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ABSTRACT. In his concept of an anthropological physiology, F.J.J. Buytendijk has tried to lay down the theoretical and scientific foundations for an anthropologically-oriented medicine. The aim of anthropological physiology is to demonstrate, empirically, what being specifically human is in the most elementary physiological functions. This article contains a sketch of Buytendijk’s life and work, an overview of his philosophical-anthropological presuppositions, an outline of his idea of an anthropological physiology and medicine, and a discussion of some epistemological and methodological problems. It is demonstrated that Buytendijk’s design of an anthropological physiology is fragmentary and programmatic and that his methodology offers few points of contact for specific anthropological experimental research.

Notwithstanding, it is argued that Buytendijk’s description of the subjective, animated body forms a pre-eminent point of reference for all research in physiology and psychology in which the specific human aspect is not ignored beforehand.

Key words: anthropological medicine, body, F.J.J. Buytendijk, person, phenomenology, philosophical anthropology, philosophy of medicine, physiology, subjectivity

1. INTRODUCTION

F.J.J. Buytendijk is the most remarkable representative of the anthropological movement in medicine in the Netherlands. He worked on the border between the fields of science (biology, physiology, psychology) and philosophy (existential phenomenology). He adopted the idea of an anthropologically-oriented medicine from German physicians like V. von Weizsäcker, V. von Gebsattel, E. Straus, and the Swiss psychiatrist L. Binswanger. His philosophical orientation is most indebted to the founding fathers of philosophical anthropology, M. Scheler and H. Plessner, and to the French philosopher M. Merleau-Ponty.

In this article I mainly focus on Buytendijk’s concept of an anthropological physiology in which he has tried to lay down the theoretical and scientific foundations of an anthropologically-oriented medicine.
Buylendijk takes as a starting-point the idea of the human being as a union of body and mind. His intention is to demonstrate, empirically, what being specifically human is in the most elementary physiological functions. Following Von Weizsäcker, his purpose is “to introduce the subject into physiology.” By this Buylendijk means that both internal and external stimuli do not work according to their physico-chemical characteristics, but according to their meaning for the person.

After a sketch of Buylendijk’s life and work I will present an overview of his philosophical-anthropological presuppositions. Subsequently, I discuss his idea of anthropological medicine and physiology. Finally, I shall deal with some epistemological and methodological problems concerning the concept of an anthropological physiology. The appendix contains some text-fragments from his most important work *Prolegomena To An Anthropological Physiology*.1

2. F.J.J. BUYLENDIJK: LIFE AND WORK

F.J.J. Buylendijk (1887–1974) was born in Breda, in the south of the Netherlands. He studied medicine at the University of Amsterdam, but, from the very beginning, showed an interest in philosophy. After finishing his medical studies, he specialized in physiology. During a period of four years he worked in the laboratories of the famous physiologists of that time, such as C.S. Sherrington, J.L. Langley, A.V. Hill, M. Verworn and Th. W. Engelmann. In the first years of his scientific career he mainly published articles concerning chemical electrophysiology, for example, the metabolic changes in various invertebrates and cold-blooded animals. In 1914 he was appointed a reader in biology and in 1919 professor of physiology at the (protestant) Free University of Amsterdam.

Buylendijk’s doctoral thesis, *Proeven over gewoontevorming bij dieren*2 demonstrates his shift of interest: from physical chemistry and electrophysiology, which focused on detailed aspects of animal life, to animal psychology. He became more and more interested in the behavior of the whole animal, especially in patterns of instinctive behavior and their modification by learning. While criticizing Watsonian behaviorism he maintained that animal behavior cannot be explained by stimulus-response action patterns alone. Animal behavior possesses *meaning*; it has its center in a *subject* by which it is animated. Within a short period of time Buylendijk became known as a leading European proponent of the scientific approach to animal behavior.3

In 1925 Buylendijk was appointed professor of physiology at Groningen
University. His inaugural address, *Over het verstaan der levensverschijnselen*, already contains some important elements of his later concept of anthropological physiology. He emphasizes the advantages of the phenomenological method of understanding the phenomena of life over the method of causal explanation. His interpretation of phenomenology in these years is derived mainly from M. Scheler. Buytendijk is particularly inspired by Scheler's application of the phenomenological method to various empirical disciplines. In the 1920s and 1930s Buytendijk increasingly occupied himself with general theoretical problems of animal and human behavior. As a result of this theoretical preoccupation, from 1936 onwards he seldom performed any scientific experiments himself. Everyday experience and knowledge obtained from scientific research remains a solid foundation for his theoretical reflexions. His best known phenomenological writings cover a wide range of topics, such as youthfulness, rest, play and movement.

Buytendijk wrote *Over de pijn* while he was held hostage by the Gestapo. This book is about cultural-philosophical and anthropological aspects of "*homo patiens*." Buytendijk criticized the overrating of positivistic medical knowledge connected with the development of the natural sciences and medical technology. In his view, pain is neither only a physiological process, nor a mere feeling or sensation. He emphatically raises the question of the "meaning and essence" of pain. Having pain and suffering are primarily to be seen as modes of being. The existential meaning of such personalized pain can be found in the personal answer to it. In Buytendijk's view, this answer is preferably the answer of "surrender."

In his *Algemene theorie der menselijke houding en beweging* Buytendijk tries to bridge the gap between psychological and physiological approaches to posture and movement. He criticizes a purely scientific view of human (and animal) movement and pleas for a functional approach which gives attention to the meaning of human (and animal) behavior. Behavior is indifferent to the distinction between physical and mental. One must study behavior as something that lies beyond the two disciplines of physiology and psychology. Human and animal behavior cannot be studied by separating the physical and the mental.

