



A conceptual application of Psychobionomy to the field of personality and individual differences

Konstantinos V. Petrides

London Psychometric Laboratory, University College London (UCL), 26 Bedford Way, London WC1H 0AP, United Kingdom

ARTICLE INFO

Keywords:

Psychobionomy
Theoretical psychology
Philosophy of mind
Perceptions
Self-report
Personality
Self

ABSTRACT

This article introduces Psychobionomy as a general system seeking to explain and utilize the laws governing the mind, which it views as the source of all life. Although its remit is a great deal wider, herein, the system is discussed with particular reference to the pressing need for new paradigms in personality psychology. I describe the basics of the system and discuss how it can help address, recast, or transcend a range of enduring challenges in personality and individual differences, relating to issues of definition, structure, and practical application. Psychobionomy offers an original way of attending to and interpreting one's own direct experience of the phenomenal world. It places the Generic Ground of Pure Knowing at the heart of human experience, which gets progressively transmuted into Thinking, Feeling, Perceiving, and, finally, Acting in the world. In contrast to conventional approaches to information accumulation, Psychobionomy is an absolute psychological system that views the world as part of the individual, rather than the individual as part of the world. I provide examples of how two contemporary personality theories (trait emotional intelligence theory and belief-importance theory) can be accommodated within Psychobionomy and, subsequently, present a generic application of the system in the area of clinical counselling. I close with a discussion of two key challenges in personality psychology (viz., the integration of idiographic and nomothetic approaches and the restoration of the centrality of self-perceptions and their methodologies) from the perspective of Psychobionomy, which is recommended as a pathway to the realization of Self-Knowledge.

1. Introduction

Psychobionomy is a general system that aims to explain and utilize the laws governing the mind, which it views as the source of all life.¹ The label represents a combination of the Greek words 'Psyche,' which means *soul* or *spirit*, 'Bio,' meaning *life*, and the suffix '-nomy,' which has the dual meaning of *arrangement* and *law*. Psychobionomy, then, aims to discover, arrange, and utilize the laws of spirit and life. In tandem with discovering laws, the system seeks to develop guidelines for the individual human being to define and achieve their life goals.

Psychobionomy has obvious implications for the sprawling discipline of psychology that started out as a special branch of philosophy, much like the established sciences, but quickly shifted all focus from spirit to mind and, gradually thereafter, to the body (specifically, the brain). Within psychology, personality theory has always occupied a prominent position that has withstood the tests of time and innumerable vogues that have come and gone over the years. A major objective

of the present article is to explain the relevance of Psychobionomy for personality psychology with explicit reference to the key challenges highlighted by the Editor of this special issue. Due to lack of space, I was unable to address all of those challenges, but chose to focus on those that I considered most urgent.

Psychobionomy makes a simple and straightforward, albeit occasionally difficult to apply in practice, demand of the individual: to discard any concepts and notions, irrespective of how prevalent, consensual, and cherished, for which they are unable to find evidence in their own direct experience. By direct experience I refer, broadly speaking, to knowledge gained through immediate perception and analysis, thus specifically excluding beliefs, concepts, and ideas that have been acquired from secondary sources. In this paper, I highlight and discuss numerous unstated and unexamined assumptions sitting at the heart of the field of personality, whence they generate a never-ending supply of theoretical and methodological challenges, many of which are just unresolvable, arising, as they do, from presumption and

E-mail address: k.petrides@ucl.ac.uk, <http://www.psychometriclab.com>.

URL:

¹ As clarification for "source of life", I speak of an idealist system wherein the objects of external experience (life, world, etc.) are understood as dependent on the activity of the mind and do not require physical material (organic or inorganic) for their existence.

<https://doi.org/10.1016/j.paid.2019.04.018>

Received 23 November 2018; Received in revised form 1 April 2019; Accepted 13 April 2019

Available online 03 May 2019

0191-8869/ © 2019 Elsevier Ltd. All rights reserved.

conjecture. In addition, I draw attention to inherent paradoxes in personality research, which have long been swept under the carpet and which, some feel, would be sufficient to sink the field as a whole, were it not for its practical utility in applied settings, mainly via its comparatively small subspecialty of psychometrics. I argue that these challenges can be either abandoned, by endorsing a Psychobionomic approach that forces us to discard the underlying assumptions, which, directly or indirectly, give rise to them; or tolerated and negotiated by adjusting our existing theories to make them more consistent with, and useful to, practical settings.

By assumptions in the paragraph above, I refer to unproven premises that are tacitly or explicitly accepted by researchers, despite an absence of evidence or indeed the presence of evidence to the contrary. For example, the field of personality and individual differences rests entirely on the unproven notion that there exist separate individuals, who may be compared to each other on an indefinite number of psychological attributes, out of which (inter-individual) comparisons something fundamentally important about the (intra-individual) nature of the human being will be revealed. To the extent that this set of assumptions is invalid, the field will never converge. There are several other such implicit assumptions permeating the field, including the notion that information received through our senses is veridical and worthy of the most minute dissection and analysis or that psychological phenomena unfold along rational lines that can be quantitatively modeled (“the soothing illusion of quantitative rigor”; Meehl, 1978, p. 824).

Psychobionomy is not offered with a view to producing consensus in personality and individual differences or any other field, not least because this would require conceding the reality of external observers whose viewpoints are to be given equal weight with those of the individual subject. The system's tenets are laid out in Section 4, following a brief presentation of the definitional and structural problems that continue to plague personality psychology. They must be examined by the individual reader with reference to their own direct experience and not to the beliefs, convictions, and opinions of others or to the prevailing trends in the peer-reviewed literature of the day.

In any case, the pursuit of consensus engenders groupthink and “lowest-common-denominatorism,” in theory-building. As valuable as these might be in the context of politics (and of politicized science), they are quite irrelevant in the context of philosophy and basic science. Particularly in the psychological and social sciences, progress cannot be achieved through scientific popularity contests or the manacled together in joint declarations of large numbers of scientists, but rather through theory-driven applications that make a concrete positive impact in the real world.

2. On a definition of personality psychology

Psychobionomy asserts that reality cannot be defined by constructs and words because words can only capture thoughts, which occur within reality, but can never represent it. Thinking, at any given point, represents only a sliver of reality and that which is only part of a whole can never provide a complete description of the whole. This becomes most obvious where psychological constructs are concerned. A prime example is the flagship individual differences construct of intelligence, which has resisted definition despite concerted efforts by many a distinguished psychologist (Thorndike, 1921). Alas, this has hardly prevented us from promulgating dictionary definitions of psychological constructs that have contributed greatly to the anarchic state of personality psychology. Even as far back as 1957, Hall and Lindsey had noted in their classic textbook on personality that the term has come to represent as many different meanings and definitions as there are personality theorists (Hall & Lindsey, 1957).

Motivated by pragmatic considerations, mainstream personality psychology has been forced to retreat into the seemingly safe haven of

the operational definition, imported from physics (Bridgman, 1927) and asserting that a construct can be defined through the set of operations that has produced it. In personality psychology, operational definitions typically conflate the ontology of psychological reality with the constructs developed to describe it. However, the construct is *not* the ontological reality and, therefore, the operational definition does not necessarily define anything ontologically real – merely a construct that, purportedly, describes reality.

For example, a particular intelligence test represents a set of operations which, allegedly, describes a construct of intelligence, but which is completely silent with respect to whether this construct is ontologically real or not. Scoring high on this IQ test means that the person performed well on the items of that particular test, but says absolutely nothing about the existence of a phenomenon of intelligence that has caused the performance. While we may use the adjective “intelligent” as a description of the person's performance, we are not entitled by the test data to use its noun form as an explanatory psychological attribute of substance. In addition, operational definitions are, at least partly, responsible for the excess of personality constructs we have been witnessing since the earliest times of academic psychology (Kelley, 1927) because every single change in operational procedures requires the postulation of a new construct.

