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# JOURNAL OF SCIENTIFIC EXPLORATION

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EDITORIAL

Scientific Certitude

STEPHEN E. BRAUDE

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I’ve been both fascinated and distressed by the arguments raging over how best to respond to the covid-19 pandemic. In particular, I’ve been struck by the way people claim scientific authority for their confident assurances of what needs to be done. And I’m especially intrigued by the scorn they often lavish on those who hold differing views on what science is telling us. The heat generated by the resulting debates is strikingly similar to the heat generated by debates over the science connected with human-caused climate change. And in both cases, the disputants too often presuppose indefensibly naïve views about scientific authority and certitude, apparently unaware that even the allegedly most obvious *logical* truths lack the certainty attributed to scientific authority in these debates.

As a rule, I dislike re-circulating my Editorials, but I think it’s time to resurrect one (modestly tweaked) from a few years ago (Braude, 2017), addressing precisely this issue.

.....

*Man is a rational animal who always loses his temper when he is called upon to act in accordance with the dictates of reason.*

—Oscar Wilde

I’ve often noticed how debates within the SSE community sometimes parallel debates in the political arena, perhaps especially with respect to the passion they elicit and the intolerance and condescension sometimes lavished on members of the “opposition.” Occasionally, of course, the debates in the SSE are nearly indistinguishable from those

in the political arena—say, over the evidence for human-caused climate change. But what I find most striking is how the passion, intolerance, etc.—perhaps most often displayed by those defending whatever the “received” view happens to be—betrays either a surprising ignorance or else a seemingly convenient lapse of memory, one that probably wouldn’t appear in less emotionally charged contexts. What impassioned partisans tend to ignore or forget concerns (a) the tentative nature of both scientific pronouncements and knowledge claims generally (including matters ostensibly much more secure than those under debate), as well as (b) the extensive network of assumptions on which every knowledge claim rests.

So I’d like to offer what I hope will be a perspective-enhancer, concerning how even our allegedly most secure and fundamental pieces of *a priori knowledge* are themselves open to reasonable debate. A widespread, but naïve, view of logic is that no rational person could doubt its elementary laws. But that bit of popular “wisdom” is demonstrably false. And if that’s the case, then so much the worse for the degree of certitude we can expect in more controversial arenas. Let me illustrate with a few examples.<sup>1</sup>

Consider, first, an empirical context in which some have tried to deploy a logical law. In philosophical discussions of the nature and structure of the self, many writers invoke an alleged version of the *law of non-contradiction* to argue for the existence of distinct parts of the self. This strategy is at least as old as Plato and may be more familiar to *JSE* readers in the form it took with Freud. Ironically, though, these arguments highlight just how insecure this dialectical strategy is (for a more detailed account, see Braude, 1995, Chapter 6).

Consider: In debates about the nature of multiple personality/dissociative identity disorder (MPD/DID), many argue that because different alter personalities/identities can apparently have different and even conflicting epistemic states, the self must have distinct parts that correspond to those conflicting states. For example, Kathleen Wilkes writes:

We break this law [of non-contradiction] as soon as we permit ourselves to say that one and the same entity both knows and does not know that *p*, for nothing can, at time *t*, be said to  $\phi$  and not to  $\phi$ . (Wilkes, 1988, 142)

Of course, to those without any philosophical axe to grind, cases of DID might suggest that one can indeed be said to  $\phi$  and not to  $\phi$  at the same time.<sup>2</sup> Since that could easily be taken to suggest that the law of noncontradiction has some hitherto unacknowledged limitation, and since one must always be open to the possibility that logical laws have limitations of one sort or another, let's examine the status of the law which some dissociative and other phenomena appear to violate.

Notice, first, that what logicians generally consider to be the law of noncontradiction is either (a) the formal, syntactic law " $\sim(A \cdot \sim A)$ ," usually rendered more informally as "not-(A and not-A)," or else (b) a claim in logical semantics about truth-value assignments—namely, "no sentence can be both true and false" (or alternatively, "the conjunction of any sentence  $p$  and its denial not- $p$  is false"). But the first of these is not violated by dissociative conflicts, and the second is not even clearly a law.

Consider the syntactic law first. It concerns the *form*, rather than the content, of strings of symbols within a formal system. It takes any compound expression of the form "not-(A and not-A)" to be a theorem, for *any* well-formed formula "A". But strictly speaking, the law doesn't pertain to sentences of any actual natural language. The syntactic law of noncontradiction does nothing more than sanction a particular arrangement of expressions within a certain set of formal systems. And although one can easily determine which symbolic expressions are theorems, those logical systems don't, in addition, offer a decision procedure for determining which sentences in a natural language are true or false. On the contrary, the relationship of formal to natural languages has to be both stipulated and investigated. And ultimately, the utility of a formal system of logic must be evaluated empirically, by seeing whether or how well it applies to various domains of discourse—for example, by seeing whether the truth-values it would assign to actual sentences matches our independent judgments about what those truth-values should be.

In fact, formal logical systems don't even specify which expressions in a natural language count as legitimate instances of a simple (i.e., noncompound) formula "A"—hence, which natural language expressions are instances (or violations) of its theorems. Although logicians generally agree that the simple formulae of the systems should

represent declarative sentences, there's considerable debate over which particular *kinds* of declarative sentences are suitable. Interestingly, many would say that as far as the purely formal laws of logic are concerned, "A" could stand even for sentences whose truth-value or meaning are indeterminate, such as "unicorns are compassionate," "the square root of 4 is asleep," and "Zeus is insecure." But then it seems as if the uninterpreted formal law of noncontradiction is simply irrelevant to the cases under consideration. At best, those cases appear to challenge a semantic counterpart to the formal law, either

(NC<sub>1</sub>): The conjunction of any sentence  $p$  and its denial  $\text{not-}p$  is false

or

(NC<sub>2</sub>): No sentence can be both true and false

We needn't worry at the moment about whether (or to what extent) either of these versions of the law of noncontradiction is satisfactory. What matters now is that even if the law of noncontradiction turns out to be a viable principle of logical semantics, it may still have a variety of significant limitations. In fact, the utility of formal logical laws varies widely, and the interpretation of those laws has proven to be a notoriously tricky business. As with all formal systems, no system of logic determines in which domains (if any) its expressions may be successfully applied. Students of elementary logic learn quickly that there are differences between the logical connectives "and" and "or" and many instances of the words "and" and "or" in ordinary language. Similarly, not all "if...then..." sentences are adequately handled by the material conditional in standard systems of sentential logic, although that logical connective is undeniably useful in a great range of cases. Moreover, varieties of nonstandard and "modal" logics have been developed in attempts to represent types of discourse resistant to standard logical systems.

But even more relevantly, in most standard systems of logic, the formal law of noncontradiction, "not-(A and not-A)," is demonstrably equivalent to the *law of the excluded middle*, " $A \vee \sim A$ " (i.e., "A or not-A"). Like the formal law of noncontradiction, the law of the excluded middle concerns the form rather than the content of expressions. It takes any



compound formula of the form “A or not-A” to be a theorem (or logical truth), no matter what formula “A” happens to be. Now the semantic sibling of the syntactic law of the excluded middle is called the *law of bivalence*, which states that every sentence is either true or false. But the law of bivalence has faced numerous challenges throughout the history of logic (in fact, since the time of Aristotle). Many have argued that it fails for sentences in the future tense and sentences whose singular terms refer to nonexistent objects. Moreover, some logicians consider these difficulties sufficiently profound to warrant the development of logical systems that retain the syntactic law of the excluded middle but reject the semantic law of bivalence (see, e.g., van Fraassen, 1966, 1968; Thomason, 1970). Now granted, these same logicians don’t also reject the semantic version of the law of noncontradiction. Nevertheless, their reservations concerning bivalence should give us pause (especially in light of the caveats noted above regarding the limitations of formal systems generally). The debate over bivalence illustrates an important point—namely, that *the relative impregnability of a formal logical law may not be inherited by its semantic counterpart (i.e. one of its interpretations)*. But at the very best, it’s only the semantic counterpart of noncontradiction that rests at the center of the Platonic/Freudian arguments for parts of the self. And in fact, as far as Plato’s argument for the parts of the soul is concerned, the argument turns on an even more exotic interpretation of noncontradiction (see Braude, 1995, for details).

But before we leave this topic, it’s important to note that

(NC<sub>1</sub>): The conjunction of any sentence *p* and its denial not-*p* is false

and

(NC<sub>2</sub>): No sentence can be both true and false

are likewise problematical, and probably more so than most *JSE* readers appreciate. First of all, (NC<sub>1</sub>) has numerous counterexamples familiar to students of logic and the philosophy of language. For example, it seems to fail for sentences such as the aforementioned “unicorns are compassionate,” “the square root of 4 is asleep,” and “Zeus is insecure,” which seem to lack truth-value. Many (but, notably, not all) would say

that when a sentence lacks truth-value, the conjunction of that sentence and its denial also lacks truth-value.

The somewhat more common ( $NC_2$ ) has similar problems. Most notoriously, perhaps, it fails for the self-referential sentence “this sentence is false,” as well as for kindred expressions that don’t seem even remotely suspicious inherently. For example, it fails for the innocent “the sentence on page 42 is false,” when that sentence happens to be the only sentence on page 42. If these sentences have any truth-value at all, it seems as if they will be both true and false.

Furthermore, ( $NC_2$ ) apparently fails for quite mundane present-tense sentences. For example, “Socrates is sitting” may be true at one time and false at another. Of course, one standard response to such cases would be to claim that the sentence “Socrates is sitting” contains an implicit reference to its time of production, so that it’s not really the same sentence that’s true at one time and false at another (i.e., those non-simultaneous sentences would allegedly differ in meaning or express different propositions). For reasons too complex to be explored here, it seems to me that this particular maneuver creates more problems than it solves. Indeed, I’ve argued that the standard Aristotelian notion of contradictories (stated in terms of opposing truth-values) fails conspicuously for a tensed natural language, and that tensed contradictories can have the same truth-value (see Braude, 1986, for a discussion of these issues). Although I recognize that my position is most definitely a minority view, I submit that there are additional serious reasons here for challenging the straightforward application of ( $NC_2$ ) to a real natural language—hence, for questioning its inviolability outside of the highly artificial or overly simplified linguistic situations to which logical laws apply easily. In any case, this nest of issues illustrates again the kinds of substantive and difficult-to-resolve concerns involved in evaluating what many consider to be our most cherished logical principles.

Please note that my point is not that the semantic law of noncontradiction is useless as a philosophical tool. And the moral is not simply that logical laws (like formal laws generally) may not hold in all domains (although that’s certainly true and relevant here). Rather, the point is also that logical laws hold *in real life* only for sentences we regard as *acceptable* (or *legitimate*) and *appropriate*, or as understood

in certain ways rather than others. But these interpretations and classifications of linguistic entities are *practical* decisions, made as part of a much larger network of interrelated philosophical commitments. Accordingly, those decisions don't stand or fall in isolation from others in various areas of philosophy and logic. In fact, they will continually be open for reassessment in light of apparent difficulties arising at numerous points in our overall system of commitments.

One further example reinforces that last point; it concerns an allegedly fundamental principle about what philosophers call *numerical identity*. Many have argued that it's an indisputable rational principle that each thing is identical with itself. However, it turns out that the concept of numerical identity is not so straightforward.

To see this, consider first the expression

$$(x)(x = x)$$

usually interpreted as "anything x is such that it's identical to itself," or more colloquially, "everything is self-identical." The acceptability of this alleged law of identity is not something we can decide by considering that law alone, and it's certainly not something that's immune from debate among reasonable and well-informed persons. Regarded merely as a theorem of a formal system, it has no meaning at all; it's nothing more than a sanctioned expression within a set of rules for manipulating symbols. But as an interpreted bit of formalism, it's acceptable only with respect to situations in which we attempt to apply it. And perhaps more interesting, it's *intelligible* only as part of a larger network of commitments. That is, what we mean by "everything is self-identical" depends in part on how we integrate that sentence with other principles or inferences we accept or reject.

To see this, consider whether we would accept as true the statement

$$(1) \text{ Zeus} = \text{Zeus}$$

To many, no doubt, that sentence seems as unproblematically true as the superficially similar

$$(2) \text{ Steve Braude} = \text{Steve Braude}$$

However, in many systems of deductive logic containing the rule of Existential Generalization (EG), from the symbolization of (1)—namely,

$$(1') z = z$$

we can infer

$$(3) (\exists x) x = z$$

which we typically read as

$$(4) \text{Zeus exists.}$$

And of course, many consider that result intolerable.

Not surprisingly, philosophers have entertained various ways of dealing with this situation. One would be to taxonomize different types of existence and interpret the rule of Existential Generalization as applying only to some of them (for example, prohibiting its application to cases of mythical or fictional existence). Another approach would be to get fussy about the concept of a *name*. We could decide that “Zeus” is not a genuine name and that genuine names (like “Steve Braude”) pick out only real existent individuals, and not (say) mythical or fictional individuals. (Readers might be especially surprised to learn that some have actually endorsed the view that we should not consider “Hamlet” or “Zeus” to be names when they pick out fictional or mythical characters.) In any case, both these approaches concede certain (but different) sorts of limitations to standard predicate logic and the way or extent it connects with ordinary discourse. Others prefer to tweak the logic directly, either syntactically or semantically. For example, some simply reject the rule of Existential Generalization and endorse a so-called (existence) *free* logic. Alternatively, some retain EG but adopt a substitutional interpretation of the quantifiers “(x)” and “(∃x),” so that instead of reading (3) as

$$(3') \text{There is (or exists) some } x \text{ such that } x \text{ is identical with } z \text{ (Zeus)}$$

we read it as

$$(3'') \text{Some substitution instance of “} x = z \text{” is true.}$$

The latter, they would say, is acceptable and carries no existential commitments.<sup>3</sup>

Now the reader needn't understand all these options. However, the moral should be clear enough, and it's not simply that these approaches raise concerns about what we can legitimately regard as a *thing*. What matters here is that the statement "everything is identical to itself" is not as clear or indisputable as one might think, and even more important in the present context, it's not simply true *no matter what*. Its truth (and indeed, meaning) turn out to be deeply conditional (rather than categorical), because they're inextricably linked to other principles or inferences we regard as acceptable, and that whole package of decisions can only be evaluated on pragmatic grounds. That's why it's perfectly respectable to decide that some solutions (say, to puzzles about identity) are appropriate for some situations and that other solutions are appropriate for others. We're not obligated to find a one-size-fits-all solution, and we're never constrained to select one solution or (context of inquiry) as privileged or fundamental.