A considerable part of *Algemene theorie* consists of a critique of the "mechanistic" explanations of human and animal behavior which dominated the neurophysiology of that time. He criticized, for example, the reflex-theory of Sherrington, Pawlov and others. According to Buytendijk, human and animal movement is to be seen as self-movement. The study of self-movement requires a clear concept of "function." Contemporary neurophysiology investigates only how parts of the organism function, whereas it is the functioning of the whole organism that needs to be under-
stood. Buytendijk's criticism of the purely scientific approach to physiology anticipates his concept of anthropological physiology. *Algemene theorie* shows the influence that people such as Von Weizsäcker had on Buytendijk. For example, Buytendijk borrowed Von Weizsäcker's concept of a "cycle of structure" ("Gestaltrikreis") as the cyclical unity of perception and movement.9

*Algemene theorie* has been – and still is – a most relevant philosophical work in the movement sciences. It is precisely in this context that one may speak of a revival of interest in Buytendijk during the last two decades. In the "motor-action-controversy," a discussion between the "action systems theory" (an ecological approach of perception and action) and the "motor systems theory" (a model based on the assumption of centrally-induced motorprograms), the importance of Buytendijk's view has been recognized as a fruitful starting point. The concept of action in the "action approach" is to a large extent identical with Buytendijk's concept of function.10

Buytendijk started out as a life-scientist and has always remained one. However, he moved gradually from physiology, biology and animal psychology to human psychology and philosophical anthropology. Psychology may be considered the center of his many interests. The methodological link between all these interests has been his commitment to phenomenology.11 In 1946 he was appointed professor of general and theoretical psychology at the University of Utrecht. He also had visiting appointments in theoretical and comparative psychology at the Universities of Nijmegen and Louvain (Belgium). He became known as a psychologist through his numerous existential-phenomenological studies on human behavior.12

During his time in Utrecht — after being "converted" to phenomenology by Scheler in the 1920s — Buytendijk became increasingly aware of the significance of Husserl's writings, especially his early ones, to psychology. Buytendijk began to view phenomenology as the most effective, if not the only, possible approach to an understanding of life and of man and his world. This did not mean, however, that he fully endorsed Husserl's view of phenomenology. Actually, his own phenomenological method had nothing in common with Husserl's late notion of phenomenology as transcendental philosophy.

"Encounter" becomes the central notion of Buytendijk's entire phenomenological-psychological enterprise in which he is much influenced by Binswanger. *Rencontre, Encounter, Begegnung*13 is the title of the book compiled by and offered to him by his friends, colleagues and pupils on the occasion of his retirement from his Utrecht chair in 1957. In "Zur Phänomenologie der Begegnung"14 Buytendijk explained his position with respect to phenomenology (Husserl, Heidegger), existentialism (Marcel,
Sartre, Merleau-Ponty) and Binswanger’s “Daseinsanalyse.” Buytendijk agreed with Sartre, that an existential-anthropological psychology has to begin with the supposition that there is a common source of a human, the world, body and mind. However, he disagreed, when Sartre followed Husserl in stating that the transcendental and constitutive consciousness is the source of all knowledge and being. According to Buytendijk, it is neither Husserl’s transcendental consciousness, nor Sartre’s “consciousness of a witness” ("conscience témoin"), but Merleau-Ponty’s “consciousness of engagement” ("conscience engagée") and Marcel’s “being situated” ("être-en-situation") which form the foundation of a phenomenology of encounter.

After his retirement from the Utrecht and Nijmegen chairs Buytendijk continued to be fascinated by the theoretical aspects of the scientific field where his career started: physiology. The fruit of this fascination was shown in his *opus magnum*, Prolegomena to an Anthropological Physiology. This book contains (1) theoretical considerations about physiology, (2) empirical physiological data concerning (2a) various specifically human “modes of being” like being-tired, being-hungry, being-thirsty and (2b) sensomotoric and vegetative regulations, for instance, of posture, respiration and circulation. Prolegomena is not easy to read. The same basic ideas are formulated again and again in various philosophical terms, embellished with a lot of quotations in English, German and French. In what follows I shall focus mainly on Prolegomena.

3. PHILOSOPHICAL-ANTHROPOLOGICAL PRESUPPOSITIONS

3.1. Specific Humanness

Buytendijk fully supports the notion of an anthropological medicine which he calls “specifically human” or “real human” medicine. Therefore, the key question is: what makes medicine anthropological, what is “specifically human”?

As to the notion of “specific humanness,” Scheler distinguishes between two kinds of concepts of the human being, the one being empirical-biological, the other philosophical. The first is a natural-systematic notion in which the human being - as part of the natural kingdom - is described according to his or her specific biological characteristics: for example, the so-called extra-uterine first year of life (Portmann), the upright posture, the naked skin, the frontal position of the eyes. The second is a so-called essential notion ("Wesensbegriff") of the human being which in Scheler’s
philosophical anthropology implies that a person as a spiritual being has a special position ("Sonderstellung") in the universe which is totally different from that of any animal.

Buytendijk does not always make a clear distinction between these two notions, but most of the time "specific humanness" refers to the latter notion of the human being. Before 1940 Buytendijk had been influenced by Scheler's anthropology, especially his opposition of spirit ("Geist") and life ("Leben"). In Prolegomena, however, it is not Scheler's anthropology, but French existential phenomenology which inspires Buytendijk while working out his view on human existence. Buytendijk writes:

By specific humanness we do not understand [...] consciousness, but the manifestation of a way of existence, which during the entire course of life and under all circumstances is characterized by a bodily-founded, indissoluble relation to the world in which one lives and access to which is primarily gained through the body proper. This "life-world" (Lebenswelt) [...] is no less specifically human than the body and the person.17