Operationalism in psychology is an, ultimately unsatisfactory, attempt to connect theoretical propositions to data. Nevertheless, it can provide a methodological infrastructure for personality and psychometrics, provided we extend its pragmatism to its proper conclusion, viz., that only those constructs that have demonstrated practical relevance in the “real” world, outside the exceedingly narrow confines of academic psychology, should be selected for further study. That this is not the case at present, when we are suffering from an anti-integrative proliferation of personality scales and constructs (Borghans, Duckworth, Heckman, & Ter Weel, 2008; Shaffer, DeGeest, & Li, 2016), is regrettable. Still worse, however, is that in personality psychology and, more markedly, in psychometrics, we appear to have shunned even those minimum requirements that operationalism demands in favor of an “anything goes” approach, whereby tests and constructs are summarily “developed” in a theoretical vacuum.

The term personality is no more definable than that of intelligence or any other psychological term. Its boundaries are impossible to locate and, consequently, any attempt to impose such will be, in the final analysis, arbitrary and destined to conflict with other such attempts. From this caveat follows the corollary that it is unrealistic to hope to establish a specific scope for personality theory and applications. A theory of personality that is worthy of its name ought to be conceptually and practically relevant to all fields and domains in which there exist persons (assuming that persons exist; see Parfit, 1984). In stark contrast to the developing literature trends in the last couple of decades, theories of personality must be “grand” and “global,” rather than “micro” and “local”.

As an all-embracing system, Psychobionomy is far broader than any personality theory could ever seek to be because it deals with life as a whole, rather than with slices of life. By slices of life, I refer to information spheres that develop and accumulate separately from other information spheres not because they are truly separate, or independent, but for reasons of methodological expediency. While it may appear easier to study one particular aspect of life (biology, physics, psychology, etc.) compared to life as a whole, the result of such dissections will be fragmentary information. This is why the fundamental questions in philosophy, the original science whence all established disciplines have sprung, are thoroughly wholistic (“What is being?”, “What is knowledge?”, “What is thinking?”, etc.). The apparently predominant, among contemporary scientists, view that philosophy is something different from, or even antagonistic to, science is in urgent need of a realignment that will reflect the contiguous nature of these two realms of intellectual activity (Laplane et al., 2019).

3. On personality structure

Over time, the major descriptive factors of personality have mutated to data-driven structures, brought about by a culture of ‘statisticism’ (Lamiell, 2013), wherein theoretical emphasis keeps drifting away from the individual person onto numerical indices, aggregate samples, and psychologically elusive dictionary adjectives. However, if personality is to stay true to the meaning of the term, it really does have to address the person, the individual human being, as distinct from averages, samples, and statistical indices. As Hans J. Eysenck (1977) put it “Psychology is about people”.

The prevailing presumption that it is possible, indeed desirable, to intrapolate (particularize) statistical findings from thousands-strong samples to the individual person is theoretically (Lamiell, 2003) as well as practically (Fisher, Medaglia, & Jeronimus, 2018) untenable. That is not to say useless because there is pragmatic utility to this line of work as exemplified by (a small number of) top-end applications in the specialized field of psychometrics. Within such a context, theoretical consensus about personality structure can only be manufactured and imposed, but never achieved by means of irrefutable evidence, as is now obvious in the case of the formerly ‘consensual’ Big Five model that is coming under increasing pressure from all sides (e.g., Block, 1995; Eysenck, 1992; Van der Linden et al., 2017). In the words of eminent statistician G. E. P. Box (1979), all statistical models are wrong, but some are useful.

Psychobionomy disputes the veracity of the paramount, but unscrutinized, assumption in personality psychology, i.e., *the concept of the person*. It calls upon the researcher to seek and discover the very source of this concept in their direct experience. Just *who* is this person whom we seek to analyze, understand, and theorize about? Is the person separate from, or different than, the concept of the person? Is the person truly separate from the world, which surrounds them and which they constantly seek to subjugate to their whims and wishes? In our direct experience, precisely where do we find this person other than in our belief system? If, through impartial observation, we deduce that this person is little other than a hypothetical mind-body compound, then the conclusion must inevitably arise that the study of a hypothetical cannot yield experientially factual results. Competing theories of personality continue to quibble about the “true number of personality factors”, with scant consideration of who or what it is that is elementally being described. Just *who* is that being labeled with all these adjectives straight out of the dictionary of words? What is the essential nature of this being? To advance elaborate theories, backed by a bewildering armamentarium of the latest fanciful technologies and applied numerical techniques, on the unproven presupposition that there is an independent “person” acting in a disconnected material world, is equivalent to erecting castles in the sand.

For the study of personality to reach a final set of conclusions and overcome its grand challenges and existential crises (e.g., Bardi & Zentner, 2017), there need to exist persons. As I noted above, this is just one of the assumptions taken for granted in the field – an assumption that is by no means self-evident or proven (Parfit, 1971, 1984). Operating from such unproven assumptions may well yield sufficient, albeit always ephemeral, practical gains that can sustain the field, provided there is still interest in it, but it can never – and will never – lead to theoretical convergence. Consequently, I expect that calls for integration and reconceptualization, such as those issued by no fewer than three major personality journals (EJP, EJPA, and PAID) in this year alone, are here to stay and will be regularly repeated, under different guises, for as long as there is research activity in the field.

Due to deeply entrenched mechanical thinking,² the presumed

concept of the person is very difficult to shake off. Consequently, it may be necessary, as an interim concession, to continue grappling with indeterminate questions, like how many and what are the main dimensions or types of personality (e.g., Barrett, Petrides, Eysenck, & Eysenck, 1998) that have been humouring us since at least the time of ancient Greek physician Hippocrates. The latest research on this particular question has yielded as final an answer as we could hope for by positing a hierarchical structure of personality, akin to that of cognitive ability (Carroll, 1993) with a general factor at its apex, an (in-determinate) number of broad dimensions below, and an (in-determinate) number of narrow facets at the bottom. Van der Linden et al. (2017) demonstrated that at the heart of the General Factor of Personality lies the constellation of emotional perceptions encompassed by trait emotional intelligence (trait EI; Petrides, 2001; Petrides, Pita, & Kokkinaki, 2007). Simply put, the central, unifying personality characteristic is that of perceived socio-emotional competence, which is comprehensively captured within the trait EI framework, and which progressively becomes differentiated into various, more specific, personality dimensions lower down the hierarchy.

4. General statement of the integrative system of Psychobionomy

Psychobionomy allows for complete integration of all the different perspectives and foci in the field of personality, which is becoming progressively more fragmented and unable to recognize the interdependencies of its constituent parts. Integration is urgently required for a deeper and more complete understanding of the interconnected areas of personality structure, process, and development as well as for the field's progress towards establishment as an explanatory science (Baumert, Schmitt, Perugini, et al., 2017). Such integration can be achieved by transcending the exhausted paradigms that produce, sustain, and replicate the never-ending “challenges” and “crises” that personality researchers have been contending with for rather a long time (e.g., Bardi & Zentner, 2017; Endler & Parker, 1992; Sechrest, 1976).