The reason why I've gone on at such length about these matters is that they should serve as a cautionary note to those who all too easily display intolerance and condescension in empirical (or political) debates. It's completely clear that reasonable and informed people can disagree (and have disagreed) over the nature and status—and, indeed, the *meaning*—of what we take to be fundamental logical laws. Of course, scientific (and political) debates rest not only on logical assumptions but on various empirical and methodological assumptions as well. So presumably they're even more contentious and vulnerable to reasonable challenges than disputes over the foundations of logic. But then one would expect to find even more room there for reasonable and informed disagreement. Ideally, then, one would expect participants in scientific debates to be particularly open-minded, tolerant, and respectful of opposing views. So the next time you find yourself tempted to dismiss or deride with a disdainful flourish someone with whom you disagree over a matter of science (or politics), I encourage you to remember how venerable and substantive are the serious debates over the very foundations of our conceptual framework.

.....

Finally (to return to covid-19), and quite apart from the foregoing mini-treatise on a priori knowledge, I should mention that SSE members need to be especially vigilant about making simplistic appeals to “what the science shows.” Indeed, SSE members should know this as well as anyone. Probably every SSE member has an interest in phenomena disparaged by scientific orthodoxy, and probably every SSE member recognizes that science is conducted by fallible, and indeed corruptible and sometimes reprehensible, human beings. So you’d think that members of our community would be among the first to acknowledge the provisional nature of science generally and the history of scientific change and scientific error. Moreover, you’d think they would be among the first to be wary of confident scientific pronouncements made about areas deeply permeated by competing political and financial interests.

But perhaps most important, we don’t get a free pass to complain about the fallibility and (more than occasional?) dishonesty of scientific orthodoxy when it comes to our interests in psi, LENR, UFOs, or cryptozoology, and then contemptuously disparage qualified people who hold opinions contrary to ours on (say) climate change or covid-19. I believe we should be careful not to adopt the complacent or condescending attitude we so proudly and self-righteously attack in our publications and conferences. And we should smell danger immediately when ostensibly empirical disagreements generate a great deal of emotional heat. That’s a situation that clearly calls for caution, not dogmatism.

So I urge SSE members to be consistent in their confidence in science. If you’re so ready to challenge received science when it comes to LENR, unidentified aerial phenomena, sea monsters, or psi, it’s presumably because you realize that science is conducted by imperfect human beings, who often enough in the past have been driven by less-than-admirable motives, or who were simply victims of mere confusion. But then you forfeit the authority to be snotty and condescending about those who disagree with your views on human-caused climate change, or the nature and status of covid-19. Like it or not, those are areas about which competent and informed people *do* in fact disagree. So I say you should be among the first to be open to reasoned and serious minority opinion, and among the last to be dictatorial about what the science shows.

.....

Since this is the holiday season and an appropriate time for wallowing in *weltschmerz* and reflecting on the year that's coming to a close, I'd like once again to acknowledge and thank our dedicated and overworked team of Associate Editors and the many reviewers on whom we rely in vetting papers for inclusion in the *JSE*. As I've noted before, producing this *Journal* poses a distinctive challenge. Because the *JSE* deals with topics either shunned altogether or dealt with shabbily by more mainstream publications, the community of qualified readers for high-level peer review is quite small. Ideally, I'd prefer to have a larger team of Associate Editors, in order to lighten the editorial load for those who—perhaps inscrutably—continue to volunteer large chunks of time to shepherding submissions through our system. However, adding members to that team inevitably subtracts from the small pool of qualified referees. So I'm deeply grateful to my largely behind-the-scenes Associate Editors, who realize the need to maintain the high standard of scientific and scholarly excellence that's characterized the *JSE* since its inception, who recognize that there are only so many people on whom the *JSE* can rely, and who accordingly and generously donate their valuable time. I'm equally grateful to our many referees, many of whom we call upon over and over, simply because they have expertise in the relevant areas of research, and because the number of open-minded people who have that expertise remains depressingly small.

I must also express my deep appreciation for the breathtaking efficiency, technical panache, and thorough understanding of the publishing business of our Managing Editor, Kathleen Erickson. And although her usual responsibilities are daunting enough, this year my editorial team and I have needed Kathleen to help us navigate a new, user-unfriendly online system for handling submissions, evidently created by graduates of the Marquis de Sade School of Computer Programming. But fortunately, Kathleen handles our complaints and cries of outrage (or as my wife would say, our booing and hooing) promptly, effectively, and with remarkable equanimity. I'm sure *JSE*'s Associate Editors and referees agree with me on the pleasure and comfort of having Kathleen in our corner. We benefit, time and again,

from her assistance, patience, and good nature. In fact, I've never met anyone who can issue a reminder with such a winning combination of grace and coercion.

## NOTES

- <sup>1</sup> I'm indebted to Aune (1970) for much of what follows.
- <sup>2</sup> For example, that the multiple both knows and does not know who person S is, or that she both believes and does not believe that she is 6 years old.
- <sup>3</sup> For more on free logic, see Lambert (2004), Morscher and Hieke (2001), and van Fraassen, 1966. And for an accessible review of many of the issues concerning nonexistent objects, see Reicher (2016).

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## RESEARCH ARTICLE

# Using Virtual Reality to Test for Telepathy: A Proof-of-Concept Study

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**Abstract**—Telepathy is one of the most commonly reported psi-type experiences and represents the idea that one person can acquire information relating to the thoughts/feelings/intentions of another from a distance via a non-usual route. Typically, the procedure involves a *Sender* and a *Receiver* who are physically separated while the former attempts to relay target information to the latter. Refinements to this paradigm have included placing the *Receiver* in sensory isolation in an effort to enhance the signal-to-noise ratio of the signal, as seen in Ganzfeld research. Here the aim was to address the feasibility of using a virtual reality (VR) environment to fully immerse the *Sender* in their experience in an effort to boost the transmission of the target while keeping the *Receiver* in partial sensory isolation. Using this novel paradigm, we tested eleven pairs of Participants, each acting as *Sender* and *Receiver* across five trials. In each trial the *Sender* was immersed in a VR environment depicting a positive arousing experience (e.g., skiing downhill, driving a racing car). The *Receiver*'s task was to identify the correct target image from a set of 5 (i.e. 20% chance) matched for mean valence and arousal. Initial analysis of *Receiver* performance showed hit rates that did not differ significantly from chance. However, a post hoc analysis comparing Participants' top two choices to chance showed a mean hit rate of 52% which was significantly greater than chance (at 40%). Examination of possible associations between hit rate and belief in psi as well as the subjectively

rated strength of the relationship between *Sender–Receiver* pairings showed only a correlation with the *psi* subscale of the Revised Paranormal Belief Scale (RPBS). Although Participant hit rate is more suggestive than conclusive, we argue that the use of VR offers some unique opportunities to explore and elicit potential telepathic effects. With this in mind we outline a number of methodological refinements that we think could help to improve the viability and effectiveness of using VR in *psi* research.

## INTRODUCTION

Telepathy has been classified as the direct reception or transfer of information from one mind to another (Alvarado, 2017; Playfair, 1999, 2002, 2012). The term has also been used to refer to the notion that one mind, or conscious individual, may acquire information relating to the thoughts, feelings, and/or intentions of another conscious being from a distance via a non-usual route (Sheldrake, 2015). It is not clear at present whether these different aspects of telepathy represent distinct underlying processes or simply reflect the particular aspect of *psi* under observation. Nevertheless, the effect is generally examined using pairs of individuals, one acting as the *Sender* and the other as a *Receiver*, separated in space with no normal means of communicating. Research utilizing such an approach has shown target identification rates that can exceed chance (e.g., Hyman, 1985), with stronger effects reported for those with higher levels of belief in *psi* (Parker et al., 1997) and when sender–receiver pairs are friends or family-related (Parker & Jensen, 2013).

Over time attempts have been made to refine and improve the traditional *Sender–Receiver* paradigm, as seen in Ganzfeld research (Honorton, 1985; Honorton et al., 1990). The German term Ganzfeld refers to the ‘whole field’ and is used to refer to a procedure in *psi* research that is thought to improve the signal-to-noise ratio for the *Receiver* by reducing any and all sensory stimulation and input. This is generally achieved by having the *Receiver* lay or sit in a relaxed position with eyes closed. Halved, translucent Ping-Pong balls are then placed over the eyes and a light (usually red) is shone on their face to create a uniform visual field while pink or white noise is relayed through headphones (see e.g., Baptista et al., 2015). To some extent this procedure is based on the assumption that *psi* effects or telepathic signals may be weak

and transient, and as such can be easily overshadowed by the internal somatic and the externally generated physical and sensory stimulation (Honorton, 1977). Overall, the results for telepathy from Ganzfeld research are intriguing yet variable, though this may be due in part to the methodological heterogeneity of the studies. On the one hand, some have argued that the results from the Ganzfeld paradigm need to be interpreted with caution as they could potentially be explained by sensory leakage (Wiseman et al., 1996), and may not be robust or fail to replicate (Milton & Wiseman, 1999a, 1999b). On the other hand, a number of meta-analyses and reviews have led to claims that the paradigm has produced reasonably robust telepathic effects (e.g., Bem et al., 2001; Palmer, 2003; Storm et al., 2010, 2012; Williams, 2011). Nevertheless, such findings have emerged from a paradigm that has predominantly focused on the nature and experience of the *Receiver*.

Here, the aim was to shift the focus to consider the nature and setting of the way the target is 'experienced' by the *Sender*. It is often the case that target materials are visual in nature and the *Sender* is generally required to simply focus on the target with the intention of sending information regarding the target to the *Receiver*. However, according to Pütz et al. (2007), there is no clear consensus on the precise nature of the optimal target for experiments investigating telepathy. Some have suggested that static targets may be more effective (Lantz et al., 1994), while others have argued that multi-sensory targets that encourage a greater level of processing may help to elicit stronger telepathic responses (Delanoy, 1989), with research also suggesting that colorful dynamic targets may be preferred (Honorton et al., 1990; Watt, 1996). In an effort to contribute to this debate, the current study examined the feasibility of using a virtual reality (VR) environment to enhance the signal of the *Sender* by immersing him/her in a positively arousing experience as opposed to simply presenting a static target image. Arousing experiences were selected, as prior research suggests that targets that are rich in emotional detail and dynamic in nature may be more psi-conducive (Bem & Honorton, 1994; Sherwood & Roe, 2003). In addition, a recent test of twin telepathy by Karavasilis et al. (2017) showed that changes in the cortical blood flow of one twin occurred only when a second distantly separated twin was exposed to emotionally arousing stimuli.

VR technology typically involves a participant wearing a Head Mounted Display (HMD) unit which projects immersive, 360-degree videos or virtual environments along with accompanying sounds, achieving a level of immersion that is not possible using static images or traditional video clips. These HMD units enable the wearer to become fully immersed in their virtual environment allowing them to look around simply by turning their head to obtain a full 360-degree view. The use of VR technology has already been successfully employed in other areas of experimental psychology. For instance, participants have demonstrated improved recall when immersed in VR compared with a more traditional method of exposure to target images (Krokos et al., 2019), and shown enhanced improvements in psychological conditions when they have undergone VR therapy (Krijn et al., 2004). In addition, the use of VR has been shown to be successful in eliciting emotional responses to visual stimuli (Felnhofer et al., 2015) and in some instances has produced greater physiological changes as well as changes in self-report arousal responses compared with static images (Courtney et al., 2010). Indeed, Parsons (2015) has suggested that use of VR allows enhanced ecological validity without sacrificing experimental control. Hence, a key aspect of this study was to explore the potential utility of using VR in a telepathy paradigm.

Many reported telepathic experiences occur outside of labs and beyond traditional experimental control, often in environments of heightened affective relevance (e.g., Playfair, 1999). Such anecdotal accounts have always provided a challenge to those attempting to elicit such effects in the often more sterile lab conditions. Hence, the immersive and dynamic experience that VR provides coupled with the enhanced ecological validity would seem to suggest that this may be a potentially useful method when incorporated into telepathy research. However, somewhat surprisingly there has been only one study to date that has utilized VR to facilitate performance in a telepathy study (Murray et al., 2007). This study had both *Sender* and *Receiver* interact with a target pool of objects simultaneously in the same virtual environment. The aim was that by having both *Sender* and *Receiver* simultaneously interact with a virtual target object this would help to facilitate and elicit potential telepathic effects. Unfortunately, they found no evidence of telepathy occurring between pairs of participants

placed in VR environments. This may have been because the target objects used (e.g., football, telephone, toaster) represented mundane everyday items which would be unlikely to elicit any affective response from the *Sender*. This null result would be consistent with the many anecdotal accounts of telepathy occurring when the *Sender* is in a situation of heightened affective relevance (Playfair, 1999, 2012). Hence, if the *Sender* is immersed in a VR environment that evokes a highly emotive response, this may help to elicit a clearer and more robust telepathic effect.

Given this, the aim of the current study was to examine the feasibility of using VR by attempting to elicit a telepathic effect from pairs of Participants who are either friends or related and to measure the accuracy of the *Receiver's* responses when the *Sender* was immersed in a VR environment. VR environments were specifically chosen that would help to elicit heightened states of arousal while maintaining a positive valence (e.g., skydiving, downhill skiing, racecar driving). VR clips with a positive valence were selected in this instance primarily for ethical considerations. In addition, we felt it would be necessary to be able to show that such a paradigm should prove to be useful before contemplating the use of negatively arousing clips. Our prediction was that using VR technology to present immersive, dynamic stimuli to the *Sender* would be conducive to telepathy leading to a target hit rate greater than expected by chance. We also examined whether this telepathic effect would be related to the level of Participants' belief in psi and the strength of the relationship between *Sender* and *Receiver*.