From this tentative reference to the fundamental characteristics of human existence it is evident that we do not limit specific humanness to so-called mental life, the intellect or reflective consciousness. Thinking, like the absolutely-untinking and unnoticed relation to the outside world, to one's own bodiliness, to the spatiotemporal continuity and the articulation of existence, as well as the dependence and freedom with respect to natural and unnatural factors, are exceptional in man in comparison with the species of animals.18

These quotations clearly illustrate Buytendijk's criticism of Cartesian thinking, i.e. of the assumption of a metaphysical difference between "conscious" and "bodily" phenomena and of the overrating of human (reflective) consciousness and mental life. According to Buytendijk, an indissoluble relationship exists between the person, consciousness, body and world. Buytendijk considers specific humanness as a way of subjective being, a way of existence, a way of being-in-the-world. The phenomenological notion of "subject" plays a crucial role in his anthropology. Humans and animals are subjects, albeit in a totally different way. A human is a spiritual being, a "historical idea" in the terms of Merleau-Ponty, not merely a natural species like an animal. There is a big difference between the animal's natural environment and a person's mental and cultural world.

According to Buytendijk, other peoples' subjectivity is directly "perceived." He rejects the idea of subjectivity as derived by analogy. It does not happen that, when we see expressions or movements of another person, we are able to "conclude" the other person's subjectivity by analogy with our own experiences. We not only recognize movements, etc. as functions, but we also immediately comprehend a movement (as a function) with a meaning. In other words, we perceive individual human beings and animals as "subjects," as "centers of knowledge and tendencies." Quoting Von
Weizsäcker, Buytendijk states: "Life appears wherever something moves itself, i.e. through intuited subjectivity ('angeschaute Subjektivität')."\(^{19}\)

Closely related to the notion of subjectivity is the concept of intentionality. Here I confine myself to Buytendijk's idea of "functioning intentionality."\(^{20}\) This concept constitutes the basis of his idea of physiogenesis. In the section on physiology, I shall deal with the way in which Buytendijk relates both concepts to each other.

In Husserl's early writings the term "intentionality" refers mainly to consciousness. Husserl's later mention of "functioning intentionality" ("mitfungierende Intentionalit"ät")\(^{21}\) marks a tentative, but most relevant, turn in phenomenology. Other phenomenologists, like Marcel, Sartre and especially Merleau-Ponty, have worked out Husserl's very idea: humans are oriented towards the world not only in/as consciousness, but also in their whole being. Merleau-Ponty adopts Husserl's idea of "functioning intentionality" and calls it "operative intentionality" ("intentionalité latente" or "intentionalité opérante").\(^{22}\) Operative intentionality is characteristic of prereflexive life and forms the basis of the conscious "act-intentionality" ("Akt-intentionalität"). In accordance with Husserl's later works, Buytendijk distinguishes between a conscious, thematic intentionality and an unconscious functioning intentionality. By analogy he makes a distinction between a personal, conscious subjectivity on the one hand and a prepersonal, unconscious subjectivity on the other.

3.2. The Psychophysical Problem

Buytendijk has always given full attention to the problem of the relationship between body and soul, matter and mind, the physical and the mental. Under the influence of his Christian (protestant) background, his philosophical–biological publications dating from 1912–1925 exhibited "solutions" to this problem which conformed to the dualism of matter and mind, of body and soul. Buytendijk's search for a new philosophical foundation for biology, physiology and animal psychology, which began around 1925, was mainly influenced by Aristotelian-Thomistic natural philosophy as well as phenomenology.\(^{23}\)

Starting about 1945, Merleau-Ponty plays a central role in Buytendijk's thoughts about the psychophysical problem. It needs to be said, however, that Merleau-Ponty owes much to Buytendijk. He adopts many of the empirical findings of Buytendijk and others, for instance Goldstein and Von Weizsäcker.\(^{24}\) He shares their criticism of objectivist and elementaristic approaches to physiology and psychology, but radicalizes their existential–anthropological intentions. He shows convincingly that their
theoretical framework can be broadened to a general theory of bodiliness and action.\textsuperscript{25} Around 1945 the roles reverse. From that point on Buytendijk gratefully adopts Merleau-Ponty’s way of thinking in order to formulate his own view on humans and their world in existential–phenomenological terms. From a philosophical point of view Merleau-Ponty has gone from being Buytendijk’s pupil to being his teacher.\textsuperscript{26}

Buytendijk may be considered an eclectic thinker. In \textit{Prolegomena} he formulates the psychophysical problem in Merleau-Ponty’s terminology; however, he does not hesitate to use Aristotelian, Schelerian and Plessnerian concepts too. One could argue that these are different approaches which – philosophically speaking – are not (totally) compatible with one another. However, that is not what really concerns Buytendijk. His primary interest is related to the integrity of human reality, to a human as a person who is neither exclusively physical nor mental. He tries to elucidate a notion of the human being as a unity, preceding the body–mind dichotomy. A consistent philosophical formulation with respect to concepts like body, soul, mind, etc. seems to be a matter of secondary importance to him.

As previously stated, Buytendijk rejects Descartes’ dichotomy of body and mind. That is to say, it is not Descartes’ metaphysics which interests him, but the traces left by it in biology, psychology, psychiatry and medicine. It is not the metaphysics of Descartes \textit{per se} which attracts Buytendijk’s criticism, but the way of doing scientific research in the wake of Descartes’ dualistic presuppositions. He agrees with Binswanger when he calls Cartesianism “the vicious cancer” of modern philosophy and psychology.\textsuperscript{27}