One way to begin a formal description of Psychobionomy is through the illustration in Fig. 1. At the heart of the system is the notion that the Generic Ground of Pure Knowing (*Knowing*³) underlies and permeates human experience in its entirety. That is to say, human experience fully consists of Knowing. However, in typical human experience, Knowing gets progressively “colored” and transmuted, first into *Thinking*, then *Feeling*, then *Perceiving*, and, finally, *Acting*. Each of these stages absorbs all preceding stages; thus, Thinking absorbs Knowing, Feeling absorbs Thinking and Knowing; Perceiving absorbs Feeling, Thinking, and Knowing and finally, Acting absorbs all else. Unlike the other four, Knowing is not a stage because it permeates them all and, singularly, can exist on its own. Knowing is the irreducible ground out of which all human experience emanates, an important consequence of which is that the world, as perceived, is not merely dependent on the perceiver, but an inseparable part of them. Put differently, Psychobionomy asserts that the individual is not in the world, but rather the world is in the individual⁴; this renders it a psychological system in absolute terms.

(footnote continued)

what Freud (e.g., 1915) and others have termed the “conscious mind” (see also footnote 5).

³ Knowing is best understood intuitively and it may well be argued that attempting to provide a dictionary definition for it is more likely to obfuscate than to elucidate. We might perhaps say that Knowing refers to the quality of subjective awareness that constitutes the cardinal characteristic of the human being. A broad synonym for Knowing could be consciousness, and indeed there are numerous promising links between Psychobionomy and the mushrooming literature on consciousness, but these are impossible to pursue in this very short introduction.

⁴ This statement is a corollary of the idealist premises of Psychobionomy according to which objects in the apparently external world constitute

² By mechanical thinking, I refer to superficial thinking that is firmly rooted in habits, instincts, and unexamined presuppositions. It is the type of thinking that systematically ignores the bulk of the contents that are located outside of

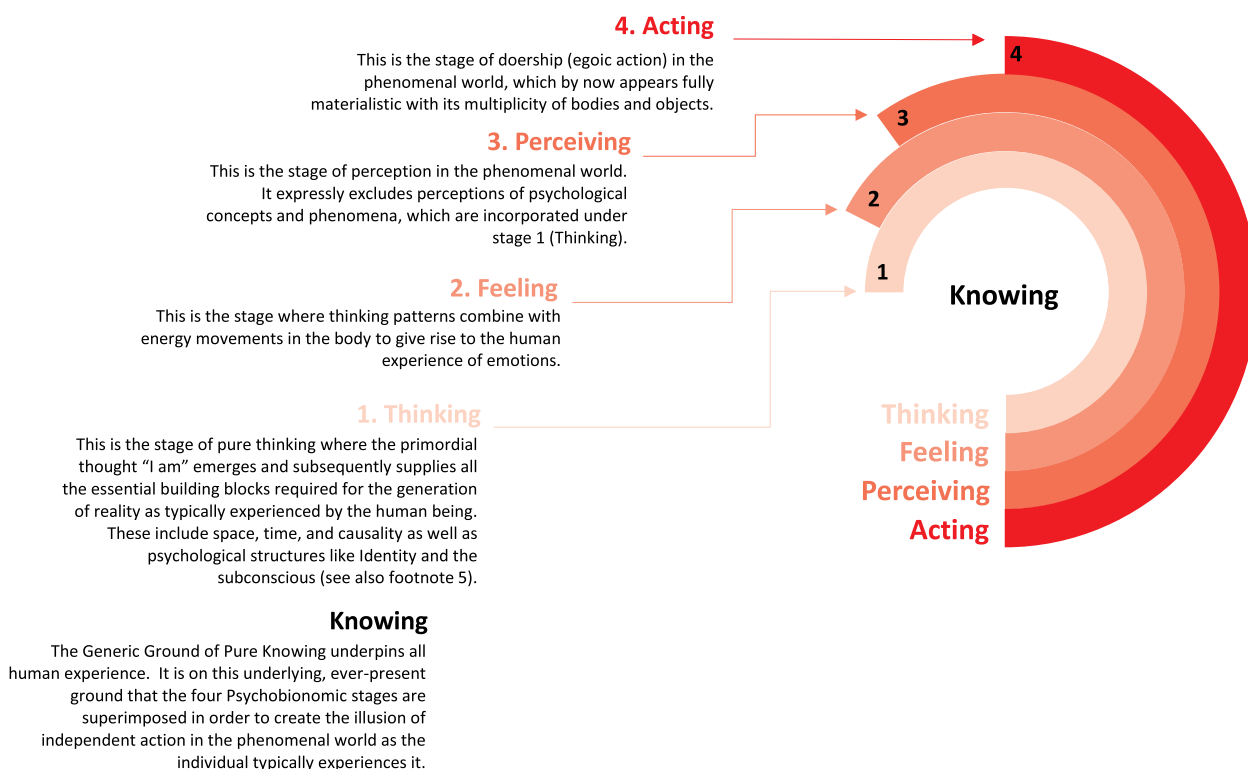


Fig. 1. An illustration of the system of Psychobionomy. The illustration is intended to convey general principles and, as such, entails a degree of fluidity in its application. The Generic Ground of Pure Knowing permeates the four stages of human experience and all of their aspects. Thinking emerges as stage 1 in the system and underpins the three stages that follow it. This stage comprises pure thought, but also the primary concepts of the individual's psychological reality, including all of the self-perceptions that give rise to their personality (Self-construct) as well as the desires, fears, needs, etc. that are deep inside the individual's subconscious (see also footnote 5). Feeling emerges as stage 2 of the system through a combination of thought patterns from stage 1 coupled with energetic movements in the body. It has a major impact on directing and influencing perception in the phenomenal world. Perceiving emerges as stage 3 and concerns perceptions in the phenomenal world (e.g., which aspects of the world the individual directs attention to). It excludes, however, self-perceptions and perceptions of inner phenomena, such as Self-construct, which fall under Thinking (stage 1). Last, Acting emerges at stage 5 and concerns typically experienced doership as an independent actor in a phenomenal material world. Each stage depends on the stages that precede it, but not on those that follow it, and all stages are dependent on the Generic Ground of Pure Knowing, which exists completely autonomously. Progressively deeper hues are used in the depiction of the stages in order to signify the greater levels of conditioning associated with each stage. Psychobionomy spans the entire range from the wholly unconditioned Generic Ground of Pure Knowing, all the way to wholly conditioned action in the world, burdened by the full weight of habituated beliefs, opinions, and intellectual commitments. © K.V. Petrides 2018 – London Psychometric Laboratory. All rights reserved.

Assuming an *Identity* at any one of the four Psychobionomic stages, which in most people happens spontaneously, imposes it automatically upon all preceding stages as well as upon the Generic Ground of Pure Knowing; one cannot consider oneself to be a doer (actor) without also assuming oneself a thinker, feeler, perceiver, and knower. This is a core mechanism of human experience according to Psychobionomy. The spontaneous generation of a presumed, but rarely examined, sense of Identity is typically experienced as real and constitutes the focal point of innumerable conventional theories and models of psychology. To the extent that this Identity is illusory, all theories based on it will inevitably be illusive.

The original generation point of Identity is Psychobionomic stage 1 (Thinking; the Cartesian “I think, therefore, I am”), whence it becomes stealthily entrenched into the other three stages through a process of unmonitored reasoning. Identity is absent in the Generic Ground of Pure Knowing and hence, from the Psychobionomic perspective, it is indeed illusory. Psychobionomy asserts that “the knower” is created in

stage 1 (Thinking) and only subsequently imposed, retrospectively on the Generic Ground of Pure Knowing and prospectively on the other three stages (Feeling, Perceiving, and Acting). The nucleus of Identity is the universal thought “I am,” which can be located right on the cusp of Knowing and Thinking.