## METHODS

### Participants

A total of 11 pairs of Participants (14 female, 8 male; aged from 19 to 55 years old with a mean age of 28.73) took part in the study. The Participants were opportunity-sampled from the psychology undergraduate and postgraduate cohorts at Canterbury Christ Church University with emphasis placed on recruiting pairs of Participants with a strong or close relationship. Given the nature of the VR experience, exclusion criteria included those with a history or family history of epilepsy and anyone reportedly suffering from motion sickness. Of the

11 pairs that took part, two were spousal couples and the remaining nine self-identified as colleagues and/or friends.

## Materials

The target pool consisted of 50 images, 45 taken from the International Affective Picture System database (Lang et al., 1997) with the remaining 5 selected from Google images using the same criteria of positive valence and arousal. All images were selected to depict positive physical activities, such as ballooning, skydiving, rollercoaster riding, skiing downhill, etc. The target pool was separated into 10 sets of 5 images with each set matched as far as possible in terms of mean levels of valence and arousal, with the order of the images in each set allocated using an online random sequence generator (<https://www.random.org/>). These were then incorporated into two automatic PowerPoint presentations (*PP-A* and *PP-B*), each lasting for 6 minutes and 25 seconds, with each presentation containing 5 sets of images, one set per slide, with each set interspersed by a slide depicting a gif video image of an expanding/contracting shape and the text message ‘Synch your breathing with this,’ used to help control the timing of Participant’s breathing rate. Each of the slides containing a set of 5 images was set to show for a duration of 30 seconds, with the gif breathing image showing for 45 seconds. Each of the two PowerPoint presentations also contained a sound clip of pink noise, obtained online (<http://onlinetonegenerator.com/noise.html>) and played throughout the presentation to the Participants using a standard set of headphones.

One image from each of the 10 sets was selected as a target based on the availability of a 360° video depicting the activity in the image (e.g., ballooning, skydiving, etc.) that could be played using an Oculus Rift virtual reality (VR) headset. These video clips were obtained from the Internet (e.g., YouTube) and were edited to a length of 30 seconds. Alongside these active target video clips a ‘Relaxing’ video clip with a length of 45 seconds depicting a calm beach scene with a view looking out over the ocean toward a sunset also was used. Two 360-degree VR video sequences (*VS-A* and *VS-B*), each lasting for 6 minutes and 25 seconds, were created, with each sequence containing five 30-second target videos sandwiched between the relaxing beach clip for 45 seconds.

Hence, each of the two sequences began with a 45-second relaxing clip, followed by a 30-second target clip (Target 1), then another 45 seconds of the relaxing clip followed by the second 30-second target clip (Target 2), and so on until all 5 target clips had been played. The order of the target videos was randomized using an online random sequence generator (<https://www.random.org/>). The immersive virtual reality (IVR) kit consisted of an Oculus Rift Virtual Reality headset with 1080 x 1200 resolution per eye, operating with a 90 Hz refresh rate, 110° field of view, and integrated 3D audio headphones. This was connected to an MSi GE62VR 7RF Apache Pro Laptop PC with an Intel Core i7-7700HQ CPU at 2.80 GHz, 16 GB RAM, and NVidia GeForce 1060 graphics card. All videos were played through the native Oculus Rift software.

Two questionnaires also were used: the Revised Paranormal Belief Scale (RPBS) (Tobacyk, 2004) and a measure of the subjective closeness and intensity of relationship with their partner Participant. The former is a standardized questionnaire designed to measure belief in paranormal phenomena. The scale is made up of 26 items split into the following seven subscales: Traditional Religious Belief, Psi, Witchcraft, Superstition, Spiritualism, Extraordinary Life Forms, and Precognition. Each item is scored on a Likert scale from 1 to 7. The total score is determined by adding all scores together, and each subscale is scored by calculating a mean average of the items that make up that subscale. In all cases a higher score represents a higher level of belief. The second questionnaire included one measure based on the Inclusion of the Other in the Self Scale (IOSS) (Gächter et al., 2015) and a second measure of relationship intensity taken from Pütz et al. (2007). The IOSS measures the subjective perceived closeness of a relationship and consists of seven pictures of two circles intersecting to increasing degrees. Participants are told that one circle represents them and the other circle represents the relevant other (i.e. in this instance their study partner), and that they need to select the picture they feel best represents their relationship. This scale effectively functions like a single-item Likert scale which is scored from 1 to 7, with a higher score representing a closer relationship. The second measure consisted of a 100-millimetre line labeled with 0 at the left-hand end and 100 at the right-hand end. There was a marker at 1 centimetre from the left labeled '10 – someone you know by sight but have never spoken to' as a

reference point. Participants are required to place a mark on the line to indicate the intensity of their relationship with their study partner from 0 (i.e., unknown) to 100 (maximum).

Ten separate types of response sheet were created, each containing one of the image sets. On each sheet the five images from each set were randomly presented (based on <https://www.random.org/>) side by side with a line beneath each image for Participants to enter their ranking score. The written instructions on the sheet asked Participants to 'Please rank the experience you believe your partner has just had from 1–5 where 1 = most likely to have experience and 5 = least likely to have experienced.' Finally, two hand-held battery-operated Cobra Micro Talk 2-way radios were used by the Experimenters to signal to each other the relevant stage of the procedure.

## Design

The study utilized a within-participants cross-over design, with all Participants acting as both the *Sender* and *Receiver* with these conditions counterbalanced. Each pair of Participants was initially randomly allocated to either the *Sender* or *Receiver* condition and once this was completed they would exchange places. For example, Participant 1a (i.e. first of the pair) may be randomly allocated to the *Sender* condition to view VS-A, with Participant 1b allocated as *Receiver* and shown the corresponding PP-A. Once completed they would change places and Participant 1a would become the *Receiver* and view PP-B while Participant 1b became the *Sender* and was shown VS-B. The *Sender* and *Receiver* were housed in separate adjoining rooms and during the exchange an additional holding room was used to ensure no contact between the pair. In the *Sender* condition each Participant viewed a VR video sequence (i.e. VS-A or VS-B) containing five target trials with each trial lasting 30 seconds. In the *Receiver* condition each Participant viewed an automatic PowerPoint presentation (PP-A or PP-B) containing five corresponding target trials with each trial lasting 30 seconds. A trial was scored as a 'hit' if the *Receiver* ranked the image depicting the activity their study partner had just experienced as a '1' on a scale from 1 to 5. Hence, the dependent measure was the target hit rate of the *Receiver* compared with mean chance expectation (1 in 5, or 20%).



## Procedure

As part of the recruitment process Participants were informed that the study was exploring telepathy utilizing virtual reality environments. Ethical concerns meant that particular emphasis was given about the fact that they would be exposed to potentially arousing stimuli in a VR environment. They were not given any specific information regarding the nature of the stimuli. On arrival at the lab each pair of Participants was requested to swap a personal item to keep with them as a reminder of their partner for the remainder of the study. They were then isolated into separate rooms where they each completed the two questionnaires with the order counterbalanced across Participant pairs. They were then taken to separate rooms where the *Sender* was set up to wear a VR headset and view one of the two video sequences (*VS-A* or *VS-B*) showing five 30-second active target videos, each one interspersed with a resting clip lasting 45 seconds. The ordering of the video sequences was set by the Experimenters and counterbalanced across Participant pairs. Experimenter A remained with the *Sender* to ensure their safety and to signal to Experimenter B the start and end of each target and relaxing clip. This was done to facilitate the recording of physiological measures from the *Receiver* which formed part of a separate study and which will not be reported here. During each target clip the *Sender* was instructed to imagine their partner (the *Receiver*) with them during the experience and to use the shared object they held in their hand as a cue to help them think of their partner. During the relaxing clip the *Sender* was simply told to relax and enjoy the experience. In a separate room, with Experimenter B, the *Receiver* sat facing a computer monitor wearing a set of headphones set to play pink noise continuously. This reduced any distractions and any interaction between Experimenter and Participant in an effort to help them maintain focus on the task. When signaled that the *Sender* had begun viewing the video sequence, the corresponding PowerPoint presentation was started by Experimenter B on the *Receiver's* computer. When the presentation showed the relaxing gif image with the breathing instructions, the *Receiver* was told to think about their study partner and try to get a feel for what they were experiencing. When this slide was replaced by a slide containing one of the sets of five images side by side (1 target and 4 decoys), the *Receiver*

was requested to complete the ranking exercise. The *Receiver* did this by ranking the set of five images in terms of the one he/she thought his/her partner had just experienced from 1 (most likely) to 5 (least likely) and writing the responses on the sheet provided. Participants were told to use each rank only once and to rank the whole set. He/she had 45 seconds to complete this ranking procedure before the *Sender's* next video clip would begin and the *Receiver's* computer monitor would move on to display the relaxation prompt. This procedure was repeated for the remaining four trials of the video sequence. Once the video sequence had run through all trials, the *Sender* and *Receiver* exchanged places. This was achieved using a nearby 'holding room' to ensure that there was no direct contact between them during this swapover. Once in place the second video sequence and PowerPoint presentation was shown and the procedure repeated.

## RESULTS

A trial was considered a hit if the *Receiver* ranked the target image as 1. Unfortunately, one Participant failed to rank the images correctly by assigning a rank of 1 to more than one image. This data was excluded from the main analysis. Performance across the five trials for the remaining Participants was averaged to produce a mean hit rate which was compared to chance (20%). Across all trials *Receivers* exhibited a mean hit rate of 25%. A one-sample *t*-test showed that this mean hit rate was not significantly greater (one-tailed) than chance (20%):  $t(20) = 0.960$ ,  $p = 0.17$ , 95% CI (-0.055, 0.151),  $d = 0.20$ .

### Additional Post Hoc Analysis

Given the ranking procedure used, it was possible to conduct an additional post hoc comparison using a one-sample *t*-test to compare the mean hit rate for the top two ranked positions relative to chance (i.e. 40%). This excluded one further Participant who ranked only his first choices. This post hoc analysis used a Bonferroni correction ( $\alpha/2 = 0.025$ ) and showed that the mean hit rate of 52% was significantly higher than chance (one-tailed):  $t(19)$ , 2.259,  $p = 0.018$ , 95% CI (0.008, 0.231),  $d = 0.50$ . Descriptive statistics can be found in Table 1.

There was a positive correlation between mean hit rate and the psi

**TABLE 1**  
**Mean Hit Rate (%) and SD When Target Ranked First Choice (Chance at 20%)**  
**and When Target Ranked Either First or Second choice (Chance at 40%)**

	Mean Hit Rate (%)	SD
Chance at 20%	24.76	22.7
Chance at 40%	52.00	23.7

**TABLE 2**  
**Correlation Coefficients (with Significance Values)**  
**between Mean Hit Rate and the Seven Subscales of the RPBS**

	Correlation	Significance
Traditional Religious Belief	0.004	0.98
Psi*	0.454	0.04*
Witchcraft	0.329	0.16
Superstition	-0.193	0.40
Spiritualism	0.024	0.92
Extraordinary Life Form	0.173	0.45
Precognition	0.052	0.82

\*  $p < 0.05$

subscale of the RPBS (see Table 2), though no other correlations were significant (all  $ps > 0.3$ ).

Examination of the subjective closeness of the relationship between Participant pairs showed that subjective closeness ratings ranged from 3.5 to 6 (Mean: 4.69; SD: 1.0) but there was no correlation with mean hit rate,  $r(21) = 0.19$ ,  $p = 0.39$ . Relationship intensity ratings ranged from 50 to 100 (Mean: 79, SD: 14.1) but again did not correlate with mean hit rate,  $r(21) = 0.13$ ,  $p = 0.59$ .

## DISCUSSION

The results of the primary hit rate analysis found no evidence for anomalous communication, with hit rates not differing significantly from the expected chance rate. However, a post hoc analysis found suggestive evidence for an effect when Participants' top two choices were combined. The only questionnaire measure that was found to have a significant relationship with hit rate was the psi subscale of the RPBS, with higher levels of belief in psi phenomena correlating positively with success in the main task.

That the post hoc analysis confirmed a possible telepathic effect is suggestive but needs to be interpreted with caution given that the primary analysis failed to show evidence of an effect. This raises the question of why the effect, if real, was less robust than expected. The most parsimonious interpretation could be that the post hoc effect is simply a Type I error and does not represent evidence of telepathic communication. Such a proposal would be consistent with the claims of others who have also failed to find any evidence of telepathy (Milton & Wiseman, 1999a). It would also be in line with the findings of Murray et al. (2007) who failed to show any evidence of telepathy when using immersive VR in a ganzfeld-inspired study. However, there are also many studies that have clearly shown that evidence of a telepathic effect is certainly possible (e.g., Bem & Honorton, 1994; Howard, 2017; Storm et al., 2017; Williams, 2011). Hence, it may be that the prediction of a robust telepathic effect using VR with the current methodology was overambitious. Given the exploratory nature of the current study, it may have lacked sufficient statistical power to elicit a clear effect. In addition, certain refinements could, or should, be made that may lead to improved performance. Such refinements could include the calculation of the hit rate, the particular VR environment, which includes the duration and type of target clip, as well as the level of sensory isolation of the *Receiver*.

The current study primarily focused on the feasibility of using VR in a telepathy setting to ascertain whether this would improve the signal from the *Sender*, resulting in a clear and robust effect. Given the suggestive nature of the results, it may be that the study lacked sufficient statistical power to clearly identify such an effect. For instance,

the reported effect size of the main hit rate was 0.20 which is consistent with findings reported from other areas of psi research (e.g., Bem et al., 2015). This could suggest that while there may have been a small effect present the current study was insufficiently powered to clearly discern it. To clarify this more precisely a power analysis was conducted using the software G\*Power (v3.1.9.7) to calculate the sample size that would be necessary given an effect size of  $d = 0.2$ , with power set at 0.8 using a one-sample  $t$  test to compare a mean difference score. This revealed that a total of 156 participants would be needed, or the equivalent of 80 pairs of participants. Hence, the use of VR to elicit telepathic effects may be viable provided a sufficient sample size is tested to ensure adequate power.