This does not mean, however, that Buytendijk has “overcome” Cartesian dualism. Like Merleau-Ponty, he advocates another dualistic opposition, i.e. between the body-subject and the person-subject, albeit that this distinction is far less radical than Descartes’ dichotomy of two separate substances. Speaking in terms of “monism” or “dualism” is problematic, insofar as Merleau-Ponty’s and Buytendijk’s view of the human being is concerned. Both authors do not pretend to give a conceptual “solution” of the psychophysical problem. On the contrary, Buytendijk considers the psychophysical problem an unsolvable mystery, a problem which one has to live with. He is fully aware of the evidence of our prescientific experience of ourselves and of others as body and mind, aware of “the psychosomatic paradox, the enigma of our duality, which is nevertheless a unity,” to “the riddle of our human, psychosomatic dual unit.”\textsuperscript{28} According to Buytendijk, the only thing we can demonstrate is an “actual correlation” or a “coinciding correspondence” \textit{(Auersperg)} between body and mind. He writes:
The most essential characteristic of man is existing in the world as polar unity of a mental and bodily subjectivity which we have elucidated further, guided by the explanation of Merleau-Ponty. "This characteristic places all physiological facts in an extensive and specifically-human context." The psychophysical problem is insoluble for reflective thinking, but in the (co-)execution of human existence the polar unity of bodily and personal subjectivity manifests itself as an original being-directed toward the human world.

In the section on anthropological physiology I shall deal with the question of whether and how the relationship between body and mind can be demonstrated empirically.

3.3. Bodiliness

"'Bodiliness' is one of the most important themes of continental philosophy," Strasser writes about the contributions made by the phenomenological movement to the hermeneutics of human bodiliness. Buytendijk's insights concerning the human body must be seen against this philosophical background.

Buytendijk adopts the distinction made by Scheler and other phenomenologists between the objective thing-body ("Körper") and the subjective lived-body ("Leib"). The objective body is a complicated structure, an instrument, and as such the object of scientific anatomy and physiology. The lived-body is the body from which one cannot be separated, the body, which one is and has at the same time (Marcel). Merleau-Ponty's notion of the body as a subject ("le corps-sujet") is the foundation of Buytendijk's anthropological physiology. Merleau-Ponty's theory of the human body can be summarized as follows.

First, the lived body is an instrument of generalized and latent knowledge. It has its own knowledge of the world. This implies the existence of a "tacit cogito," functioning without conscious control. The foundation of the knowledge of the lived body is a corporeal scheme. The term "corporeal scheme" or "body schema" accounts for the knowledge of the spatial and temporal structures of the lived body. It is lived knowledge.

Secondly, the lived body is most fundamentally the mode of "being-to-the-world" ("être-au-monde"), the way in which consciousness becomes involved in the world. It is through one's lived body that one manifests oneself to the world. One's lived body places one in the world by means of the various senses.

Thirdly, the lived body is the expression of one's existence and as such it is concretely lived by oneself and by others. All structures and functions of the lived body (perceiving, moving, acting, sexual behavior etc.) are modes of being of the person. In this respect, Merleau-Ponty is indebted
to Buytendijk’s *Algemene theorie*: The body discloses itself as meaningful in its attitudes, gestures and actions, all of which are inseparably connected to and made possible by the biological structure of the body.

Buytendijk’s concept of the subjectivity of the body implies that our own body, even on a preconscious, preperso...
as well. Concerning the epistemological–methodological side, it is important to note that Buytendijk tried during his entire life to find an alternative approach to the causal explanation in physiology, biology and psychology. As early as 1925 he states that the life sciences should use not only the method of causal explanation ("erklären"), but also the method of understanding ("verstehen"). As mentioned in the foregoing section, Buytendijk paid attention to the conceptual–ontological side of the demand for "subjectivization" as well.

In addition to the methodological and ontological aspects of "the introduction of the subject," there is another aspect in Verwey’s analysis which remains underexposed. In order to have a full understanding of the meaning and scope of Von Weizsäcker’s and Buytendijk’s program of "the introduction of the subject," it is important to include their ideas about the practice of medicine. The subject has to be introduced, not only into the theory, but also into the practice of medicine. This drives Buytendijk to speak of "a conscious re-introduction." He writes:

The reintroduction of the subject into physiology and biology is the chief concern of modern thought. The import of this statement by the psychiatrist Henri Ey – in his introduction to the French translation of Der Gestaltkreis, the pioneering work of V. von Weizsäcker – can only be understood if we withdraw from the activity of technically-oriented medical science. [. . .] Henri Ey’s request for the "re-introduction of subjectivity" is the request for a conscious re-introduction of a concept which was always active in the background of medical praxis.44

Lain Entralgo argues that medicine has been at all times, in one way or another “psychosomatic.” Medical practice has been characterized through the centuries by an orientation towards a human being as a “psychosomatic” totality, whether this orientation was made explicit or not.45 This practical–medical point of view which Lain Entralgo called “psychosomatic” is essentially the same as the so-called anthropological point of view of nineteenth and twentieth century anthropologically-oriented medicine.46 The anthropological movement in medicine, however, tried to make this holistic orientation explicit. Ultimately it is the relationship between medical practice and theory which is at stake.

Buytendijk is well aware of this very problem, as can be gathered from his view that the concept of subjectivity was always (implicitly) active in the background of medical practice. Moreover, he argues, the meeting of another person is the pre-eminent way to gain insight into the existence of the concrete human being and to understand his or her "nature." The physician has to treat his patients not (only) as sick bodies, but (also) as spiritual and social beings, as persons. The doctor–patient relationship has to be "a real encounter," in which the doctor must try to gain insight into the
basic motives of the patient's existence. This is best achieved by "taking part in the patients' disturbed existence." 47

Buytendijk exhibits an idealistic view of the doctor–patient relationship. His descriptions are far removed from the everyday experience of a practicing physician. One might ask, for example: what does it mean and to what extent is it possible, "to take part in the patients' disturbed existence"? Nevertheless, Buytendijk is fully aware of the pitfall of treating sick bodies instead of personal beings. He argues that the patient invites the physician to think in a Cartesian way. The patient cannot but think in this manner, because being ill produces a feeling of being alienated from the body. 48

5. THE CONCEPT OF AN ANTHROPOLOGICAL PHYSIOLOGY

Buytendijk assumes an ontological difference between human and animal. Because this difference is born out of empirical evidence, he argues that it must be possible to demonstrate it on a biological and physiological level as well. Central in his criticism of current experimental–analytical human physiology is that this discipline, because of its implicit assumption of Cartesian dualism and of its purely (natural-)scientific approach, is blind to specific human characteristics. A human is considered to be only a highly developed mammal.