What we have come to study under the term “personality,” but can also be informatively labeled as “Self-construct”, is nothing other than the embellishment of Identity, which takes place via the expansion of the universal thought “I am”, e.g., “I am Greek-British, Professor, competent, optimistic, etc.”. These are elaborations of the primal thought, none of which can exist independently of it, although it can, and does, exist independently of them. The unwitting presupposition that all these descriptions are ontologically real is what fuels the interminable research activity in the field of personality and individual differences, which continues to fail to converge and cease. To reiterate, Identity is ultimately illusory because it is completely absent in the Generic Ground of Pure Knowing and only generated and expanded afterwards in the derivative stages of human experience. Although the mechanism of expansion is of the outmost importance for the harmonious development of the human being, space considerations prevent a full discussion.

In a nutshell, Identity only comes into play after the primordial thought (“I am”) gets appropriated by the concept of a person, which is seeded in the subconscious mind much like a Jungian archetype (see

(footnote continued)

representations in the mind. Because the apparently external world is entirely dependent on the activity of the individual mind, it follows that the world is located in the individual, rather than the individual in the world (see also footnote 1).

also footnote 5). This then turns the primordial thought into a cognition of personhood that separates the (imaginary) individual from their environment, thus giving rise to the Subject-Object dualism (“me vs the world”) that constitutes the defining characteristic of the mundane experiencing of reality and the cornerstone of all personality theories without exception. In those cases where the concept of a person is seen and rejected as merely a concept without inherent existence (see, e.g., Parfit, 1984), an understanding of universal unity and oneness emerges as has been variously discussed by such Western philosophers as Berkeley, Hegel, Parmenides, Plotinus, and Spinoza among many others (see, e.g., Cornell, 2016).

As noted, this illusory Identity is constructed unconsciously and is very rarely scrutinized. And yet, it is the starting point for all subsequent thinking, feeling, perceiving, and acting. In other words, all action in the phenomenal world is undertaken on behalf of an unexamined self-construct, which, in its essence, is little more than embellished Identity. It should come as no surprise that the individual, living a rudderless life, sooner or later, starts hitting psychological impasses. But when these challenging moments arrive, people are far more likely to turn to medication for an escape than to question their lack of awareness, dysfunctional emotional perceptions, and irrational cognitions that are the main determinants of psychological ill-being (Petrides, Gómez, & Pérez-González, 2017).

Psychobionomy provides the basis for complete theories that strive to meet all major objectives of science, viz., description, explanation, prediction, and control of phenomena. It does so by disentangling, ordering, and recognizing the causal interdependence between the four stages in Fig. 1. Currently mainstream theories of personality completely conflate Knowing, Thinking, Feeling, Perceiving, and Acting by choosing to study adjectives or, worse still, the overt behavior of agents. As a result, they have great difficulty meeting even the second scientific objective of science – viz., explanation (Boag, 2011). By the time human behavior has finally become manifest (Psychobionomic stage 4), it is way too late to explain, predict, or control it. The best we can do at that point is construct post hoc accounts of what has already occurred. This is precisely what renders behaviorism (Watson, 1913) so unappealing a psychological theory, i.e., the fact that by the time behavior has actually manifested, all of its internal psychological antecedents would have been left unattended and unconstrained to exert their influence for unknown periods of time.

For personality theory to move decidedly beyond the sphere of description, it will have to pay heed to the structure of human experience as elucidated by Psychobionomy. Behavior ought to be explained with reference to what the doer has, consciously or unconsciously, chosen to perceive in the phenomenal world, which, in turn, ought to be explained with reference to the individual's feelings, which, in turn, ought to be explained with reference to the individual's thoughts, including, vitally, their psychological self-perceptions – in that exact sequence. By following this sequence explicitly, we can move from mere description, to explanation, to scientific prediction, and eventually to control because when the antecedent conditions are understood, the possibility arises to manipulate them in order to produce desirable effects. In Section 6, I provide an example from the area of clinical counselling showing how, in the context of Psychobionomy, challenges in the phenomenal world (which primarily relate to the descriptive objective of science) can be reduced to more fundamental levels that allow for explanation, prediction, and, ultimately, control.

5. Accommodating personality theories within Psychobionomy

Most of this section explains how trait EI (Petrides, 2001; Petrides et al., 2016) and belief-importance (Petrides, 2011) theory can be accommodated within Psychobionomy. I chose these two theories on account of my intimate knowledge of them, but also because they are themselves uncommonly broad and general, with the former showcasing a proven scientific literature as well as practical applications in

virtually every significant life domain. If Psychobionomy can incorporate such broad-scope theories, it follows that it can easily accommodate ones that are narrower. At the end of the section, I briefly discuss key links between Psychobionomy and personality approaches outside the individual differences tradition.

5.1. Trait emotional intelligence theory

With respect to trait EI, the first point to register is that it is itself a grand theory. The current consensus that trait EI is a specialized part of the EI literature, which is a specialized part of the personality and individual differences (or the positive psychology) literature, which is a specialized part of the psychology literature, is uninformed. It is a lingering misconception directly contradicted by the salience that trait EI theory shows across many different subjects within academia and many different industries outside. Trait EI is a grand theory of personality, concerning a most fundamental dimension of individual differences. It integrates *traits*, *emotion*, and *intelligence* – the last broadly defined, i.e., much beyond the narrow operational confines of Spearman's (1904) *g* – hence, *trait emotional intelligence*. Recent analyses have shown how the entire domain of personality can be reduced to a single general factor, which, to all intents and purposes, is phenotypically and genetically identical to trait EI (Van der Linden et al., 2017, 2018). Consequently, it would be fruitless to try to understand or pigeonhole trait emotional intelligence as some novel configuration within the personality and individual differences or positive psychology literatures, which it so obviously bestrides (e.g., Petrides et al., 2016).

Despite its generality, trait EI theory can be easily accommodated within the more general system of Psychobionomy. As previously mentioned, trait EI refers to a constellation of emotional perceptions assessed through questionnaires and rating scales (Petrides et al., 2007). Consequently, it represents a specification mainly within Psychobionomic stages 1 (Thinking) and, especially, 2 (Feeling; see Fig. 1). In other words, and broadly speaking, trait EI represents a theoretical specification of thinking about, and with, feeling. As such, and in line with other major personality dimensions, the construct obviously has manifestations and consequences in Psychobionomic stages 3 (Perceiving) and 4 (Acting), which are underpinned by the stages of Thinking and Feeling. Psychobionomy explains why trait EI has proven so influential in theoretical and applied settings; it is because thought and feelings are more basic than perceptions of (stage 3 in Fig. 1) and actions in (stage 4) the world and, consequently, jointly impact on them.

5.2. Belief-importance theory

Belief-importance theory (belimp; for the theory, see Petrides, 2011; for an application, see Petrides & Frederickson, 2011), was developed in order to help address, on the one hand, the obvious explanatory weaknesses in the field of personality and individual differences (Bandura, 1997) and, on the other, its persistent lack of attention to contextual factors (Mischel, 1968).