In terms of calculating the hit rate, in the current study *Receivers* ranked the five images presented to them on a scale from 1 (i.e. most likely to be the target) to 5 (i.e. least likely to be the target) with a direct hit representing a score of 1 for the correct target. Such a measure may lack sufficient sensitivity as it assumes that participants will always correctly identify the target. Given the unknown nature of telepathy it would be premature to assume that participants should always be able to accurately identify the correct target. It may be that they identify the target in one of their top two or three choices but not always their first choice. Which is in fact what occurred here. Hence, in the future it may make more sense to offer participants the opportunity to rank a selection of six images from 1 to 6. With 1 representing the image they most think is likely to represent the target and 6 the least. Then the ranks could be re-coded into binary hits where a target ranked in the top half (i.e. from 1–3) is identified as a hit and a target ranked in the bottom half (i.e., from 4–6) would be a miss. The hit rate could then be compared with mean chance expectation (i.e. 50%). This might be a more sensitive measure of target identification and could lead to clearer and more robust hit rates. Indeed, Milton (1997) has argued that where multiple measures are available, the more superior or sensitive measure should be used, as effect sizes in psi research are often very small.

With regard to the VR environment, the current study presented five VR target clips, each for 30 seconds, which may have been too short a duration to enable effective telepathic communication to occur. For instance, much of the research utilizing a Ganzfeld-type paradigm has

involved communication phases that last from 10 minutes up to 40 minutes in duration (Bem & Honorton, 1994; Parker, 2000). Hence, making the VR clips longer in duration may aid the possible transfer of information. Although, to some extent, this may be reliant on the availability of the clips for use in a VR environment. Related to this is the issue of the content of the clips used. Here, the clips all focused on potentially adrenaline-inducing positive physical activities, such as skiing downhill, driving in a racecar, etc. It is possible that these clips may have been too similar in nature to elicit sufficiently diverse emotions and/or responses. Using a broader range of clips containing a more diverse range of emotional responses may be more effective at eliciting potential telepathic responses. Such an idea would be consistent with the findings from Karavasilis et al. (2017) who reported positive telepathic effects when using a wide range of emotionally arousing stimuli. Furthermore, the notion that these VR clips were highly arousing and had a positive valence was based primarily on the ratings for the static images of the same event from the IAPS database (Lang et al., 1997). This raises two issues: first, whether the clips elicited the heightened levels of arousal that was assumed based on the ratings of the static images. This was not objectively assessed and as such future researchers could measure the possible changes in physiological autonomic responses of the *Sender* when they are immersed in such virtual activities to ensure that they are sufficiently aroused during the sending phase of the trial. A second issue relates to the valence of the clips used. Here, as noted above, the valence of the clips was entirely positive. However, it may be that using clips that are of a more challenging and/or negative valence could evoke stronger responses. No doubt such clips would need to be selected with care and the participants made clearly aware prior to taking part to ensure that any such paradigm clearly abided by the ethical principles of research with human participants. Nevertheless, others have found that using highly evocative negative images can evoke a stronger psi response (Bem et al., 2015). In addition, use of such negative clips may more closely mirror the highly emotional states often associated with the numerous anecdotal accounts of crisis-type telepathy (see, e.g., Playfair, 1999). We would again stress the ethical sensitivity that would be needed if such clips were used and the importance of clear informed consent on the

behalf of the participants taking part. A final point regarding the VR environment raised by one of the Peer Reviewers is that both the *Sender* and the *Receiver* can simultaneously experience the same environment together without any need or scope for them to physically interact. By sharing the same virtual environment it may be possible to facilitate the acts of both sending and receiving. Particularly if both *Sender* and *Receiver* are required to carry out a similar task and/or the *Receiver* includes in their representation of the target information relating to the wider surrounding context.

A final issue relates to the potential differential experiences of the *Sender* and the *Receiver*. For instance, in the current setup the conscious experiences of the *Sender* and *Receiver* were somewhat reversed when compared with a traditional Ganzfeld paradigm. The former remained immersed in a VR environment which could have induced an altered state of consciousness while the latter remained awake yet relaxed while viewing a PowerPoint slide presentation. Hence, to explore the impact of this more fully, future research could assess any alterations in the phenomenological experience of the *Sender* associated with immersion in the VR environment using a standardized scale, such as the 'Phenomenology of Consciousness Inventory' (Pekala et al., 1986). Such insights may prove helpful in identifying any possible relationship between the experience of the *Sender* and the outcome. The experience of the *Receiver* was also distinct in the sense that they were only partially isolated by wearing headphones and subjected to pink noise throughout. However, they were required to watch a screen which provided a cue for them to breathe in time with a moving image and were visually presented with five images, which they needed to rank. Such visual interactions could have been distracting and added noise to the possible telepathic signal, reducing its intensity. Such an idea would be consistent with the literature suggesting that the more closely a subsequent study follows the classic Ganzfeld procedure the more likely they will be to elicit comparable effects of telepathy (Bem et al., 2001; Palmer, 2003; Williams, 2011). Hence, future research could attempt to isolate the *Receiver* more effectively. This could be achieved by also covering their eyes and requiring verbal feedback responses throughout and/or using sensory isolation tanks to help create a more psi-conducive state (see Cooper et al., 2020). Such verbal responses

could then be ranked by an external judge blind to the aims of the study to provide a more objective measure of hit rates.

The positive association between hit rate and the psi subscale of the RPBS (Tobacyk, 2004) is consistent with others who have reported similar associations (Parker et al., 1997), though it could simply mean that those with low levels of belief simply perform much worse than chance (see Bem & Honorton, 1994). Such associations between belief and performance are inconsistent and their precise meaning is still debated, especially given the ongoing discussions about whether such beliefs represent psychological traits or states (e.g., Irwin et al., 2018). Some have even suggested that belief in such paranormal phenomena is linked to a poor understanding of the physical world (Lindeman & Svedholm-Hakkinen, 2016). As such, the relationship between belief and performance may not be a simple linear one, and may be mediated by many other factors, including, but not limited to, the various measures used, the processing style of the individual, as well as possible personality factors (Cardeña & Marcusson-Clavertz, 2015).

In terms of the relationship between pairs of Participants influencing performance, there was no clear association between subjectively rated strength of Participant relationship and hit rate. Such a finding is inconsistent with the reports that hit rates improve when the sender–receiver pairings are close friends compared with random assignments (Bem & Honorton, 1994). However, it may be that the current study based only on eleven pairs of Participants lacked sufficient statistical power. Alternatively, it could be that there was insufficient variability in the range of relationships for such an effect to emerge. For instance, of the eleven pairs of Participants nine self-identified as colleagues or friends. It may be that for a robust relationship between hit rate and subjective closeness to emerge, a greater range of scores relating to the variables in question would be needed. This would be consistent with the proposal by Glass and Hopkins (1996) that greater variability in the measures leads to a greater value of  $r$ .

In conclusion, examining the feasibility of using VR in a telepathy paradigm produced results that were more suggestive than conclusive. Nevertheless, the use of immersive VR to examine potential telepathic effects is both novel and in its infancy, and we have outlined a number of refinements that we think could lead to enhanced effects. Moreover,



this area is likely to expand as the technology supporting it continues to develop. Hence, it represents an area that is ripe for future researchers to modify in an effort to allow greater ecological validity while maintaining good levels of control.

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## RESEARCH ARTICLE

# Dealing with the Experimenter Effect

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**Abstract**—Methods in experimental science assume objective facts, and those effects are generally independent of the observer or experimenter. This objectivity assumption is not warranted in the field of human studies. Results of psychological experiments tend to be dependent on among other things the expectations of the experimenter. The experimenter effect together with the replication crisis in social psychology are major issues in experimental parapsychology. We use Houtkooper's *Hierarchical Observational Theory* to look at a model for dealing with this issue, and conclude that multiple-experimenter projects might be able to sort out experimenter effects from intrinsic effects.

**Keywords:** experimenter effect; replication crisis; psi; parapsychology

*“Are we shamans, not scientists?”*

## THE PROBLEM

The above quotes was the desperate response by Rex Stanford when he realized that experimenters in psi experiments cannot avoid being a participant, too, and hence only ‘subjective’ data could be obtained (Stanford, 1981).

Methods in experimental science, however, have been developed under the assumption that there are objective facts, i.e. that effects are generally independent of the observer or experimenter. Rosenthal

showed that this objectivity assumption is not warranted in the field of human studies. Results of psychological experiments tend to be dependent on among other things the expectations of the experimenter (Rosenthal, 1969). These experimenter effects (E-effects) were assumed to be caused by subtle influences of the experimenter on the system under study. Through automatization of experimental procedures, these subtle influences were assumed to be reduced. However, at times, some unexplainable effects depending on the experimenter were still observed when experimenters had little interaction with the experiments.

Mainstream psychology is presently struggling with these issues: The so-called replication crisis in social psychology is attributed by several authors to the idiosyncratic effects of context (including the experimenter) on the outcomes of subtle manipulations (see for example Doyen et al., 2012). This is of course a major issue for any science that relies on careful manipulation of independent variables in experimental settings.

### **Experimental Parapsychology**

In the field of experimental parapsychology, the role of the experimenter has been a continuous source of discussion. Some researchers (Rabeyron, 2019) have even taken the position that the contribution of the experimenter is basically uncontrollable and that what we observe is nothing more than the hopes and expectations of a few (psi-gifted) experimenters. According to this position, further experimental research is a waste of time and the focus should be on spontaneous cases.

Experimenters in this field of research sometimes have a strong worldview at stake in contrast with the unselected participants in their experiments, and hence the idea that experimenters are the main source of the anomalous effects cannot be excluded.

### **We Learn Nothing Intrinsic**

If indeed these psi results like several differential effects (role of belief in psi, role of brain state, etc.) are just the consequence of projections of the researcher (except when there is something that

does evade explanation), then one has to ask if we really can learn from psi experiments. The effects are then not intrinsic to the process but are manifestations of the personal hopes and expectations of the experimenter. Sheep do better than Goats? Wait for a (psi-gifted) experimenter who doesn't believe this and then we will get the reverse results (Bierman, 1981).

### **Assumptions Needed**

Can we ever improve the experimental methods so as to deal with the experimenter effect? Let us be clear: If indeed "any observer or any person in some way related to the experiment can now or in the future have an impact without any constraint," then no research is possible. However, if that were the case then our experiments would have such a large variance on this uncontrolled psi that we would get only extreme results (with an unlimited number of psi sources "participating"). In fact, we do not see this (Houtkooper, 1977). We may therefore assume that the idea that "any observer or any person in some way related to the experiment can now or in the future have an impact *without any constraint*" is false. There must be a constraint.

## **MODELS**

But what constraint? At this point it is imperative to introduce models. Without some model, we are unable to come up with methods that would help us to deal with E-effects. As an example, I use Houtkooper's *Hierarchical Observational Theory* (1983). He assumes that:

1. any observer of the results has (retroactive) psi input into the result
2. a second observer of the same dependent variable is contributing less, even if his psi strength is as large as that of the first observer (and so on). There is a hierarchy.

It follows first that in this Hierarchical Model the 'analyzers' are probably the persons with the largest impact. They are the first to see the final results. This is in line with analyzer effects reported in the literature (Feather & Brier, 1968; Weiner & Zingrone, 1989; West & Fisk,

1953). Subjects have impact only on the trial level (hits and misses) but not on a global level (other compound measures such as run scores and of course results over all subjects).

Often, though, the Experimenter is also the Analyzer—which in some ways simplifies the problem.

### **Variance!**

The solution to the Experimenter effect under these theoretical assumptions is basically the same as for any other source of uncontrolled *variance*: Introduce the Experimenter as a factor (hopefully resulting in some explained variance) in the design.

Interestingly, recent developments in statistical modeling have made an initial test of this idea more straightforward. Linear mixed models (lmm) have rapidly become the de facto standard in experimental psychology, in particular based on developments in psycholinguistics. In this field of study, stimuli may have an idiosyncratic effect on the dependent variable, a situation now also recognized in social psychology (Judd et al., 2012). One can control for such idiosyncrasies by using a mixed model, a model that takes into account both fixed effects (effects of factors that are under the control of the experimenter and have a known or at least predicted effect on the outcome variables) and random effects (effects that are believed to be a source of variance but that have an unknown effect on the outcome variables).

For any study in which more than one experimenter has contributed, one may compare the model fits for a model including Experimenter as random factor versus a null model in which this term is omitted. If indeed there are significant experimenter effects, regardless of the actual  $\psi$  (or anti- $\psi$ ) effects of any individual experimenter, the model including the random term should give a better fit than the null model.

Therefore, rather than running one experiment with one Experimenter, projects should engage say 20 experimenters. Obviously, a formal power analysis would be preferred to compute the required number of experimenters, but given that we do not know the effect size of an eventual experimenter effect, we will have to start with an initial guess.

The method practically requires a coordinator to supervise such



a project. So aren't we just transferring the problem to a next level in the hierarchy? Shouldn't we then expect a Coordinator effect? Aren't we going to just measure the expectations and hopes of this coordinator without learning anything intrinsic about the psi process?

That this coordinator has psi input is a valid argument. However, due to the assumption about decreasing effect with the order of observers, we may assume this contribution to be *limited and smaller than that of the experimenters*.

Because we assume that observational theories and in particular the Hierarchical Model are valid, the observational history of the results should be very well-controlled. For instance, no data peeking is allowed by anyone, and the first observation of the results has to be shared simultaneously by all experimenters (for instance in an online meeting). Results are then later communicated to the coordinator after this shared analysis.

### **Project Approach**

This approach has another advantage, namely that it may empirically establish a confidence interval by analyzing the distribution of the results of the experimenters.

Thus, the requirement for replication is easier to quantify: A result is replicated if it falls within the 99.9% confidence interval obtained by the distribution of the results of the 20 experimenters. A result is not replicated if it falls outside of that confidence interval.

Another argument that favors this project approach is that with many different contributing labs, the chance for the same systematic error explaining the result is smaller. Recently, a multi-experimenter project was reported (Schlitz et al., 2019). By using an ANOVA, they were able to conclude that there was no contribution from the experimenters. Because the main psi measures did not show psi, this result in this case is not surprising.