The human body may be seen as a physiochemical complex, a necessary condition for being a subject. Buytendijk calls this aspect the "technical or mechanical aspect" of bodiliness. This means that an anthropologically-oriented physiology cannot neglect the achievements of scientific physiology. Experimental–analytical physiology remains "the solid foundation of medical science." 49 This technical aspect, however, is only one of four possible aspects of human bodiliness, the other three aspects being: "the aspect of thematic physiogenesis," "the aspect of a pathic (affectionately determined) being attuned" and "the aspect of availability and usefulness." 50 Although Buytendijk maintains that each of these aspects is important in obtaining insight into human bodiliness, it is the aspect of thematic physiogenesis to which he pays most attention.

According to Buytendijk, man has a specific human body, not only from an anatomical but also from a physiological point of view. He argues, "that also in the vegetative life of man 'that which is mental appears in an alluding way,' but also that 'blind necessity is active'." 51 Still, even spontaneous regulation of breathing, circulation etc. which occurs without conscious control is linked to an individual lifestyle. The culturally bound norms and values of mental life are continuously active in our bodiliness.
All physiological processes and diseases occur within a social context; they never possess a merely physical significance: "An anthropological physiology implies a sociophysiology."\textsuperscript{52}

Though Buytendijk is much concerned with the theoretical foundations of an anthropological physiology, he stresses quite explicitly that anthropological physiology is empirical and experimental in nature and has nothing to do with "philosophical speculation."\textsuperscript{53} In particular, much of his theory is derived from experimental research by Von Weizsäcker and some of his close collaborators, such as Auersperg and Christian.\textsuperscript{54}

Von Weizsäcker and his school criticize current reflex-theory as developed mainly by Sherrington. Current reflex-theory tries to explain the automatic functions of the organism solely on the basis of the structure and function of the central nervous system. This motivates Von Weizsäcker to speak of the "lead-principle" ("Leitungsprinzip") of reflex-theory. The "lead-principle" states that neurophysiological processes (reflexes) occur only along specific neural pathways. In opposition to this principle, Von Weizsäcker develops the "performance-principle" ("Leistungsprinzip") as a foundation for his own research.\textsuperscript{55} The "performance-principle" states that the same biological result may be achieved through different neural pathways. According to Von Weizsäcker, a "function" ("Leistung") implies the modification of neurophysiological processes through the functional relationship of the organism to his or her environment. This is what he calls a "transferral of function" ("Funktionswandel"). External events modify the bodily situation of the subject. Armed with his own theory of the "cycle of structure," Von Weizsäcker tries to show that intentionality can actually be observed in bodily acts and attitudes.

In Buytendijk's Algemene theorie the central notion is "function," a "function" very similar to Von Weizsäcker's concept of function. In Prolegomena Buytendijk introduces another, not altogether unrelated, notion, i.e. "physiogenesis," which is borrowed from Auersperg. Auersperg criticizes the idea of a causal relationship between stimulus and response. In his view we can only speak of a "coinciding (or coincidental) correspondence" between the objective stimulus and the subjective perception.\textsuperscript{56} His concept of physiogenesis is meant to be a notion encompassing both psychology and physiology. The dualism of the psychogenic and the physiogenic should be joined into a monism of physiogenesis.

Physiogenesis is the central theme of Buytendijk's anthropological physiology. What Buytendijk means by the term physis is "the living, experiencing body which does not exclude but rather discloses ‘psyche’."\textsuperscript{57} He connects the term physiogenesis with that of "functioning intentionality." He speaks, for example, of "functioning intentionalities of vital functions."\textsuperscript{58}
This unconscious functioning intentionality is an essential characteristic of our being-to-the-world and an important aspect of every vital function. Like Auersperg, Buytendijk uses the concept of “coinciding correspondence” which characterizes the relationship between physiological regulations and psychological phenomena. The realization of each meaningful vital event stands in “coinciding correspondence” to the structurally and physiochemically ascertainable conditions of this realization.

One of the central theses of Prolegomena is: humans do not react to stimuli as defined by (natural-)scientific physiology, but to the meaning which these stimuli have for the person. Humans do not react to electrical stimulation (vibrations of a certain frequency, light-waves of a certain part of the spectrum, etc.), but to warmth and cold, light and dark, high and low sounds, odors and colors. Buytendijk writes:

If man is ‘stimulated,’ a process has not been started that begins in a physical reality and ends in a psychical reality, but rather a meaning has been disclosed in the existence of a man which has reference to the world that he inhabits. This disclosure is surely mediated, occurs through the body, but this body is the body proper — that is to say directly aimed at the being-person — the living, the ensouled body.59

6. PHYSIOLOGY OR PSYCHOLOGY?

Humans and their world are both physical and mental. All functions and diseases can be seen as infected with a kind of — to use Engelhardt’s vocabulary — “etiological ambiguity” or “amphibiousness.”60 Buytendijk’s concept of an anthropological physiology emerges out of just such an idea of “amphibiousness,” out of the intention to study humans as living subjects in a “non-Cartesian” way. Buytendijk wants to pay equal attention both to that which is mental and to that which is “blind necessity.”61 However, we might ask (how) is this possible? Is it possible to get away from a dualistic approach to the human organism, notwithstanding its “amphibiousness”?

