated to conduct polemics against scientists from other disciplines than sociology, if one does not take the trouble to pick up their works and study them (see *Note 8*). Goudsblom further argued that it is remarkable that *Homo erectus* individuals learned to control their fears of fire in step with learning to control fire itself. This is another example of a "double-bind process" in Eliasian terminology. Control over part of 'nature' is related to the control of humans (hominins) over themselves. In other words, it is an example of a "double-bind process" that is part of the triad of controls that Elias mentioned in his works: nature control, social control and self-control. These three forms of control were described by Goudsblom regarding control of fire in their mutually reinforcing interdependencies — first in his Dutch series of articles on the genesis of use of fire by hominins and humans, later in his book *Fire and Civilization*.

Goudsblom stated,

> The expansion of control over fire therefore simultaneously involved a expansion of the control of human individuals over themselves, over their own feelings of anxiety. Increasing control over fire also meant an expansion of control in other respects. As humans learned to use fire more, their chances of living increased. (Goudsblom, 1984, p. 233; translation J.S.).

Goudsblom pointed out the roasting of meat, the techniques for doing this, and the transfer of knowledge of these techniques to others, also touching on the use of fire as a weapon in the struggle for existence, and he pointed out the fact that humans have a monopoly on controlling fire. It is also important to note that hominins and humans created a kind of neo-niches by being able to take possession of caves and caverns with the help of fire. Distancing mechanisms are also used when using fire, and it is necessary, for example, to inhibit certain fears and strong escape impulses in order to achieve a certain active use of fire. In the words of Goudsblom, "As with every human skill, in tending a fire a certain measure of self-control was part and parcel of technical control" (1992, p. 20). The active use of fire also requires planning, a certain view of longer-term use, but also a certain social organization for the continuous monitoring and care of fires. Fire use calls for fire control, and fire control goes hand in hand with self-management of the fire controller, but also with social pressures for self-control. Dealing with fire requires direction and control over the use of the fire controller's body. Fire control also made other forms of hunting possible, but the creation and maintenance of fire was also a prerequisite for preparing the loot in certain ways. Fire control also contributed to 'group formation.' Goudsblom discussed heat and light from fires, development and appropriation of land by using fire, and also fire as an aid in material processing. He even mentioned fire as a gift. Fire generates fire, and it may have served as a gift or a means of exchange in relationships between groups of hominins and humans.

The story about the many consequences of fire control has been told many times, perhaps in different words, but almost always to emphasize the same things, also in so-called prehistoric fiction (Ruddick, 2009). However, as a figurational sociologist, Goudsblom emphasized the social aspects of this development, stating that the "process of domestication" of fire "from the very first steps towards active use of fire […] is difficult to imagine anything other than as a social process" (1984, 236; translation J.S.).

Goudsblom (1984, 1985, 1992) declared in his articles in Dutch in *De Gids* and in English in his book *Fire and Civilization* (1992) that the "domestication process" of fire involves mutually reinforcing conditions, analytically distinguishable into *pre*- and *post*-conditions. The *post*conditions have been described by him from a figurational sociological perspective (of which I have given a brief, incomplete summary above). The *pre*conditions namely: walking upright, the flexible hands, the highly developed brains and the long learning time spent in groups were treated rather cursorily by him. In his work on the human use of fire, this means that the interactions between *pre*- and *post*-conditions, to which he referred, remain undiscussed. And just like Elias's work, Goudsblom's articles and book do not exactly provide insight into the previously mentioned "physio-psychological and socio-psychological double-bind" processes.

With the above in mind, what Goudsblom really described about the history of using fire must be seen as a story of an acceleration in a much, much longer process of anthropogenesis, in which biological and social processes were closely intertwined. Early hominins learned to make and use tools. This was accompanied by, and interdependent with, among other things, evolvements in their central nervous system, and also with coordination processes of, among other things, eyes and hands. In somewhat later hominin individuals, we can assume other accelerations in the process of anthropogenesis because they manufactured more sophisticated tools (archeological finds show this), developed some form of language, and probably also engaged in carrion theft from predators. In much later hominin individuals, we may assume a fairly complex use of language, but certainly carrion stealing. An even more refined tool production and use can

be proven through finds of artefacts, and the development of hunting and fishing techniques can be assumed (see *Note 9*).