## **CONCLUSION**

We have shown that by using Analysis of Variance or corresponding non-parametric techniques in *multi-experimenter* projects, we may be able to separate the experimenter effect from the intrinsic effects

that shed light on the psi process itself. For this approach to work, it is mandatory to assume some theoretical framework that at least introduces a constraint so that not any observer/experimenter now and in the future can have an unlimited impact on the data. Of course, that theoretical framework may be totally wrong. And therefore, the practical implementation may be incorrect. For instance, the requirement to have the analysis be shared by all experimenters could be unnecessary or even wrong when assuming a theoretical framework other than the *Hierarchical Observational Theory*. Frameworks like von Lucadou's Model of Pragmatic Information (MPI) may require other practical implementations (von Lucadou, 1995). But, in any case, such a project should have many experimenters in order to assess the contribution of the experimenter to the final result.

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## COMMENTARY

### Early Spiritualist Discussions About the Distortions of Mediumistic Communications

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*... The generality of communications . . . are given in such a mode that they are liable to be affected by the mind of the medium, because they are given through their use, in some measure, of the medium's mental powers.*

—John W. Edmonds (1858, p. 7)

In a previous article I argued that the contributions of spiritualists to ideas about mediumship include more than defenses of discarnate agency (Alvarado, 2003). Among other things, they have contributed to recognition of the existence of distortions and difficulties in spirit communications, a topic mentioned in a recent *JSE* Editorial by Stephen Braude (2020) in which he cited statements about the subject by C. D. Broad (1962) and William James (1909). Although this was not the main topic of Braude's comments, I would like to refer to some nineteenth-century examples of the literature in question if only to recognize the pioneering role of various spiritualists in discussing the subject, what one writer referred to as "imperfect messages by the telegraph from heaven" (Spirit communications, 1858, p. 4).

One example includes the ideas of American Universalist minister Samuel B. Brittan. In an article entitled "Cerebral Influence on Revelation," Brittan (1852) wrote:

In all ages, revelations from the Spiritual World have been essentially modified by the physical and mental characteristics of the persons

through whom they have been given to mankind. In the process of influx, the elements of two minds are blended, and the revelation is the result of their mingled action. Sometimes this infusion is labored and difficult, and the spiritual influence is only perceptible in a slight abnormal quickening of the human faculties. Again the thought is directly inspired, but is left to be invested by the mind of the medium, from which it takes not only its coloring and clothing, but its specific form. (Brittan, 1852, pp. 39–40)

In his view the influence from the spiritual dimension, including biblical prophetic revelations, “usually conjoins itself to, and becomes cooperative with, the predominant elements of the mind” (p. 40). These elements were the usual patterns of thought and expression of the mind of the receiving person.

Similarly, another minister, social reformer Adin Ballou (1852), wrote that in mediums of inferior intellect: “Their own prejudices, will, imagination, low ideas, perverse sentiments, and peculiar absurdities of interior conception, must bias and characterize the communications, which any spirit should attempt to make through them” (p. 67). Thus the meaning of communicating spirits would be conveyed incorrectly. “It would be like the message of a Frenchman to an Englishman, rendered through an ignorant Dutchman, who had only a smattering of French and English. The Englishman might be puzzled to make anything decent of it” (p. 67).

The famous clairvoyant and visionary Andrew Jackson Davis also had something to say on the topic. He believed that:

The mind which has been, through the formative influence of prevailing education and custom, moulded into a receptacle for the entertainment of any particular notion, theory, or creed extant, is almost certain to unconsciously alter, modify, and arrange all impressions, from whatever source received, invariably in accordance with the state and style of its own growth and individual culture. And furthermore, it may be accepted as a principle, fully demonstrated in the world’s history, that the Divine cannot flow into Human structures—the celestial cannot blend, intimately, with the terrestrial, without the former (the Divine) participating to a degree more or less obvious, in the imperfections which are infinitely and eternally consequent upon, and inseparably connected with, a physical or material state of existence. Discord

and contradiction, therefore, growing out of the intimate association or conjunction of the spiritual with the material, must invariably and everywhere be more or less apparent. This fact will certainly appear, notwithstanding the honesty or good intentions of the media,<sup>1</sup> or that entire passivity of mind which Truth requires. (Davis, 1853, p. 203)

Another example comes from the writings of a prominent spiritualist and student of mediumistic phenomena, American Judge John W. Edmonds. He wrote as follows in the second volume of *Spiritualism*, an early classic on the subject authored by Edmonds and physician George T. Dexter (1855), who wrote on the subject as students of the topic, but also in terms of their experiences as mediums. The following is from the volume's Introduction by Edmonds:

The visions which I have are . . . impressed on my mind as vividly and distinctly as any material object possibly can be, yet in giving them to others, I must rely upon and use my own powers of observation, my own memory, my own command of language, and I not unfrequently labor under the difficulty of feeling that there is no word known to me that is adequate to conveying the novel idea communicated. I am often conscious that I fail, from poverty of language, in conveying the sentiment I receive with the same vigor and clearness with which it comes to me. So it is also with what I may call the didactic teachings through me. Sometimes the influence is so strong, that I am given, not merely the ideas, but the very words in which they are clothed, and I am unconscious of what I am going to say until I actually say it. At other times the thought is given me sentence by sentence, and I know not what idea or sentence is to follow, but the language used is my own and is selected by myself from my own memory's storehouse. And at other times the whole current of thought or process of reasoning is given me in advance, and I choose for myself the language and the illustrations used to convey it, and sometimes the order of giving it. But in all these modes there is more or less of myself in them, more or less of my individuality underlying it all . . .

I have noticed the same thing in the Doctor [Dexter], and more than all that, I have observed in both of us that our communications not only at times contain what may be called Americanisms, but expressions peculiar to our respective professions.

It is, therefore, rarely that either of us can say that the

communications through us are precisely what the spirits designed they should be, and as they designed them; and consequently it will never do to receive them as absolute authority, however agreeable they may be or however consonant to other teachings . . .

Sometimes it is more apparent than at others, owing to many causes ever at work around us; sometimes it is owing to the physical condition of the medium, and sometimes to his mental state; sometimes to the atmosphere; sometimes to locality—some localities, such as high and hilly places being more favorable than such as are low and swampy; sometimes to the condition of those who are present, whether in a state of harmony or discord, and very frequently to the state and condition of the spirits who are professing to commune, and their aptitude to the task . . .

There is another cause, and that is, the passiveness or otherwise of the mediums to the influence at work with them. Sometimes they resist with a very determined will, and it is impossible for others, and often even for ourselves, to know when the operation of that will is entirely overcome, or how much of its influence may hang around and stain the communication with its taint of mortal life. Sometimes timidity and diffidence will color and sometimes vanity and fanaticism distort the teaching of the spirits. Often the want of confidence will warp them; for, strange as it may appear! there are mediums who are not Spiritualists, and who, unaccustomed to the examination of their own minds, can not discriminate between their operation and the spirit-influence; and as often an overweening credulity will put awry that which was designed to be plain and straightforward. (Edmonds & Dexter, 1855, pp. 39–41)

Another example was American attorney and inventor Joel Tiffany. He wrote in his book *Spiritualism Explained* that the significance of communications depended on the medium's translation of messages:

Suppose the Spirits make a communication, they make it in words. These words only address your consciousness through your understanding, and you make them mean according to your understanding of them. If the Spirit makes a communication by pantomime, it still appeals to your understanding, and depends upon your translation to give it significance. There may be error in the communication and in yourself, so that the error will be double. (Tiffany, 1856, p. 110)

My final example is from France, from the pen of Allan Kardec (pseudonym of educator Hippolyte-Léon Denizard Rivail). He wrote that when a spirit communicates in a language known to the medium he uses the words he finds there to convey his thoughts. If the communicator uses a language different from the medium's the latter's mind would not have the necessary words, and letter-by-letter dictation would be required. "If the medium can neither read nor write, she does not even possess the letters; you must therefore lead her hand like a schoolgirl; and this is an even greater material difficulty to overcome" (Kardec, 1862, p. 281, my translation).

Many other examples could be cited (e.g., Crowell, 1879, Chapter 10; Inaccuracies in communications from the spirit life, 1857; Spicer, 1853, p. 150; Wolfe, 1874, p. 96), including many published later in the Twentieth Century (e.g., Carrington, 1937, Part 1, Chapter 7; Firebrace, Vigurs, & Leaf, 1954; Leaf, 1911).<sup>2</sup> Most of these writings focused on confusions between presumably veridical messages and the content of the medium's mind, including such things as imagery and recollections. But this literature did not include suggestions for research, nor actual studies of the problem. I have presented some ideas about possibilities for research on the subject in a discussion of mediumistic mentation published in this journal (Alvarado, 2010).

In the meantime, my main point is a strictly historical one. That is, we need to recognize the conceptual contribution of spiritualists to psychical research, which extends beyond generating interest in mediumship and providing a context for its development and practice. This contribution includes the development of various other theoretical ideas that, regardless of their validity, were influential in the study of mediumship and its conceptualizations.<sup>3</sup>

## NOTES

- <sup>1</sup> Mediums were sometimes called "media" in the early spiritualistic literature (e.g., Ballou, 1852, p. 61; Capron, 1855, p. 392; Hare, 1855, p. 159).
- <sup>2</sup> The psychical research literature also has interesting discussions, as seen in studies about medium Leonora E. Piper (Hodgson, 1898; Sidgwick, 1915). Also important were James H. Hyslop's numerous



writings about the “pictographic” process (e.g., Hyslop, 1914, 1919, Chapter 10; see also Alvarado, 2009). This was a process in which “the communicator manages to elicit in the living subject a sensory phantasm of his thoughts, representing, but not necessarily directly corresponding to, the reality” (Hyslop, 1919, p. 111). The sensory impression could be in various modalities, depending on the medium. Hyslop argued that messages could be distorted when the content of the medium’s subconscious mind interfered with the interpretation of the imagery involved, or when stray or peripheral imagery came from the communicator.

- <sup>3</sup> This includes communications from the living, and ESP from the living explanations of mediumship (Alvarado, 2003), as well as ideas of psychic forces, particularly in relation to physical mediumship (Alvarado, 2006).

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## HISTORICAL PERSPECTIVE

### Early Psychological Research Reference Works: Remarks on Nandor Fodor's *Encyclopaedia of Psychic Science*

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**Abstract**—Some early reference works about psychic phenomena have included bibliographies, dictionaries, encyclopedias, and general overview books. A particularly useful one, and the focus of the present article, is Nandor Fodor's *Encyclopaedia of Psychic Science* (Fodor, n.d., circa 1933 or 1934). The encyclopedia has more than 900 alphabetically arranged entries. These cover such phenomena as apparitions, auras, automatic writing, clairvoyance, hauntings, materialization, poltergeists, premonitions, psychometry, and telepathy, but also mediums and psychics, researchers and writers, magazines and journals, organizations, theoretical ideas, and other topics. In addition to the content of this work, and some information about its author, it is argued that the *Encyclopaedia* is a good reference work for the study of developments from before 1933, even though it has some omissions and bibliographical problems.

**Keywords:** *Encyclopaedia of Psychic Science*; Nandor Fodor; psychological research reference works; history of psychological research

## INTRODUCTION

The work discussed in this article, Nandor Fodor's *Encyclopaedia of Psychic Science* (Fodor, n.d., circa 1933 or 1934), is a unique compilation of information about psychological research and related topics up to around 1933. Widely used by writers interested in overviews of the literature, Fodor's work is part of a reference literature developed over the years to facilitate the acquisition of knowledge about the early publications of the field by students of psychic phenomena. In this article I would like to bring Fodor's contribution to the attention of contemporary readers

with a summary of the content of the *Encyclopaedia*, brief information about its author, and developments around the time of its publication.

### Reference Works Covering Pre-1930 Developments

These reference works include various bibliographies (Alvarado, 1984, 2010a). An example is Albert L. Caillet's *Manuel Bibliographique des Sciences Psychiques ou Occultes* (1912), which, in addition to much material about religion and occultism, has relevant information for those interested in psychic phenomena. Caillet presented a list of authors belonging to what he referred to as occult metaphysics or modern psychism, including those “who have studied the Manifestations of the Invisible by the processes of Modern Science, abandoned until then to pure superstition and ignorance, apart from the Initiates who kept them more or less secret” (Vol. 1, p. xxxii; this, and other translations, are mine). Some of the authors mentioned were J. Rhodes Buchanan, William Crookes, Carl du Prel, Edmund Gurney, Justinus Kerner, Cesare Lombroso, Frederic W. H. Myers, and Karl Ludwig von Reichenbach.<sup>1</sup>

Other bibliographies from the old days, some of which have been forgotten by many today, are *Histoire de la Médecine et des Sciences Occultes: Notes Bibliographiques pour Servir a l'Histoire du Magnétisme Animal* (Dureau, 1869), *Best Books on Spirit Phenomena: 1847–1925* (Lovi, 1925), “La Bibliografia dello Spiritismo” (Morselli, 1908, Vol. 1, pp. xiii–xlvi), and “Bibliography: Part II: *Modern Spiritualism, 1848–1867*” (Shorter, 1867). Later works have continued this tradition, presenting references from the nineteenth and early twentieth centuries.<sup>2</sup>

In addition, our studies of the past are greatly assisted by various book-length overviews of the field (e.g., Carrington, 1930; Holms, 1925; Mackenzie, 1923; Moser, 1935; Podmore, 1897; and Richet, 1922). One with a particularly good bibliography is René Sudre's *Introduction à la Métapsychique Humaine* (1926) (see Figure 1).<sup>3</sup>

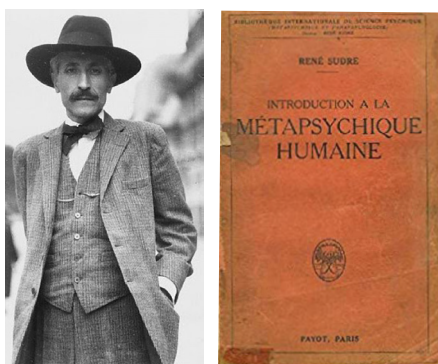


Figure 1. René Sudre and his *Introduction à la Métapsychique Humaine* (1926).