Very briefly, belimp theory posits that certain personality traits confer on the individual a propensity to perceive convergences and divergences between their *belief* that they can attain goals and the *importance* that they place on these goals. Belief and importance are conceptualized as two coordinates, together defining the *belimp plane* (see Fig. 2). Four quadrants are conceptualized within the belimp plane and, for heuristic purposes, labeled in terms of affect and motivation. Clockwise from top left, we have the quadrants of Hubris, Motivation, Depression, and Apathy. The two belimp coordinates (viz., belief and importance) are individually and jointly exposed to the effects of personality traits. Aspects of, mainly, conscientiousness and introversion confer a tendency to move *towards* the *belimp axis of symmetry* (see Fig. 2), while aspects of, mainly, neuroticism and trait EI confer a tendency to move away from the axis. Divergence from the axis creates

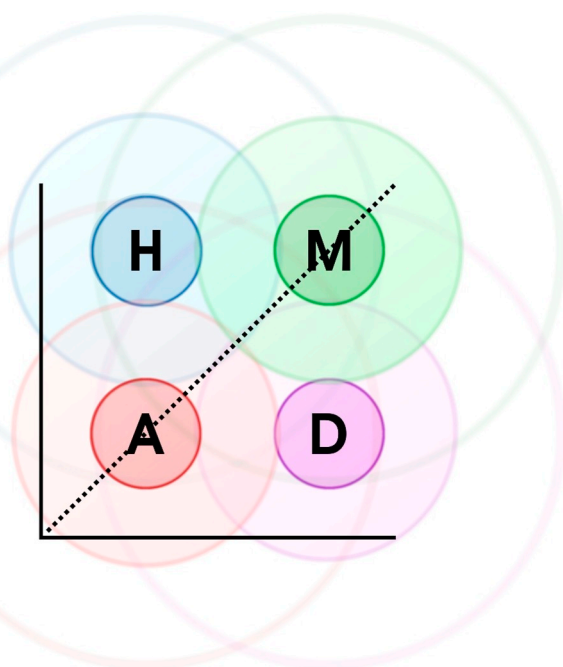


Fig. 2. The four quadrants (Hubris, Motivation, Depression, and Apathy) in the belief-importance (belimp) plane. Belief is depicted on the y axis (ordinate) and importance is depicted on the x axis (abscissa). For a full explanation of the figure, consult Petrides (2011). According to the belimp hypothesis, which provides a general mechanism for linking personality to action, affect, and behavior, personality traits exert a strong influence on the position of an individual in the belimp plane. The belimp mechanism helps connect personality traits, which originate in the first two Psychobionomic stages (Thinking and Feeling; see Fig. 1) to their full manifestations and consequences in the last two stages (Perceiving and Acting).

discrepancies (residuals) that can be either positive (belief > importance) or negative (belief < importance). It is hypothesized that personality traits determine both the individual's location on the axis of symmetry (high versus low) as well as the direction of the discrepancies (positive versus negative).

Belimp theory describes a general mechanism linking personality traits to affect, motivation, and action, spanning mainly the last three Psychobionomic stages: feeling, perceiving, and acting. For example, high neuroticism creates a negative discrepancy between what goals the individual perceives as important in their life and whether they believe they can attain those goals, which increases the likelihood of psychopathological conditions like anxiety and depression. Belimp theory conceptualizes personality traits as generating principles of outward manifestations without, however, accounting for the origination of the traits themselves.

According to Psychobionomy, personality traits represent dynamic specifications originating in the stages of Thinking and Feeling (see Fig. 1), from a combination of conscious and subconscious processes directed or mediated through the individual's Identity, and subsequently manifesting through interactions with elements and mechanisms in the last two stages (Perceiving and Acting). These interactions are often bi-directional such that, for example, personality traits can direct and color someone's perceptions in the world (e.g., seeing the glass as half-empty, rather than half-full), but colored perceptions also serve to further entrench existing or developing personality dispositions. While in belimp theory personality traits are seen as major influences on people's goals and confidence to achieve them, they are nevertheless compound psychological constructs effectively spanning all four Psychobionomic stages and, consequently, they cannot have irreducible explanatory power.

5.3. Broad links with other general approaches to personality

Psychobionomy can incorporate personality theories as well as personality approaches that move in very different directions to individual differences psychology. While it is not possible to elaborate on this prospect herein, highlighting a few broad links with some such theories and approaches is certainly worthwhile.

Starting with humanistic/phenomenological theories of personality, like Kelly's, Maslow's, and Rogers', one notes how they, just like Psychobionomy, emphasize the significance and wholistic nature of subjective experience, to which they ascribe central importance. They also recognize the internal need of the individual to move towards fulfilment and self-actualization, which is acknowledged in Psychobionomy too, however, as a process of ego divestment towards unification with the world, rather than a process of ego development towards the attainment of peak experiences, special states, and personal self-actualization (e.g., Maslow, 1968). Phenomenological approaches are limited in relation to Psychobionomy because they are unable to move beyond the concept of the person nor are they in a position to explain how the person actually emerges. Moreover, they are completely silent in relation to non-psychological aspects of life, including the bulk of phenomena and processes classified under Psychobionomic stage 3 (Fig. 1).

In a similar vein, it is not difficult to identify parallels between Psychobionomy and the depth psychologies of Freud, Jung and others, whose springboard is the fact, disregarded in individual differences psychology, that people's experiences and behaviors are powerfully affected by deep-rooted conflicts, emotions, and urges of which the individual is typically unaware. Psychobionomy also shares the generality of the depth psychologies even in their outmost variants (e.g., Reichian approaches), although, as should be evident from this short introduction, it does so from an integrated perspective that does not concede a division between the individual and the environment. Some of the foregoing parallels will become more obvious in the next section, where I discuss a Psychobionomic process that enables individuals to delve deep into their psyche, face the contents of their subconscious, and clear them out.

6. A generic application of Psychobionomy

Psychobionomy presents a comprehensive and clearly delineated representation of human experience, as illustrated in Fig. 1 that is absent from existing theories of personality. The latter systematically conflate activities across the four Psychobionomic stages, and, crucially, ignore the underlying Generic Ground of Pure Knowing. In contrast to Psychobionomy, extant personality theories (most especially those in the individual differences tradition) are largely centred on the stage of Acting (stage 4 in Fig. 1) from where they attempt to gain insights that sprawl across the other three stages. This is exactly the wrong direction of travel because the perception of doership in a materialistic world rests upon numerous unwarranted assumptions that have been unconsciously formulated in the three preceding stages of human experience (see Fig. 1). We cannot hope to illuminate the thinker, feeler, and perceiver by investigating the doer, although we can illuminate the doer by investigating the preceding identities.

The generality of Psychobionomy renders it germane to all life domains as might be expected from a system whose explanatory reach systematically extends from pure objectless knowing, all the way to action in the phenomenal world. Due to space pressure, I can present only one generic application of Psychobionomy in the area of clinical counselling.

We typically attempt to tackle problems (in health, personal finance, relationships, etc.) that arise in the phenomenal world (stage 4 in Psychobionomy) exclusively from within that stage (take medication, arrange loan, change spouse, etc.). Psychobionomy encourages the individual to engage in an *unfolding process of involution* that directs