I consider Prolegomena a tentative and hazardous enterprise which connects existential, phenomenological and anthropological insights about being human with scientific knowledge of humans as obtained by current experimental physiology. In anthropological physiology the focus is on the meaning that a receptor stimulation has for the person. Buytendijk considers it a genuine anthropological problem to figure out what meaning the sensible impressions which originate, for example, by expanding and contracting the lungs, the pressure on the abdominal organs and so on, possess for a person under varying circumstances.62 This example is typical
of the radicalism of his endeavor to demonstrate the specific human and personal characteristics in the most elementary physiological functions.

It seems to me, however, that this research program — taken literally — is not feasible. It would imply the possibility of demonstrating not only that, but also how, mental functions are connected with physiological processes. This kind of research has all the trademarks of a non-viable bicephalous monstrum, as Mooij argues. The subjective lived body, accessible to a hermeneutical investigation, is a different body from that open to somatological scrutiny. Both the somatological-physiological and the hermeneutical-psychological aspects are relevant, but it is impossible to combine both approaches in one and the same experimental research method.

Doing justice to Buytendijk’s intentions, it is better not to take the slogan of “demonstrating the specifically human in the most elementary physiological processes” too literally. Buytendijk considers it impossible to show empirically how and where the mental is connected with the somatic. He only wants to demonstrate that there is a connection. In his opinion, the only thing we can establish is an actual correlation or a “coinciding correspondence” (Auersperg) between body and mind. This means that Buytendijk seems to accept a dualism of viewpoints. Most problematic, however, is that he does not fully realize that this dualism of viewpoints also implies a dualism of methods, as pointed out by Strasser.

Buytendijk criticizes contemporary medical physiology, insofar as this discipline only considers the human body as an objective body, leaving out mental aspects. He also criticizes current psychophysiology, because this discipline “starts from an absolute difference between ‘conscious’ and ‘bodily’ phenomena and directs research toward a presumed interaction which is described empirically as a conditional or correlative connection.” His own anthropological physiology has a totally different starting-point, namely, humans as unity preceding the body—mind dichotomy. Contrary to what Buytendijk suggests, his anthropological starting-point, however, does not lead to a different scientific methodology than that used in psychophysiology. There are good reasons to assume, as Van Olst has offered, that Buytendijk’s anthropological physiology to a certain extent covers the subject-matter of present-day psychophysiology. According to Buytendijk, the only thing we can empirically demonstrate is an actual correlation between body and mind. The subject-matter of modern psychophysiology (and related disciplines like physiological psychology and neuropsychology) also consists of the correlation between physiological processes and animal and human behavior patterns. As Van Olst has demonstrated, psychophysiological phenomena also require a notion of a subject in the
sense of Buytendijk. In Van Olst’s view, the central point in every mental process studied by psychophysiology, i.e. is “meaning-giving,” requires the notion of a subject.

In conclusion it can be said that a methodological elaboration of Buytendijk’s design may end up in the research practiced by current psychophysiology and physiological psychology. On a theoretical level it requires that the subject should indeed be introduced, but this does not mean that the standard methods of research in those sciences have to be changed. What is characteristic of Buytendijk’s concept of an anthropological physiology is the “nature” of its object of research rather than a certain scientific method. Methodologically speaking, a specifically anthropological physiology is hardly conceivable. The anthropologically-oriented physiologist and psychologist would be obliged to resort to the old frame of a dualism of methods in obtaining knowledge of the physical and the mental. Subsequently, they may interpret this knowledge anthropologically, meaning, as being related to humans as unity of body and mind, as persons.

7. EPILOGUE

Buytendijk left a voluminous and many-sided oeuvre. With philosophical frankness he sketched a view of the human being which consists of smooth transitions between scientific knowledge, everyday knowledge, philosophical insights and religious convictions. As a result of the synthetic nature of his views he has taken a special place in the world of science. Physiologists consider him an abstract theoretician, many psychologists find him too little grounded experimentally, and to philosophers he is too little a thinker and too much of an empirical scientist. I think that Buytendijk should be placed on the border between the fields of science and philosophy. His significance lies less in philosophical anthropology or philosophy of nature than in his attempt to implement his philosophical conviction with a reasoned proposal for an alternative way of doing (medical) science and practicing medicine.

Buytendijk’s design of an anthropological physiology is fragmentary and programmatic. His methodology offers few points of contact for specific anthropological experimental research. Notwithstanding these critical remarks, however, I believe that Buytendijk’s description of the subjective, animated body forms a pre-eminent point of reference for every investigation in physiology and psychology in which the specific human aspect is not ignored beforehand. His description of the animated body may still
play a crucial role in any attempts to construct a specifically anthropologically-oriented medicine. Moreover, an anthropologically-oriented medicine is not fully dependent on the possibility of a specific anthropological methodology in physiology. Its scientific basis can also be found in psychophysiological and psychosomatic research.

Buytendijk's sketch of an anthropological medicine may be too idealistic and has found little response in medical circles. I agree with Van der Steen and Thung who argue that the program of an anthropological medicine was fascinating, but never really implemented. The question is, however, what exactly had to be implemented: a new way of practicing medicine or a better understanding of the healthy/diseased human being and of the nature of medicine? In my view, it is more medical-philosophical anthropology which is at stake than anthropological medicine. Representatives of the twentieth century anthropological movement in medicine - and that goes for Buytendijk as well - were not only interested in the practice of medicine, but most of all in the (implicit) philosophical presuppositions about the healthy and diseased human being.

Buytendijk's ideas are relevant precisely in the context of a discussion about objectives and the foundations of medicine. Questions concerning sense and nonsense of an anthropologically-oriented medicine become meaningful only in the light of a reflection on the diseased human being and his or her lived body. Buytendijk's anthropological orientation in medicine in particular offers a foundation for any form of comprehensive or psychosomatic medicine.