Also useful are encyclopedias such as those that are available and focus on occultism (e.g., Bosc de Vèze, 1904; Spence, 1920), which brings us to the unique work discussed here, Nandor Fodor's *Encyclopaedia of Psychic Science* (n.d., circa 1933 or 1934). Arthur Press in London published the book without a publication date. Fortunately, the book's preface, by Oliver Lodge, was dated October 4, 1933, indicating that the book was published after that date in 1933, or later in 1934, which seems more likely.<sup>4</sup>

### **Psychical Research During the 1930s**

Psychical research presented several interesting developments during the 1930s. In his book *Parapsychologie: Die Wissenschaft von den "okkulten" Erscheinungen*, German biologist and philosopher Hans Driesch (1932) wrote about methodological and theoretical aspects of the field, focusing on deception in the first section of his work. The empirical approach in psychical research, Driesch argued, was as rational as that in other sciences and had the possibility of bringing understanding via its research efforts.

In France, in one of his last books, *La Grande Espérance* (1933), physiologist Charles Richet referred to psychical research, which he called metapsychics, as the investigation of the inhabitual. He believed the field promised much in terms of future knowledge about human nature. But in his view: "The truths of metapsychics do not reverse any of the laws that science has established. They introduce in science a new chapter, the inhabitual. That is all" (p. 246).

In the United States Hereward Carrington also wrote about the subject. He stated that scientific acceptance of psychic phenomena was predicated on future research, efforts that would eventually be found persuasive to other scientists. In his opinion,

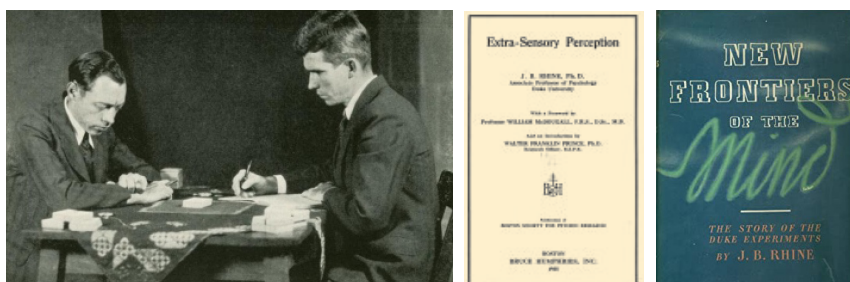
when that turning-point has been reached, there can be no question that adequate funds for the work will be forthcoming, and that rapid progress will be made in all branches of this investigation. Implications and interpretations will follow. Our prime need, still, is well-observed, thoroughly authenticated *facts*. (Carrington, 1937, p. xvi)

Some aspects of the range of topics investigated during the

1930s were evident in international congresses of psychical research held in London (Besterman, 1930) and in Oslo (Anonymous, n.d., circa 1935). The papers at the 1935 congress came from participants of various nationalities, among them Denmark, England, France, Greece, Holland, Hungary, Italy, and Norway. A few of the presentations were about cerebral radiations (by Ferdinando Cazzamalli), “cryptesthesia” (Charles Richet, in absentia), mediumistic controls (Thorstein Wereide), mediumistic predictions of a death (K. E. Bodtker), precognitive dreams (W. H. C. Tenhaeff), telekinetic effects (Angelos Tanagras), transfiguration (Nandor Fodor), and word associations tests with mediums (Whately Carington) (see also Fodor, 1935).

The 1930s also brought us the ESP experiments conducted at Duke University published in J. B. Rhine’s *Extra-Sensory Perception* (Rhine, 1934a), elsewhere (e.g., Rhine, 1934b, 1934c, 1936), and popularized in *New Frontiers of the Mind* (Rhine, 1937) (see Figure 2). Reports of ESP experiments were also published by other members of Rhine’s research team (e.g., Bond, 1937; Price & Pegram, 1937), and by researchers in England such as Whately Carington (1935), S. G. Soal (1931), and G. N. M. Tyrrell (1935). This last author noticed that the gifted psychic he was testing was more successful when she had a positive state of mind, and when she showed a tendency for “losing herself” in the experiments, which Tyrrell interpreted as a form of dissociation.

In addition there were studies and analyses of a variety of



**Figure 2.** J. B. Rhine (right) and experimental participant Hubert Pearce. Rhine’s *Extra-Sensory Perception* (1934a) and *New Frontiers of the Mind* (1937).

experiences, such as hauntings (Bret, 1938), apparitions (Hart & Hart, 1933), out-of-body experiences (Mattiesen, 1931), and ESP during psychoanalytic therapy (Servadio, 1935/1953). Premonitions were

discussed by various authors (e.g., Saltmarsh, 1934; Vivante, 1933), an important example being Charles Richet in his book *L'Avenir et la Premonition* (n.d., circa 1931). With premonitions, Richet stated at the end of his book, “let us boldly enter the cryptocosmos, the world of the occult, because we can rest assured that there are wonders to discover” (pp. 237–238).

There was also attention to mediumship, as seen in methodological discussions (e.g., Pratt, 1936, Saltmarsh & Soal, 1930), and in studies of mental mediumship (e.g., Balfour, 1935; Thomas, 1937). This was the general time period in which Whately Carington (1934) started publishing his word association studies with spirit communicators.

Some of the mental mediums studied included Eileen J. Garrett (Rhine, 1934c), and Gladys Osborne Leonard (Richmond, 1936). In his book *De la Planète Mars en Terre Sainte: Art et Subconscient*, archaeologist and historian Waldemar Deonna (1932) analyzed the mediumistic paintings of Hélène Smith (the pseudonym of Catherine Élise Müller), studied earlier by Théodore Flournoy (1900). Deonna (see Figure 3) argued that Flournoy’s psychological interpretation of the medium’s communications fueled the medium’s unconscious mind to produce paintings and visions for the purpose of rejecting Flournoy’s psychological interpretation of her mediumship,<sup>5</sup> which she believed were caused by spirits, and thus to exteriorize her desires. The paintings, Deonna believed, were possibly thanks to a “slow mental incubation: unconscious desires, childhood recollections, autosuggestions, [and] external suggestions” (p. 205).

There was also work conducted with physical mediums, such



Figure 3. Ernesto Bozzano, Waldemar Deonna, and Eugène Osty (left to right).



as with Rudi Schneider (Osty & Osty, 1931–1932), among others (e.g., De Goes, 1937; Servadio, 1932; Stephenson, 1936). Some of them were studies of psychic photography (e.g., Johnson, 1934), and materialization phenomena (e.g., Blacher, 1931/1932; Hamilton, 1934). The last-mentioned author, physician Thomas Glendenning Hamilton, not only documented and photographed materializations, but also reported that some of his mediums “often exhibited rhythmic movements of their hands or feet—stamping, rubbing the hands, rubbing the wood of the cabinet, rubbing their arms and sometimes the arms of the adjacent sitter or another medium . . .” (p. 119). This was related to, according to Hamilton (and the medium’s spirit controls), the release of forces used to build a materialized form, an idea prevalent in the materialization literature (Alvarado, 2019c).

In addition to these ideas of mediumistic forces, there were also many conceptual discussions, a leading example being discarnate agency, and survival of death in general. Some examples are E. R. Dodds’ (1934) well-known article “Why I do Not Believe in Survival,” and the opinions of various others (e.g., Rhine, 1933; Richet, 1934). In addition, the 1930s literature presents discussions about two types of telepathy (Bozzano, 1933b), offering theoretical ideas to explain such phenomena as out-of-body experiences, apparitions of the living and hauntings (Bret, 1938), and precognitive experiences (Tanagras, 1933).

In Italy, the prolific Ernesto Bozzano (see Figure 3) was publishing long discussions about a wide range of phenomena. These included such topics as raps, mediumistic xenoglossy, transfiguration, and mediumship, and hauntings (Bozzano, 1933a, 1933c, 1934, 1935). French researcher Eugène Osty (see Figure 3) also wrote much in the 1930s about several topics, such as haunted houses (Osty, 1936a), premonitions of events in the remote future (Osty, 1936b), and performances of psychics in public (Osty, 1937b).

## **Nandor Fodor**

Oliver Lodge wrote in the preface to the *Encyclopaedia*:

An encyclopaedia of Psychic Science!—I had not thought that such a preparation was possible, nor would it have been possible without a combination of great energy with considerable knowledge such



as is possessed by the Hungarian Dr. Nandor Fodor. (Lodge, n.d., p. xxvii)

The following brief discussion of Fodor is based on an essay written by Leslie Shepard (1966) and the writings of others (Spraggett, 1969; Timms, 2012), including Fodor (1959a, 1968) himself (see Figure 4).

Nandor Fodor (1895–1964), who was born in Hungary, qualified for an LL.D. Throughout his life he worked as a journalist, a psychical researcher, and a psychoanalyst. His interest in psychical research started in 1921 when he went to live in New York. He had many séances with mediums during the 1920s, among them William Cartheuser and Nino Pecoraro.



Figure 4. Nandor Fodor.

In his book *Mysterious People*, Fodor (1934b) compiled articles he had published in the *Bristol Evening World* about several mediums, among them Leonora Piper, the Davenport Brothers, William Stainton Moses, D. D. Home, Franek Kluski, and Stanislaw Tomczyk.

Fodor wrote about his career in psychical research:

I had no official position in the psychic movement until, in 1933, I was appointed Assistant Editor to *Light*,<sup>6</sup> the weekly organ of the London Spiritualist Alliance . . . I held the post until May 1935, concurrently for a year, with a new office, that of Research Officer of the International Institute for Psychical Research. (Fodor, 1968, p. 72)

While Fodor worked at the Institute he conducted investigations of poltergeists and mediums. An example of the latter were his sittings with apport medium Lajos Pap (Fodor, n.d., circa 1936; see also Nahm, 2019). But he was fired from the Institute as a reaction to his psychosexual ideas about a poltergeist case (Fodor, 1958, 1959a; Timms, 2012).

Fodor published much about psychic topics over the years, including *These Mysterious People* (Fodor, 1934b), *Haunted People*



Figure 5. Fodor's *The Haunted Mind* (1959a) and *The Unaccountable* (1968).

(Carrington & Fodor, 1951), *On the Trail of the Poltergeist* (Fodor, 1958), *The Haunted Mind* (Fodor, 1959a) (Figure 5), *Mind Over Space* (Fodor, 1962), *Between Two Worlds* (Fodor, 1964), *The Unaccountable* (Fodor, 1968), and *Freud, Jung, and Occultism* (Fodor, 1971).<sup>7</sup> He also worked as a psychoanalyst in New York and published on the subject and on various psychological

matters (e.g., Fodor, 1945a, 1946, 1949, 1951).

Fodor was also interested in theory, as can be seen in his articles about apports and materialization phenomena (Fodor, 1932, 1934a). But most of his writings in this area were about psychoanalytic ideas. Like Sigmund Freud, and various psychoanalysts, among them Helene Deutsch, Edward Hitschmann, Emilio Servadio, and Paul Schilder (see Devereux, 1953), Fodor (1942, 1947/1953) discussed ESP and dreams in the context of psychoanalytic therapy. He suspected telepathy to be an unconscious cognitive faculty in which “the tie of love opens one’s unconscious to another” (Fodor, 1947/1953, p. 295).

Fodor later extended his interests to the psychology and sexual aspects of poltergeists (e.g., Fodor, 1948, 1958, 1959a, Chapter 5). In fact, his psychological examination of the Thornton Heath poltergeist obtained Freud’s support, expressed in a 1938 letter he sent to Fodor (Fodor, 1958, pp. 10–11).

In an untitled short essay that appeared in Francis J. Mott’s *Consciousness Creative* (1937, pp. 153–157), Fodor argued that poltergeists were generally associated with youngsters approaching puberty. He wrote:

The loss of its power always coincides with the beginning of the menses with a natural relief of the sexual tension. It is as if the sexual energies which are blossoming into maturity within the body would, instead of taking their normal course, be turned into another channel and exteriorized beyond the limits of the body, producing the manifestation in question. (p. 155)<sup>8</sup>

Fodor (1948) suggested that poltergeists were produced by psychokinetic actions from living persons and not from spirits. “Are we facing in the poltergeist,” he asked some years later, “a psychosomatic dissociation, a mental split conjoined with an abnormal employment of extra-physical organismic energies?” (Fodor, 1959a, p. 72). Although not generally acknowledged, such psychodynamic speculations about poltergeists were not new with Fodor. Such discussions had appeared in the German psychical research literature, particularly in the *Zeitschrift für Parapsychologie* (e.g., Schrenck-Notzing, 1928, pp. 518–520; Simsa, 1931; Winterstein, 1926b; see also Winterstein, 1926a, in a different journal).<sup>9</sup>

## THE CONTENT OF THE *ENCYCLOPAEDIA OF PSYCHIC SCIENCE*

As was mentioned above, the compilation of information that went into the *Encyclopaedia* was monumental, containing more than 900 entries in alphabetical order. This becomes more impressive when one realizes that Fodor included information published in languages other than English (mainly French, German, and Italian), and that he did not have the Internet or computer resources. As an aside, Fodor (1959b) wrote in later years that Hereward Carrington had complimented him for the “tremendous amount of work” (p. 111) behind the *Encyclopaedia*.