The upcoming installment of this series begins with a brief reflection on the main criticisms leveled against Elias's writings in the 1980s. Yet those attacks were never concerned with the *homo clausus* self-experience problem. Attention is then paid to a certain prevailing 'fear of biologisms' while the development of tool use by hominins is viewed through the lens of haptonomy.

Notes

1. The average total brain volume in *Australopithecus afarensis* individuals was around 400 cc. The average adult body stature of individuals was about 150 cm for the males and 105 cm for the females. The average total brain volume in *Homo erectus* individuals was around 950 cc. For sexual dimorphism in *Homo erectus*, see Villmoare, Hatala, & William Jungers, 2019.

2. Compare Lovejoy in Johanson & Edey 1982, pp. 332-334. Compare also Aiello & Dean, 2002; Johanson & Shreeve, 1989; Johanson & Wong, 2009; Kingdon, 2003; Tague & Lovejoy, 1986; de Vos, 2008; Wood Jones, 1916, 1918.

3. Compare Pfeiffer, 1978; Wang & Crompton, 2004.

4. Compare Leakey & Lewin ,1981, pp. 109-110; 118-119.

5. The German bacteriologist Paul Alsberg published several medical articles before 1922, when the first edition of his anthropological *Das Menschheitsrätsel* appeared (see for example: Alsberg, 1910, 1913). After 1922 he published the following anthropologically oriented texts: '*Die Stellung des Menschen in der Natur*' (in 1923); '*Zur Wesensbestimmung der Vernunft*' (in 1924); '*Pithecanthropus erectus — Homo Trinilis. Eine Untersuchung*' (in 1925); '*Entwicklungslehre und Metaphysik*' (in 1927); '*Zur Phänomenologie der Vernunft*' (in 1929); and '*The Taungs puzzle. A biological essay*' (in 1934, after his flight from the Nazis to Britain). Consult also: Dobzhansky, 1971; von Kalckreuth (2017); Lysemose, 2012; MacConaill, 1970; Novak, 1971; Voss, 2019.

Note that German sociologist Volker Rittner wrote as early as the 1970s, "Alsberg's considerations would be extremely fruitful if they were applied to the civilization process in Elias's sense, i.e. if they were materialized historically" (Rittner, 1975, p. 226; translation J.S.).

6. Compare Blomert, 1991, pp. 119-121.

7. Compare Blomert, 1991, p. 60.

8. Goudsblom did not know Pannekoek's work until I submitted it to him for study in 1988 (compare Staring, 1988, 1995). And although he had been studying literature on fire for years, he said he was unfamiliar with a whole range of German works that specifically addressed the subject of his study object. These were books by German anatomists/paleoanthropologists, with references to and notes on fire use by humans/hominins. Works by various Dutch anatomists/paleoanthropologists that contained such references and comments were also unknown to him. Some of the literature I showed to Goudsblom was poisoned with Nazi ideology, and that could of course have been a reason to refrain from referring to it altogether if one had known about it. However, Goudsblom assured me that he had not studied the works submitted.

9. Compare Claessens, 1970, 1980. Another text from Alsberg connects here:

> When we swing a hammer to drive a nail into the wall, this is clearly a bodily function. Yet this function is neither the hammer itself, nor does it create the hammer. The hammer is already in existence and ready for use, and our bodily exertion only serves to operate the hammer, namely, to put its potential power into actual work. The analogy goes even further. Hand and arm suggest themselves as the natural and original organs for working the hammer. Still, as it is only for operating the tool that we avail ourselves of the function of these organs, the same purpose may be achieved by other means, even mechanical ones. Likewise the speech-organs suggest themselves as the natural and original organs for operating the words. But here again the same purpose may be achieved by other means; and in point of fact, we can operate the words as well by our hands, such as by

> writing, or by the deaf-and-dumb gesticulating signs, or by no organ function at all but by mechanical means, such as printing. [...]. Any organ-function being inseparately attached to its special bodily organ, it would not be possible for a function to be passed on to another person. Language, however, has to be "learnt" — that is, acquired from others as a ready- made device of expression. A child, therefore, in spite of his normally developed and hence normally functioning speech organs, would not learn to speak at all if there were not somebody to impart Language to him (Alsberg, 1970, pp. 52-53).

In fact, Alsberg had already — based on his *Körperausschaltungsprinzip* philosophy in his writings — extensively and in depth discussed the core of the arguments that Lovejoy, McHenry and others put forward in the 1980s after discoveries of *Australopithecus afarensis* fossils.

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