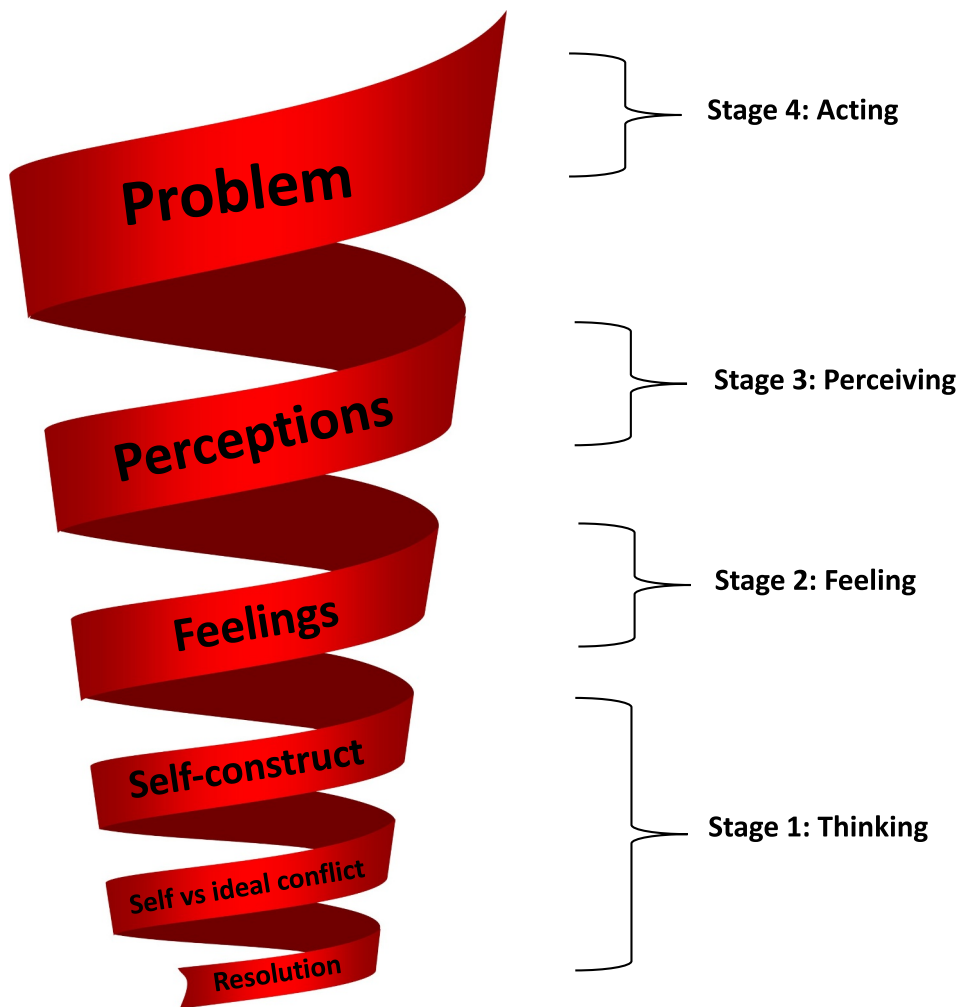


Fig. 3. The infolding process of involution mapped onto the four Psychobionomic stages. The process is intended gradually to move the individual from their entrenched psychological positioning as a doer in the phenomenal world (stage 4) down to the basic stage of Thinking (stage 1). During this process, the individual comes face to face with hidden aspects of their personality, latent assumptions about their self and the world, and blind spots that can then be juxtaposed against their ideal Self-construct (Self vs Ideal conflict). Involution is about regressing the psychological positioning of the individual from Psychobionomic stage 4 (Acting), where they are unconsciously located, into stage 1, wherein all of the individual's actions, perceptions and dispositions originate. The infolding process gradually unlocks the subconscious mind (cf. Freud's, 1915 'unconscious'⁵), bringing up its suppressed contents to conscious awareness in order that they may be dealt with and integrated. © K.V. Petrides 2018 – London Psychometric Laboratory. All rights reserved.⁵

attention inwards through the system's four stages and, ultimately, for anyone sincerely aspiring to that attainment, to psychological stabilization in the Generic Ground of Pure Knowing. Upon this attainment, the individual no longer identifies with their self-construct (personality), but rather, stabilizes psychologically in an a priori dimension that is beyond and independent of thought and thinking. Involution uniquely invites the individual to delve deep inside their own psychology, with a view not necessarily to solve a problem, but to rise above it.

Psychobionomy posits that in order to deal successfully with a problem in the phenomenal world (stage 4; see Fig. 1), it is necessary to retreat to prior stages. The same also applies to problems experienced in other stages of the system. It is vital for the mental health and adaptation of the human being to realize the potential that each of these stages offers for establishing an Identity in that stage (i.e., as a thinker, a feeler, a perceiver, and an actor) because challenges at any one stage cannot be met solely by action within that particular stage. Unless the individual learns to retreat psychologically to more basic stages, they will get caught up in endless activity within the stage in which the initial problem was originally encountered. This represents a grave threat to mental well-being, especially since psychological problems can mutate and metastasize.

Fig. 3 illustrates part of the process. When the individual faces a problem in the phenomenal world, they typically attempt to resolve it at that level (stage 4) by manipulating the external circumstances. In direct contrast, according to the process of involution, the individual needs to withdraw attention from stage 4 (Acting) to stage 3

(Perceiving). This requires cessation of activity together with analysis of perception, including identification of the key actors involved and a profound understanding of their motivations and actions. Next, the individual needs to drop into stage 2 (Feeling) by focusing exclusively on the emotions they are experiencing without analysis or justification. Movement into stage 1 (Thinking) involves three distinct steps whereby the individual first assesses all the information gathered in the previous stages with reference to their underlying self-construct, which will shed light on psychological limitations that normally remain hidden, then compares this self-construct with their ideal self-construct, and, finally, either undertakes all psychological and physical actions required to eliminate the gaps between these two or, alternatively, simply monitors the originating thoughts without any action or judgement until they subside. The choice between action and inaction in the last step of the involution process determines whether the individual will eventually resume their psychological positioning as a doer in stage 4, where they will soon have to face another challenge, or whether they will embark on an effort to stabilize psychologically in the Generic Ground of Pure

⁵ Psychobionomy admits the general ideas of Freud's (1915) "unconscious" and Jung's (1916/1966) "collective unconscious" mind, including the existence of archetypes common to all individuals. In Psychobionomic terminology, Freud's unconscious and Jung's collective unconscious are together termed as the "subconscious mind" and located under the system's Thinking stage (Fig. 1), with the collective unconscious constituting the major segment of the deeper levels of the unconscious.

Knowing, where challenges can be mentally dropped as they arise.

Note that the process of involution maps broadly onto the four objectives of science (description, explanation, prediction, and control). Description of phenomena primarily takes place in the stage of Acting, explanation primarily takes place in the stage of Perceiving, prediction primarily takes place in the stage of Feeling, and control primarily takes place in the stage of Thinking. If the individual wishes to control their experience of reality, ultimately, they will have to intervene at the stage of Thinking and gradually unfold the required principles and objectives.

7. Challenges in personality psychology from the Psychobionomic perspective

The basic challenges in the field of personality and individual differences are not new. Many stem from an increasingly dogmatic, albeit undeclared, adherence to exclusive paradigms (e.g., positivism) or exclusive methodologies (e.g., hypothetico-deductive method) as the only possible ways of doing science. However, Exclusive commitment to some paradigms or methodologies inevitably leads to alienation from others and nowhere is this more evident than in the persisting chasm between nomothetic and idiographic approaches to personality psychology, which I have previously discussed in other contexts (Boyle et al., 2016; Petrides, 2018). In introducing the terms “nomothetic” and “idiographic”, Windelband, 1894/1998 saw them as complementary scientific perspectives differing in their explanatory focus, but with Allport's (1937) interpretation and subsequent embellishment of them, not only have they come to acquire a different meaning, but also the evaluative connotations of “scientific” for the former and “unscientific” for the latter (Skaggs, 1945).

The ensuing uncritical overreliance on nomothetic approaches in personality and individual differences research has led to a “triumph of the aggregate” (Danziger, 1990) threatening to establish a personality psychology without the person. It has also inhibited the synthesis of the experimental and correlational paradigms, obliquely relegating the latter to second-class status (Cronbach, 1957), for if our interest is in the discovery of general laws of behavior, then such laws presuppose the absence of conspicuous individual differences. It is necessary to bridge this gap through the adoption of an integrative approach as proposed in the system of Psychobionomy and practically demonstrated in the theories of trait emotional intelligence and belief-importance (belimp), where numerical trends are complemented by mechanisms centered on the individual.