Many of the entries included by Fodor were about phenomena. A few examples were: *Apparitions*, *Apports*, *Auras*, *Automatic Writing*, *Bilocation*, *Clairvoyance*, *Direct Voice*, *Emanations*, *Fire Immunity*, *Haunting*, *Levitation*, *Luminous Phenomena*, *Materialisation*, *Obsession*, *Premonitions*, *Psychometry*, *Raps*, *Retrocognition*, *Table Turning*, and *Telepathy*. Some of these entries were quite long, covering many aspects of the phenomena. For example, the *Haunting* one had sections about specific cases, and other topics, among them the “laying of the haunTERS” (p. 162), “premonitory haunting” (p. 162), and “speculations of the early S.P.R. researchers” (p. 164). Others had interesting information, such as the following about *Automatic Writing*:

The quantity of automatically-written books is such that it is difficult to mention more than a few as, for instance, Elsa Barker’s *Letters from a Living Dead Man*, *War Letters from a Living Dead Man*, *Last Letters from a Living Dead Man* . . . the remarkable books of

Patience Worth . . . produced through Mrs. John H. Curran of St. Louis, . . . *The Seven Purposes* by Margaret Cameron, . . . J. S. Ward's *Gone West* and *A Subaltern in the Spirit Lands*, the anonymous *Private Dowding* (by W. Tudor Pole), the *Revelations of Louise, Claude's Book*, 1908, *Claude's Second Book*, 1919, and *Claude's Third Book*, 1920 by Mrs. Kelway Bamber . . . (p. 23)

There were also entries about less common phenomena, including *Exteriorization of Sensitivity*, *Dematerialization*, *Music*, *Touches*, *Transportation* (of the human body), *Perfumes*, and *Winds*. Music referred to both musical sounds heard in séances using instruments, or without them, and to musical sounds coming from instruments played by mediums, but Fodor included music heard in connection with deaths as well. Although not mentioned by Fodor, Ernesto Bozzano (1922) had published before the appearance of the *Encyclopaedia* a study of these occurrences, which he called transcendental music. He presented 30 cases in his article classified as music heard: via mediums (mediums playing instruments under supposed spirit influence or music heard in their presence with no instruments), via telepathy, in hauntings, in cases unrelated to death, around deathbeds, and after a death.

The entry about *Control* (spirit controls) is particularly interesting, covering topics such as the “human qualities of the control” (pp. 57–58), the “picturesque element” (pp. 58–59), and “control by the living” (pp. 58–61). Interestingly, Fodor wrote:

There are many instances in which the same control has manifested through different mediums. They have particular favours for one medium at a time and on his death or loss of power pass on to another. John King, who claimed to have been Sir Henry Owen Morgan, the buccaneer king, first appeared in the Davenport seances and is still performing his duties . . . American Indians figure as controls in a surprising number of cases. They bear romantic or plain Indian names . . . Other exotic nationalities are also met with. Tien-Sen-Tie (J. J. Morse) was a Chinaman. Eyen (Mrs. Travers Smith) an Egyptian, Morambo (Mrs. Wallis) a Kaffir; Feda of Mrs. Leonard is an Indian native, Dr. Hooper is attended by a fakir, Mrs. Brittain by a Senegalese child, Mrs. Garrett has an Arab control . . . Children furnish another interesting group of controls. The best-known names are: Feda (Mrs. Osborne Leonard), Nelly

(Mrs. Thompson), Dewdrop (Bessie Williams), Sunshine (Mrs. Meurig Morris), Little Stasia (Mlle. Tomczyk), Ninia and Yolande (Mme. D'Esperance), Belle (Mrs. Annie Brittain), Bell (Mrs. F. M. Perriman), Harmony (Mrs. Susannah Harris), Snow Drop (Mrs. Maud Lord Drake) and Pocka (Miss Wood). (pp. 58–59)

A particularly interesting entry is the one about *Death*, which according to Fodor is “the greatest psychical experience” (p. 80). The discussion considered near-death experiences, as well as seeing spirits come out of the body of people at death. According to Fodor: “Dr. H. Baraduc attempted to secure photographic record when his son and wife died. He found that in each case a luminous, cloud-like mass appeared over the bodies and impressed the photographic plate” (p. 82). I wish he had provided more information, and a bibliographical reference, about this interesting use of photography, which French physician Hippolyte Baraduc reported in his short book *Mes Morts* (1908).

Fodor also wrote about famous cases, among them *Angels of Mons*, *Bealing Bells*, *Cock Lane Ghost*, *Drummer of Tedworth*, *Epworth Phenomena*, *The Watseka Wonder*, and *Willington Mill*. The entry about *Angelique Cottin* presents an old case of electrical-like physical phenomena, some in poltergeist style, that were recorded by French physician Stanislas Tanchou (1846) in some detail (see Figure 6). As mentioned by Fodor, Tanchou got the famous scientist François Arago interested in the case, which ended with a commission of other scientists, among them Henri Becquerel, who presented a report at the Academy of Sciences. Initially Arago observed some phenomena he was not sure about (Anonymous, 1846, p. 306), and then he proceeded to gather together an investigative commission. As Fodor wrote:

“Their report, submitted three weeks later, only admitted the sudden and violent movements of the chair on which the girl was sitting. They were not satisfied, however, that these movements were not due to muscular force” (p. 66). Fodor did not cite the report, but an examination of it

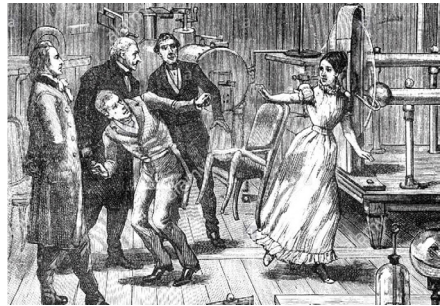


Figure 6. Sketch of incidents reported around Angelique Cottin.



**Figure 7.** Ferdinando Cazzamalli.

shows that the commission dismissed the case (Arago et al., 1846).

Other entries were about theoretical ideas, such as *Animism*, *Methetherial*, *Psychic Force*, *Psychorrhagic Diathesis*, *Telergy*, and *Spirit Hypothesis*. But theory was also presented in entries about specific phenomena, among them *Apparitions*, *Hauntings*, *Psychometry*, and *Telepathy*. In the latter entry Fodor had a section about the “wave theory” (pp. 376–377) in which he mentioned William Crookes and Ferdinando Cazzamalli (Figure 7). “The wave theory of telepathy,” he wrote, “has been abandoned” (p. 377). But this was not the case with some who, like Cazzamalli, continued discussing electromagnetic brain radiations during the 1930s and even later (Garzia, 1991).

Related to the concept of waves, was the main idea of the entry *Emanations*, or the exteriorization of forces out of the body to produce psychic phenomena. This is an ancient concept that arrived in psychical research mainly via the mesmeric and spiritualistic literatures, but that to some extent was also nurtured by ideas from physics (Alvarado, 2006, 2015; Noakes, 2019). The concept of vital, nervous, or psychic forces as the agent behind telepathy, telekinesis, healing, materialization, and other phenomena, was seriously discussed by many during the 1930s, as seen in the writings of Carrington (n.d., circa 1939), Hamilton (1934), and Osty (1937a). But as argued before (Alvarado, 2006), these ideas became less popular in academic parapsychological circles in later years.

An example of the application of these ideas to account for physical mediumship during the 1930s are the comments of Thomas Glendenning Hamilton. He argued that the phenomena produced by his mediums suggested the action of

unknown energy-accumulation and energy-storing processes going on over a considerable period of experimental time with the psycho-dynamic energies thus acquired being drawn from every mediumistic source available throughout each series of consecutive sittings. (Hamilton, 1934, p. 120)

Other entries presented by Fodor in the *Encyclopaedia* consisted of short biographies of scholars and researchers involved with psychic phenomena. Examples were: *Ernesto Bozzano*, *Dr. Hereward Carrington*, *Dr. W. J. Crawford*, *Prof. Hans Driesch*, *Dr. Giovanni Battista Ermacora*, *Prof. Théodor Flournoy*, *Dr. Gustave Geley*, *Edmund Gurney*, *James Hervey Hyslop*, *Sir Oliver Lodge*, *Cesar Lombroso*, *Enrico Morselli*, *Frederick* [sic] *William Henry Myers*, *Dr. Konstantin Oesterreich*, *Dr. Eugen* [sic] *Osty*, *Dr. Charles Richet*, and *Baron A. Schrenck-Notzing*.

Fodor also listed several figures who were active in different ways as theorists, researchers, and organizers of different sorts before the 1870s. This group included *J. Rhodes Buchanan*, *John Worth Edmonds*, *Baron L. de Guldenstubbe*, *Robert Hare, M.D.*, *Allan Kardec*, *Dr. Justinus Kerner*, *James J. Mapes*, *Dr. Maximilian Perty*, and *Marc Thury*.

Some of the many mediums and psychics included were: *Miss Florence Cook*, *Mrs. Margery Crandon*, *William Eglinton*, *Pascal Forthuny*, *Daniel Dunglas Home*, *Franek Kluski*, *Mrs. Gladys Osborne Leonard*, *Francis Ward Monck*, *William Stainton Moses*, *Stephan Ossowiecki*, *Eusapia Paladino*, *Mrs. Leonore* [sic] *E. Piper* (Figure 8), *Willy and Rudi Schneider*, and *Dr. Henry Slade*. A few entries were about magnetic somnambules, among them the *Alexis & Adolphe Didier Brothers*, *Emma*, and *Adèle Maginot*. There were also persons represented around whom spontaneous poltergeist-type physical phenomena took place (*Mary Jobson*, *Eleonore Zugun*), and individuals presenting various phenomena in a religious context (the *Curé d'Ars*, *Therese Neumann*).

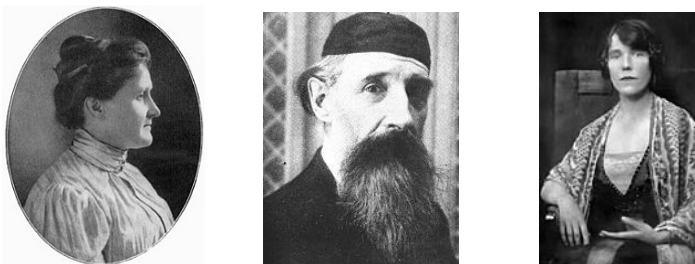


Figure 8. Leonora Piper, Pascal Forthuny, and Gladys Osborne Leonard (left to right).

To his credit, Fodor also included entries about lesser-known individuals, although it may be argued that they were better-known at the time he was writing and in the places they lived. Some examples



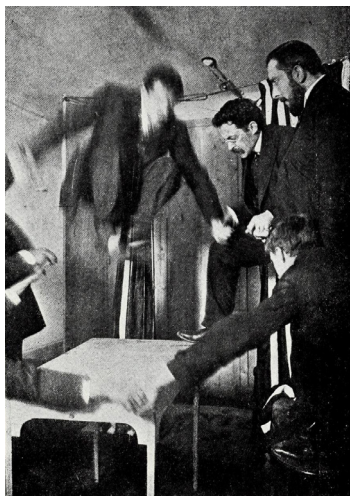


Figure 9. Levitation of Zuccarini.

were Mme. Andrade, George Aubert, Kathleen Barkel, Countess Castelwitch, Vincent N. Turvey, Adelma Vay, Abby Warner, Bessie Williams, M. A. Williams, and Amedee Zuccarini. The latter was reported to produce physical phenomena such as his own levitation, which was photographed. The result gave the impression that the medium was jumping when the photo was taken (Patrizi, 1907). Patrizi stated that in one of the photos (Figure 9) the curtain provided a background “to the ascent of our Zuccarini; no less than a meter

away from the mediumistic cabinet, and both feet are visibly projected forward” (p. 545). The figure of the medium, he stated, was clumsy and unattractive.

A few entries were about the movements of *Mesmerism*, *Spiritualism*, and *Psychical Research*. The discussion about *Spiritualism* had sections about the phenomena of the movement, *Spiritualism* and religion, and short overviews of its history in various countries. Fodor commented about overviews of *Spiritualism*:

The earliest work on the history of spiritualism was E. W. Capron's *Modern Spiritualism*, Boston, 1855. Historical sketches were given in Henry Spicer's *Sights and Sounds*, London, 1853. William Howitt's *The History of the Supernatural*, London, 1863, traces the antecedents of spiritualism in past ages, Emma Hardinge's *Modern American Spiritualism*, New York, 1869, records twenty years' history. Her *Nineteenth Century Miracles*, Manchester, 1883, widened the scope to international scale. The foremost historian is Frank Podmore. His *Modern Spiritualism*, London, 1902, is a classical work, though the author's extreme scepticism is its disadvantage. Joseph McCabe's *Spiritualism* is a hostile book written in an effort to discredit the subject. Arthur Hill's *Spiritualism, Its History, Phenomena and Doctrine*, London, 1918, is fragmentary. A. Campbell Holms' *The Facts of Psychic Science and Philosophy*, London, 1925, deals with the phenomenal and philosophical side alone, Conan Doyle's *History of Spiritualism*, London, 1926, is comprehensive but loose in concept



and unpunctilious, Carrington's *The Story of Psychic Science*, 1931, is a lucid study of the whole range of spiritualism and psychical research. (p. 366)

I agree with Fodor's praise of Podmore's (1902) two-volume work, even when we consider the latter's ultra-skeptical attitudes, which are sometimes justified. The book is still impressive on account of its wide coverage of relevant topics, and its attention to many important phenomena, individuals, ideas, and investigations. It is divided into four general parts covering the antecedents of Spiritualism, developments in the United States, developments in England, and the topic of mediumship. The first section, "The Pedigree of Spiritualism," covers such topics as possession and witchcraft, poltergeists, sympathetic magic, mesmerism, and the activities of Andrew Jackson Davis.