Acknowledgement – I am grateful to Gerlof Verwey for his criticism and suggestions on an earlier version of this article.

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2. Buytendijk FJJ. Proeven over gewoontevorming bij dieren [Experiments about the formation of habits in animals]. Amsterdam: Van Soest, 1918.


23. Buytendijk was baptized (protestant) Dutch Reformed. In the twenties, he was inspired by Catholicism, influenced by the philosophers M. Scheler and J. Maritain, the
theologian R. Guardini and the physician V. von Gebsattel among others. In 1937 he was baptized for the second time, now as a Roman Catholic. With respect to the influence of Neothomistic natural philosophy in his work, his contacts with authors such as the biologist E. Wasmann SJ and the philosopher J. de Petter OP (Louvain, Belgium) have to be mentioned. Buytendijk was also much influenced by H. Plessner, especially by Plessner's view of the vegetative, animal and human modes of being. See: Plessner H. *Die Stufen des organischen und der Mensch. Einleitung in die philosophische Anthropologie.* Berlin: De Gruyter, 1928.


27. Buytendijk FJJ. *Prolegomena.* 3.


29. Buytendijk FJJ. *Prolegomena:* 27.

30. Ibid: 76.

31. I prefer the term "bodiliness" (in German "Leiblichkeit") to the word "embodiment" (in German "Verleiblichung"), since "bodiliness" indicates more clearly what is meant in phenomenology, i.e. an existential *mode of being* rather than a process of becoming a body, of being incarnated.


35. Tiemersma: 226–228.


43. Verwey: 145.

46. Verwey: 133.
47. Buytendijk. *De relatie arts-patiënt*.
50. Ibid: 44.
52. Ibid: 150.
53. Ibid: 17.
58. Ibid: 177.
64. Buytendijk. *Prolegomena*: 76.
68. Ibid: 52–56. Van Olst’s conclusion is based on an exploration of three research areas: (1) habituation and dehabituation of the orientation reaction, (2) the classic conditioned reaction and (3) “problem solving” in relation to the orientation reaction. In every area the notion of a subject is introduced: (1) as a perceiving and valuating subject, (2) as a subject on the level of the organism and (3) as a cognitively operating subject.
69. Leder tries to deconstruct the mind-body dualism by showing that its roots are hidden in the phenomenology of the lived body. He pays much attention not only to the sensomotoric, but also to the vegetative aspects of the body (digestion, visceral motility etc.). In his study too, however, the question remains how to study the lived body in an empirical–scientific, though not dualistic, way. See: Leder DL. *The Absent Body*. Chicago and London: The University of Chicago Press, 1990.
The Concept of "Subject"

"The concept of subject is more comprehensive than the concept of consciousness. A subject is a way of being which reveals itself as sensitive to the meanings (understandable by us) of sensory impressions. These meanings are apparently constituted in the activity of the individual and are answered significantly by a behavior. [. . .] As has been said, the concept of subject does not imply a knowing-ness (consciousness), but a way of being which makes itself known to us as a self-constituting system of meanings in behavior. The subject is not – no more than the force in physics – a thing next to other things, but by the subject one means a 'quo ens est,' that through which the being exists in the way it manifests itself. [. . .]"

"Consequently, a subject is each organism, insofar as this organism in its morphogenesis and in its completed morphostasis, in the significant context of its intra-organic performances, regulations and adaptations refers already to a meaning-giving 'existere,' thus to a context of acting intentionalities (Husserl) through which the organism directs itself to its environment and co-exists with it as with a field of pathically-lived meanings and factors relevant to its own existence. This is already realized in animals. In the most fundamental and always present experience of our own existence, the co-existence with our world is thoughtlessly present and that as primarily constituted by our bodiliness."

"It has been generally recognized now that the human subjectivity is fundamentally different from that of the animal. Man is a mental being and an 'historical idea,' not a 'natural species' (Merleau-Ponty). Objectifying consciousness is the origin of a new dialectic which expresses itself in task and labor, in many forms of symbolic and thereby normative and creative behavior. The human body, because of its cultural and social ties with personal-mental existence, which is realized in relative freedom through the open dialogue with the world and fellow men, is absolutely different from the animal body. Even though his body shows the building plan of the animal species from which man sprang, the whole subjectivity of the body, consequently, preconscious perception and action, refers to a human world, an open cultural world, not a species-specific 'environment'."

"Human existence is a finding-oneself in a web of meanings, of which as subject he is only conscious of a small part. Nevertheless, it is undeni-
able that something can only function by its meaning if it announces itself, and therefore is known in a specific way. By ‘knowing’ we mean only the mode of being of a subject, a being which is not determined as a ‘thing’ by its limits and its properties. A subject is a mode of being which is characterized by being able to encounter something else in a meaning.”

The Human Lived Body

“The undeniable, irreducible fact that we exist, that is to say, that we direct ourselves to the life-world as to an inexhaustible source of meanings which we meet, cannot be explained objectively. Existence is unimaginable. The unimaginable is the most general and the most evident human experience that something is active by its meaning. This is, however, the fundamental characteristic of each perception, each action, each expression, each symbol (word and gesture). In the immediacy of living and living together we know ourselves with absolute certainty as bodily beings, an ensouled body and an incarnated ensoulment. G. Marcel rightly says that this ‘being incarnated’ cannot be objectified.”

“When we are of the opinion that the concept of the ensouled self-organizing bodiliness – and therefore the body-subject in its polar contrast to and unity with personal subjectivity – introduces a view of being-human which is more fruitful for science than the dualism of a structural body and a thinking, willing mind, then this does not mean that the subjectivity of the body, as tentative and founding representation of the unity of person and world, is an imaginable ‘something’ or can be seen clearly. This is not the case. The fact of our bodily existence, of the incarnation of the mental organization-principle in the course of our existence, remains ‘non-transparent’ – a secret, but does this not count for most of the basic concepts in the various sciences?”