Psychology as a whole, and the field of personality and individual differences specifically, remain enthralled by, and eager to duplicate, the ostensible success of the natural sciences, which have casually embraced a philosophy of materialism (Whitehead, 1925/2011). This has caused an unrestrained import of positivist concepts, methods, and technologies with a parallel deprecation of methodologies that are palpably more compatible with a psychology of the individual person, such as introspection. Yet the question of whether the methodologies of the natural sciences are appropriate for the investigation of the totality of psychological phenomena has always loomed large over the field (Bickhard, 1992) and has recently been joined by the more intriguing question of whether the methodologies of the natural sciences are appropriate for the natural sciences themselves (Le Fanu, 2010; Smolin, 2015).

Contrary to the prevailing paradigm of materialistic reductionism that has been struggling to travel in the exact opposite direction, Psychobionomy advocates the dissolution of the physical into the mental and of the outer into the inner as per the diagram in Fig. 1. The system points out that physical objects, and materialistic reality more broadly, are inseparable from the perceptions through which they are detected, which, in turn, are inseparable from the concepts through which they are interpreted, which, in turn, are inseparable from the consciousness through which they are known. Thus, physical objects can be sequentially reduced to perceptions, concepts, and, finally, knowing. A thorough examination of our own, moment-to-moment,

direct experience of reality reveals that a physical object never exists without a perception, a perception never exists without a concept, and a concept never exists without the knowing of it. In stark contrast, knowing self-evidently can exist without concepts, concepts self-evidently can exist without perceptions, and perceptions self-evidently can exist without physical objects. Physical objects are not simply devoid of inherent reality, they are, in fact, experientially redundant.

Disciplines that focus on the physical aspect of reality (e.g., physics) will be more limited in scope than those that focus on the mental aspect (e.g., mathematics), which, in turn, will be more limited than those that focus on the consciousness aspect (e.g., philosophy). Disciplines that are unfocused in this respect, investigating subject matter that cuts haphazardly across all four Psychobionomic stages, are bound to become, initially, factional and, subsequently, chaotic (e.g., sociology; Turner, 2006).

Psychologists have labored intensively to emulate the natural sciences, most notably by importing, lock, stock, and barrel, their paradigms and methodologies, but even going so far as to propose a division of their own discipline into a part concerning its biological aspect, which is “science” and a part concerning its sociological aspect, which is “not science” (Skaggs, 1945). Such efforts at deferential compliance notwithstanding, psychologists and social scientists have received short shrift from their natural science peers. Thus, Feynman (1974), in his widely quoted polemic about “Cargo cult sciences”, felt it apposite to charge psychology and related disciplines with various transgressions, not the least of which was, in his estimation, lack of scientific integrity. Psychobionomy places the natural sciences mainly at stages 3 and 4 of the system (Perceiving and Acting), which renders their paradigms generally unsuitable for the investigation of psychological (mental and emotional) phenomena that originate in stages 1 and 2 (Thinking and Feeling) and are, thus, more fundamental. In point of fact, Psychobionomy proposes a reverse-reductionism, whereby apparently physical phenomena are gradually reduced to mental representations and, ultimately, to pure Knowing.

Another challenge for personality psychology concerns the idle zeitgeist view of introspection and self-reports as inferior to other methods of psychological assessment. Howard (1994; p. 399) poignantly comments “...it seems as if self-report-bashing might be an article of faith of some Scientific Apostle's Creed ‘I believe in good science; the empirical determination of theory choice, the control of extraneous variables, and the fallibility of self-report measures.’” Self-reports, as indicators of self-perceptions, have been completely central in both trait EI and belief-importance theory and they are important in Psychobionomy too. Psychobionomy does not endorse the unproven conjecture of an “objective existence” that is independent of the mind of the observer, simply because this is never true in our direct experience. No object in the stage of Perceiving is ever perceived independently of Thinking and the very conceptual definition of objectivity is itself subjectively created. Even those aspects of the putative objective world to which mainstream scientific theories appeal in order to explain emotional experience (e.g., the appeal of neuroanatomists to the brain; Papez, 1937) or to validate emotional self-reports (e.g., the appeal of psychometricians to behavioral indices; Haefel & Howard, 2010) are, ultimately, themselves representations in the mind – viz., private perceptions. For there can never exist a brain that is independent of the concept of the brain.

A further erroneous belief, viz., that psychology deals with objective evidence as opposed to philosophy that deals with abstractions (e.g., Gladstone, 1990) serves to sever the former from its mother discipline, casting it into the arms of materialist-reductionist approaches (artificial intelligence, neurophysiology, etc.), which strive anxiously to discount the subjective nature of the mind and, indeed, the mind as a whole. In such a context, it is little wonder that the study of self-perceptions is actively discouraged and its methodologies, from introspection to self-report, routinely disparaged. Quite unclear, however, is how we, as psychologists, could possibly hope to achieve an understanding of the mind and its contents while abandoning the very methodologies that afford us direct observational contact with mental life.

Self-perceptions pervade the Psychobionomic stage of thinking whence all other stages originate. Not simply are they an inalienable

part of human experience, they are the very generators of it. As previously stated, Identity is nothing but a nexus of self-perceptions that, largely unconsciously, sprouts, flourishes, and shapes the individual's feelings, other-perceptions, and actions. It is essential for the well-being of the individual to introspect until that partially hidden Identity is fully and precisely understood – its origin, nature, and function. That complete understanding can only arise from psychological positioning in the Generic Ground of Pure Knowing. Thinking cannot be understood from within the stage of Thinking, just as none of the other Psychobionomic stages can be understood from within the selfsame stage, but only from preceding, relatively more basic, stages.

8. Conclusion

Psychobionomy invites the interested individual, be they expert or lay, to start building the awareness that will, in time, allow them to witness and contemplate their activities in all four Psychobionomic stages, so that they may confirm, in their own direct experience, the system's veracity and utility in all aspects of everyday life. The individual engaging in this process must be armed with patience and ready to give up dearly held assumptions, pet theories, and beliefs in favor of the evidence presented to them by their own direct experience. They may then eventually arrive at an all-encompassing and perennially veridical understanding of the *total human personality*: their own.

The recurrent challenges for the whole of science that are fragmentation and compartmentalization apply with a vengeance to the field of personality and individual differences, ravaged as it is by micro-theories and jingle-jangle constructs. Psychobionomy addresses these challenges head-on by proposing a unifying theoretical framework spanning the entire realm of human experience, from pure objectless knowing to full-on doership in the phenomenal world. This system is able to accommodate insular theories and synthesize data accruing from disparate approaches. More important, it is a system that can lead the individual human being to the holy grail of existence, that is, Self-Knowledge – Γνωθί Σαυτόν.

References

- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt, Rinehart, & Winston.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bardi, A., & Zentner, M. (2017). Grand challenges for personality and social psychology: Moving beyond the replication crisis. *Frontiers in Psychology*, 8, 2068. <https://doi.org/10.3389/fpsyg.2017.02068>.
- Barrett, P. T., Petrides, K. V., Eysenck, S. B., G., & Eysenck, H. J. (1998). The Eysenck Personality Questionnaire: An examination of the factorial similarity of P, E, N, and L across 34 countries. *Personality and Individual Differences*, 25, 805–819.
- Baumert, A., Schmitt, M., Perugini, M., ... Wood, D., Wrzus, C. (2017). Integrating personality structure, personality process, and personality development. *European Journal of Personality*, 31, 503–528.
- Bickhard, M. H. (1992). Myths of science: Misconceptions of science in contemporary psychology. *Theory & Psychology*, 2, 321–337.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, 117, 187–215.
- Boag, S. (2011). Explanation in personality psychology: “Verbal magic” and the five-factor model. *Philosophical Psychology*, 24, 223–243.
- Borghans, L., Duckworth, A. L., Heckman, J. J., & Ter Weel, B. (2008). The economics and psychology of personality traits. *Journal of Human Resources*, 43, 972–1059.
- Box, G. E. P. (1979). Robustness in the strategy of scientific model building. In R. L. Launer, & G. N. Wilkinson (Eds.). *Robustness in statistics*. New York: Academic Press.
- Boyle, G. J., Stankov, L., Martin, N. G., Petrides, K. V., Eysenck, M. W., & Ortet, G. (2016). Hans J. Eysenck and Raymond B. Cattell on intelligence and personality. *Personality and Individual Differences*, 103, 40–47.
- Bridgman, P. W. (1927). *The logic of modern physics*. New York: Macmillan.
- Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. Cambridge: New York.
- Cornell, D. M. (2016). Taking monism seriously. *Philosophical Studies*, 173, 2397–2415.
- Cronbach, L. J. (1957). The two disciplines of scientific psychology. *American Psychologist*, 12, 671.
- Danziger, K. (1990). *Constructing the subject*. Cambridge: CUP.
- Endler, N. S., & Parker, J. D. (1992). Interactionism revisited: Reflections on the continuing crisis in the personality area. *European Journal of Personality*, 6, 177–198.
- Eysenck, H. J. (1977). *Psychology is about people*. Harmondsworth: Penguin.
- Eysenck, H. J. (1992). Four ways five factors are not basic. *Personality and Individual Differences*, 13, 667–673.
- Feynman, R. P. (1974). Cargo cult science. *Engineering and Science*, 37, 10–13.
- Fisher, A. J., Medaglia, J. D., & Jeronimus, B. F. (2018). Lack of group-to-individual generalizability is a threat to human subjects research. *Proceedings of the National Academy of Sciences*, 115, E6106–E6115.
- Freud, S. (1915). The unconscious. *Standard edition*. Vol. 14. *Standard edition* (pp. 159–204).
- Gladstone, R. (1990). Psychology versus philosophy. *American Psychologist*, 45 (472-).
- Haefel, G. J., & Howard, G. S. (2010). Self-report: Psychology's four-letter word. *American Journal of Psychology*, 123, 181–188.
- Hall, C. S., & Lindzey, G. (1957). *Theories of personality*. New York: Wiley.
- Howard, G. S. (1994). Why do people say nasty things about self-reports? *Journal of Organizational Behavior*, 15, 399–404.
- Jung, C. G. (1966). The structure of the unconscious. *Two essays on analytical psychology* (2nd ed.). vol. 7 Princeton, N.J: Bollingen Collected works of C. G. Jung. (Original published in 1916).
- Kelley, T. L. (1927). *Interpretation of educational measurements*. Yonkers, NY: World Book Co.
- Lamiell, J. T. (2003). *Beyond individual and group differences: Human individuality, scientific psychology, and William Stern's critical personalism*. Thousand Oaks, CA: Sage.
- Lamiell, J. T. (2013). Statisticism in personality psychologists' use of trait constructs: What is it? How was it contracted? Is there a cure? *New Ideas in Psychology*, 31, 65–71.
- Laplante, L., Mantovani, P., Adolphs, R., Chang, H., Mantovani, A., McFall-Ngai, M., ... Pradeu, T. (2019). Why science needs philosophy. *Proceedings of the National Academy of Sciences*, 116, 3948–3952.
- Le Fanu, J. (2010). Is modern genetics a blind alley? Yes. *BMJ*, 340, c1156.
- Maslow, A. H. (1968). *Toward a psychology of being* (2nd ed.). Princeton, NJ: Van Nostrand.
- Meehl, P. E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology*, 46, 806–834.
- Mischel, W. (1968). *Personality and assessment*. New York: Wiley.
- Papez, J. W. (1937). A proposed mechanism of emotion. *Archives of Neurology and Psychiatry*, 38, 725–743.
- Parfit, D. (1971). Personal identity. *The Philosophical Review*, 80, 3–27.
- Parfit, D. (1984). *Reasons and persons*. Oxford: OUP.
- Petrides, K. V. (2001). *A psychometric investigation into the construct of emotional intelligence*. Doctoral dissertation University College London.
- Petrides, K. V. (2011). A general mechanism for linking personality traits to affect, motivation, and action. *New Ideas in Psychology*, 29, 64–71.
- Petrides, K. V. (2018). On the deeper roots of trait emotional intelligence. In A. Scarinzi (Ed.). *Recasting aesthetic experience: Emotions and the “continuity principle”* (pp. 10–33). Göttingen: Cuvillier (ISBN 978-3-7369-9884-1).
- Petrides, K. V., & Frederickson, N. (2011). An application of belief-importance theory with reference to academic achievement. *British Journal of Educational Psychology*, 81, 97–111.
- Petrides, K. V., Gómez, M. G., & Pérez-González, J. C. (2017). Pathways into psychopathology: Modeling the effects of trait emotional intelligence, mindfulness, and irrational beliefs in a clinical sample. *Clinical Psychology & Psychotherapy*, 24, 1130–1141.
- Petrides, K. V., Mikolajczak, M., Mavroveli, S., Sánchez-Ruiz, M.-J., Furnham, A., & Pérez-González, J.-C. (2016). Recent developments in trait emotional intelligence research. *Emotion Review*, 8, 335–341.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273–289.
- Sechrest, L. (1976). Personality. *Annual Review of Psychology*, 27, 1–27.
- Shaffer, J. A., DeGeest, D., & Li, A. (2016). Tackling the problem of construct proliferation: A guide to assessing the discriminant validity of conceptually related constructs. *Organizational Research Methods*, 19, 80–110.
- Skaggs, E. B. (1945). Personalistic psychology as science. *Psychological Review*, 52, 234–238.
- Smolin, L. (2015). You think there's a multiverse? Get real. *New Scientist*, (3004), 24–25.
- Spearman, C. (1904). “General intelligence,” objectively determined and measured. *American Journal of Psychology*, 15, 201–292.
- Thorndike, E. L. (1921). Intelligence and its measurement: A symposium-I. *Journal of Educational Psychology*, 12, 124.
- Turner, J. H. (2006). American sociology in chaos: Differentiation without integration. *The American Sociologist*, 37, 15–29.
- Van der Linden, D., Pekaar, K., Bakker, A. B., Aitken Schermer, J., Vernon, P. A., & Petrides, K. V. (2017). Overlap between the general factor of personality and emotional intelligence: A meta-analysis. *Psychological Bulletin*, 143, 36–52.
- Van der Linden, D., Schermer, J. A., de Zeeuw, E., Dunkel, C. S., Pekaar, K. A., Bakker, A. B., ... Petrides, K. V. (2018). Overlap between the general factor of personality and trait emotional intelligence: A genetic correlation study. *Behavior Genetics*, 48, 147–154.
- Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20, 158–178.
- Whitehead, A. N. (2011). *Science and the modern world*. Cambridge University Press (Original published in 1925).
- Windelband, W. (1998). Geschichte und Naturwissenschaft [History and natural science]. *Theory & Psychology*, 8, 5–22 (Original lecture delivered in German in 1894).