Anthropological Physiology

“The theme of an anthropological physiology as a positive empirical science seems to be definable in a simple manner. The starting-point has to be the general attitude that asks to what extent one can demonstrate, in fact, that specific humanness is constitutive in the normative functions of organs and organ systems, regulations and adaptations, tissues and cells, and perhaps also in the processes which are numbered among the qualities of cells, like intermediary metabolism and permeability.”

“In an anthropological physiology, not only is the unity of the specific humanness ascertained with the performances of organs, organ systems,
tissues and cells, but also a theoretical view-point has to be discovered from which this unity in principle can be understood. We are of the opinion that this view-point is obtained through the concept of subjectivity.\textsuperscript{7}

"In the normally-integrated and self-integrating existence of man – the scientific field of vision of an anthropological physiology – personal existence always proceeds 'with the body as guide' (Nietzsche). 'Spirit manifests itself through the body' – the basic thesis of Merleau-Ponty. We add to this: 'the body of man organizes itself in its human performances and structurations (\textit{à travers l'esprit}) through the mind.' In these two views, both the 'mind' and the 'body' are understood as subjects, not independently, however, but as a polar unity which constitutes itself to a thematic and thematizing order during individual existence."\textsuperscript{8}

"A specifically-human physiology cannot be designed as the physiology of a particular animal species, if we are convinced of the fact that personal, cultural, and mental existence leave a mark on the bodily performances in an essentially-different manner from that in which the way of life in animals does this. We already know this to some degree through daily experience, but emphatically in its factualness and problematics through medical science and its related fields."\textsuperscript{9}

\textit{Human Posture}\textsuperscript{10}

"Specifically human posture is standing upright, the balancing on the small plane of the feet without thinking and of its own accord. Man stands as long as he wants to remain standing, that is to say as long as the personal subjectivity by being situationally motivated allows such bodily regulations as are necessary to organize themselves to insure personally-wanting-to-stand in its 'natural' thoughtlessness."

"The self-regulation of the well-balanced muscle tensions which are realized in standing 'is an active phenomenon since it implies a waking state' (Froment). Although man has to be awake in order to be able to stand, the well-balanced regulation of the tonus takes place in the various muscles beyond the field of consciousness but not therefore beyond subjectivity. We have to repeat here that no one knows how he does what he himself does. This goes for the simplest behavior, like standing, as much as for the most complex speech. One has to 'allow it to occur.'"

"Human standing, which is always a self-standing, but which is bodily organized, is an exemplary illustration of the polar, dialectical unity of the personal and bodily subjectivity as this develops itself historiologically. For the child learns to stand because it learns to 'want to stand.' This presupposes a 'being able to stand' which is developed in connection with an
organization, the dynamic basic characteristics of which are seen to be embedded in morphogenesis. [. . .]

"The fact is that standing in animals is situationally significant behavior. This is a fortiori the case in man. The young child stands up on the basis of the invitation of the milieu. Lifting the head and the trunk has preceded this. In this way the child comes to experience a visual horizon in his field of existence and through this to distinguish the far away and the close by. In the sitting posture, his hands become free, enabling him to touch things within reach and to handle utensils in co-operation with his visual perception."

"In standing-up, the initial requirement for walking, an important new positional relation to the life-world is constituted. This is only possible through a loss of security; however, this also represents his new freedom to go toward the far away with open empty hands. This freedom is specifically human and has to be discovered, acquired and offered by the child. The child accepts the instability of the standing posture joyfully, for this is the condition for going through an 'open' world, 'standing' opposite fellow man and things, obliging him to 'stand his ground' and to 'assume a posture' – this is a foundation category for each human behavior, a silent role playing."

"The crucial place of human posture has been beautifully understood phenomenologically and anthropologically by E. Straus. That which in standing becomes physiogenetically organized, especially in such widely varying postures as man's, must be based on being human. In our bodily subjectivity we conquer gravity and are able to keep our balance on a tiny surface of support. For any anthropologically-oriented physiology of posture, or recovery of posture, it is essential to realize from the start that wanting to stand is also being able to stand, and, we must add, being allowed to, 'ought to,' and having to stand. We see that human posture is determined multidimensionally; it is nature and culture, expression of emancipation, independence. It is also a sign of being threatened: 'The righteous man is threatened by collapse.' (E. Straus)."

Breathing

"This brief summary of human regulation of temperature may serve to give direction to our research on the regulation of respiration. For in this research the autonomy of the pre-existent, prereflective, bodily organized automatism is made even clearer. Temperature regulation seems to be active from birth to death in so independent a manner that one is inclined to take for granted a physiological mechanism, which, like the heart beat, the
working of the kidney, and so on, can be described, apparently adequately, as a system of causally connected processes, taking place in someone’s body and upon which the personal existence exercises an influence only incidentally because nerve impulses or endocrine hormones change the processes centrally or peripherally, directly or indirectly.\(^{12}\)

“If one is of the opinion that man himself breathes, then this means that his bodily subjectivity, as with that of an animal, is primarily directed toward the maintenance of optimal life circumstances as foundation for the realization of the continuous certainty of existence in the world. If, however, one presupposes that an autonomous breathing center determines ventilation of the lungs, then one has consequently to view this center (as every other one) as a part of an ‘electronic brain,’ which is relatively independently active. The breathing center reacts, when it is isolated, directly to the CO\(_2\) stress of the blood but when it is absorbed in the organic unity of the body it receives ‘information’ in many ways.\(^{13}\)

REFERENCES

4. Ibid: 64.
5. Ibid: 75.