The literature about beliefs and observations related to Spiritualism and psychic phenomena before the nineteenth century is not limited to William Howitt's useful well-known study *The History of the Supernatural* (1863), a book mentioned by Fodor. It also includes many other informative books. One of them, mentioned in a later entry by Fodor (p. 386), is August Friedrich Ludwig's *Geschichte der okkultistischen (metapsychischen) Forschung von der Antike bis zur Gegenwart* (1922), a book that surveyed topics such as the ideas of Aristotle, the Neoplatonists, the Pythagoreans, and the medieval Arabic philosophers and mystics. Furthermore, readers may want to consult publications such as *Storia dello Spiritismo* (Baudi di Vesme, 1896–1897), *Los Espíritus* (Otero Acevedo, 1893), and *Le Spiritisme dans la Bible* (Stecki, 1869).<sup>10</sup> Another important book, unfortunately forgotten by many in parapsychology today, and actually mentioned in the entry about *Louis Figuier*, is this science writer's *Histoire du Merveilleux dans des Temps Moderns* (Figuier, 1860). This skeptically-oriented book has four volumes covering such topics as the Loudun possessions, the convulsionnaires of Saint-Médard, Protestant prophets, the dowsing rod, animal magnetism, turning tables, and mediumship. The point of the book, wrote the author in the last volume was that "the love of the marvelous, innate to the nature of man, varies little in its manifestations, and that, from ancient times to the present day, the forms under which it has occurred, are, basically, few, despite their apparent diversity"

(Figuier, 1860, Vol. 4, p. 375). Figuier felt that if he was able to bring back to reason those confused by the deceptive illusion of an ill-conceived mysticism common during his century, he would have reward enough for his efforts.<sup>11</sup>

There were entries about organizations such as *Boston Society for Psychic Research*, *British College of Psychic Science*, *Institute Général Psychologique*, *Institut Métapsychique International*, *Society for Psychical Research*, and *Society for the Study of Supernormal Pictures*. Another example was:

AMERICAN PSYCHICAL INSTITUTE AND LABORATORY, organised in New York in 1920 by Dr. Hereward Carrington for specialised research. It existed for two years. In 1933 it was reorganized and incorporated under 20 W. 58th Street, New York. Carrington became its director, his wife, Marie Sweet Carrington, Secretary. A long list of scientific men of international repute make up the advisory council. The Institute publishes *Bulletins*. (p. 2)

Fodor also discusses devices and instruments such as: *Biometer of Baraduc*, *Communiograph*, *Dynamistograph*, *Ouija Board*, *Psychic Telephone*, and *Sthenometer*. The latter was an instrument invented by French physician Paul Joire to measure the exteriorization of nervous force from the human body, a topic covered as well in *Emanations*. It was described by Fodor as follows:

In the centre of the horizontal dial, marked out in 360 degrees, is a light needle or pointer, mostly of straw, balanced by a pivot on a glass support. The whole is covered with a glass shade. When the extended fingers of one's hand are brought at right angles to the pointer, near the shade without touching it, after a few seconds, in the majority of cases, a decided movement of the pointer takes place, it being attracted towards the hand. (p. 369) (see Figure 10)

Fodor rightly pointed out that some “attributed the movement of the needle to the action of radiating heat” (p. 369). But in addition to this it is important to remember that Joire (1905) believed he had evidence that the action on the instrument's needle reflected the person's health, which in turn affected the nervous system from which the nervous force was believed to be projected. So, in the case of neurasthenia, he wrote:

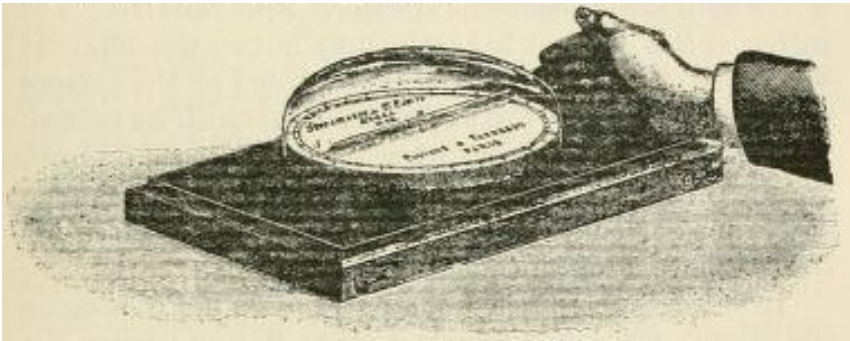


Figure 10. Paul Joire's Sthenometer.

The fundamental characteristic . . . which we shall find in all patients afflicted with neurasthenia, is the complete reversal of the force externalised, which is shown by the fact that the deviation obtained with the left hand is greater than that given by the right, which is diametrically the reverse of the normal condition. (Joire, 1905, p. 222)<sup>12</sup>

Furthermore, Fodor listed several journals and magazines, among them *Annales des Sciences Psychiques*, *Annali dello Spiritismo*, *Annals of Psychic Science*, *Banner of Light*, *Borderland*, *Journal of the American Society for Psychical Research*, *Light*, *Luce e Ombra*, *Occult Review*, *Psychic Science*, *Psychische Studien*, *Revue Métapsychique*, *Rivista di Studi Psicici*, *Zeitschrift für Parapsychologie*, and *Zoist* (see Figure 11). He also presented lists of the titles of articles published in the *Bulletin* of the Boston Society for Psychic Research, the *Proceedings of the American Society for Psychical Research*, and the *Proceedings of the Society for Psychical Research*.

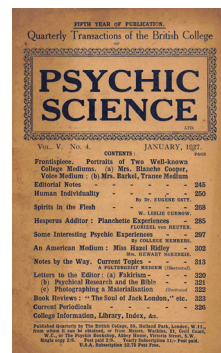
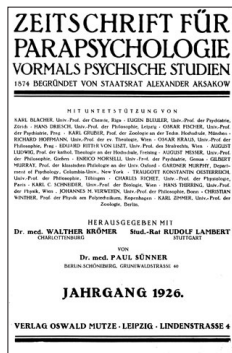


Figure 11. *Light*, *Zeitschrift für Parapsychologie*, and *Psychic Science*.

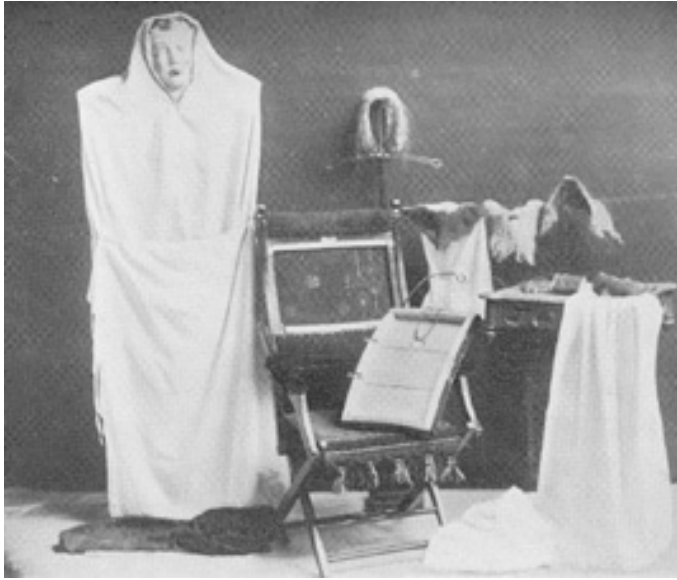
The *Encyclopaedia* also included entries about *Spheres*, *Survival*, and *Summerland*. In a discussion of *Communication* Fodor commented on mediumistic communications. He included topics such as “The Play of the Subconscious—Deceiving Spirits” (pp. 51–52), and “The Personal Character—Difficulties and Complications of Communications” (p. 52). The latter topic reminds me of James H. Hyslop’s (1919, Chapter 10) discussion of what he referred to as the pictographic process in mediumistic communications. Hyslop postulated that “the communicator manages to elicit in the living subject a sensory phantasm of his thoughts, representing, but not necessarily directly corresponding to, the reality” (p. 111). Spontaneous marginal imagery, and association of ideas, could introduce errors in communication, particularly, Hyslop argued, when a deceased individual communicated via a spirit control. Those familiar with the mentation produced by Gladys Osborne Leonard (Thomas, 1928), will remember the importance of imagery in her mediumistic communications.

The issue of fraud also received attention. This was discussed in entries about mediums, such as *Charles Eldred* and *William Eglinton*, among others. Regarding Eldred’s materializations, Fodor wrote:

A cavity was found in the back part of the chair on which he was sitting and they found in it, after the seance, a collapsible dummy head of stockinette with a flesh-coloured mask, six pieces of white China silk, containing in all thirteen yards, etc. (p. 122) (see Figure 12)<sup>13</sup>

But there was also an entry about *Fraud*. According to Fodor fraud “is now fairly well understood and guarded against” (p. 148). Unfortunately, previous and later discussions of fraud show the issue is not as simple as Fodor stated. For one, the possible existence of unconscious fraud mentioned in the entry (pp. 149–150), and proposed by many (e.g., Ochorowicz, 1896), has not been universally accepted and many times there is no clear evidence to accept the argument in specific cases. In addition, there has been a tendency to ignore or minimize fraud in some circles, showing that apparent clear exposures of fraud can be as controversial as the phenomena that was supposedly simulated.<sup>14</sup>

In the same entry about fraud, Fodor reminded us of the various precautions used to control physical mediums:



**Figure 12.** Materials used to fake materializations found inside Charles Eldred's chair.

Wooden sleeves and pants were tied on the Davenport Brothers in Bangor, U.S.A., Politi was brought before the psychical research society of Milan in a woolen sack, Mme. d'Esperance, Miss Wood and Miss Fairlamb were meshed in nets like fish to prevent masquerading during their seances of materialisation, Miss Florence Cook was closed into an electric circuit, Bailey was shut in a cage with mosquito netting in Australia, Eusapia Paladino was tied by Prof. Morselli to the couch with a thick, broad band of surgical tape, the kind used in asylums to fasten down maniacs . . . (p. 148)<sup>25</sup>

### SOME CRITIQUES

Much praised at the time it appeared (Ballanff, 1934; De Brath, 1934), the *Encyclopaedia* is, without doubt, a very useful reference work to obtain information about psychical research and Spiritualism before 1933. In fact, to this day, it remains a unique and valuable tool for bibliographical research. As stated before, the book "is likely for many years to come to be of great assistance to students of psychical research, especially to those who use the work primarily as a means of increasing their information by consulting the original sources" (Salter, 1934, p. 207).

However, the *Encyclopaedia* has a few problems, as pointed out by others (e.g., Barbanell, 1934; Battersby, 1934). Typical of the critical approach of the Society for Psychical Research, William H. Salter (1934) commented in the Society's journal that Fodor's work presented several instances of uncritical coverage consisting of lack of mention of suspicious circumstances surrounding phenomena produced by some mediums. It is true that coverage could have been more critical in various instances. But this also shows, as I mentioned before, the subjectivity of many evaluations regarding fraud in mediumship characteristic of the spiritualistic and psychical research literatures. In any case Salter's advice about using the encyclopedia to obtain the original sources is a sound one, and one that should be applied to *any* secondary source of information.

Fodor provided references for many of his entries, but this was done in an inconsistent way. For example, some entries had a list of publications at the end, as seen in the 39 books listed at the end of the entry about *Apparitions*. Others had references embedded in the content of the entry, as in the one about *Apports*.

While useful, the references tended to be incomplete, and make the work of tracing the source difficult, but not impossible. This is particularly the case with journal and magazine articles. One of the worst examples is "Bird pointed out in a letter to *Light* . . ." (p. 398).

Less problematic references, but still incomplete, are: "*Luce e Ombra*, August–October, 1927" (p. 11), *Zeitschrift für Parapsychologie*, June, 1932" (p. 44), "*The Spiritualist* of March 22, 1878" (p. 119), "*Pall Mall Gazette* (May 5, 1868)" (p. 137), "In 1898 Professor James wrote in the *Psychological Review*" (p. 284), and "In *Proceedings*, Vol. XXIX, Mrs. Verrall reviews . . ." (p. 385). However, my critiques should be seen in the context of the style used for references in the old days, which is quite different from current practices.

But the worst problem is that there are no references for many statements and quotes. A few examples of this include information referring to Angelo Brofferio about a writing medium (p. 22), William J. Crawford's suicide (p. 69), the exposure of William Eglinton (p. 119), Frederic W. H. Myers on deception (p. 149), a test of Mrs. Cannock (p. 318), and J. B. Ferguson on phenomena produced by the Davenport Brothers (p. 392). Similarly, the entry about *Emanations* lacked references

to Fodor's mentions of the work or opinions of individuals such as Louis Darget, Louis Favre, Julian Ochorowicz, Oliver Lodge, Joseph Maxwell, E. K. Müller, Charles Richet, and Charles Russ, among others. As stated by a reviewer of the *Encyclopaedia*: "Some further bibliographies we would have welcomed" (Battersby, 1934, p. 57).

Other problems with the *Encyclopedia* are the lack of precise information in some entries. I found that the entries about *Ernesto Bozzano*, *Hans Driesch*, *Carl du Prel*, *Gustave Geley*, and *Enrico Morselli* were lacking information about the methods and conceptual approaches followed by these men in their studies of psychic phenomena. For example, regarding Morselli it was stated that his "psycho-dynamic theory of materialisation phenomena is a compromise between psychological orthodoxy and the spirit theory" (p. 247), but there was no clear explanation of the content of the actual theory, nor of Morselli's (1908) views about the pathology of mediumship (see also Alvarado, 2018). The issue is clearer in Fodor's entry about materialization phenomena (p. 218).

Although Fodor mentioned Gustave Geley's nonmaterialistic approach, he did not discuss that Geley thought that the very existence of some phenomena showed evidence for non-physical causation. For example, Geley (1922) affirmed that ideoplasticity in materialization phenomena established the "omnipotence of the Idea and its preponderance over the matter it organizes, which it shapes and conditions!" (p. 32). This was a negation of materialist assumptions because: "The idea can no longer be considered as a product or a secretion of matter" (p. 33).

A similar lack of information limited the entry *International Congress of Psychical Research* to say, "periodical gathering of psychical researchers from all over the world" (p. 185). In addition to the exchange of information via the presentation of papers, the congresses were an attempt to improve the field, to professionalize it, as seen in suggestions to develop a standard terminology and an international bibliography (Anonymous, 1923).

Another example of incomplete coverage included the mention in the entry about *Hypnotism* of "three classical states" shown by the hypnotized, namely catalepsy, lethargy, and somnambulism. It is correct to refer to these "states" as classic due to their defense by



physicians at the Salpêtrière (e.g., Charcot, 1882), writings that were very influential during the last part of the nineteenth century. But the issue was not that simple. Even some of Charcot's followers argued that the states could vary depending on the type of person used in experiments and the hypnotic induction procedures used, and that there could be intermediate states (Binet & Féré, 1887, Chapter 6). But Fodor did not mention this, nor that there were many differences of opinion about the variety of hypnotic states proposed during the nineteenth century by individuals such as Edmund Gurney (1884) and Pierre Janet (1886), showing that the topic was a controversial one.

### CONCLUDING REMARKS

Fodor's *Encyclopaedia* presents information about many things that illustrate the pre-1930s interest and study of psychic phenomena, such as mental and physical mediumship. He has given us a view of the past in easy-to-read entries that will increase our knowledge of the old days of psychical research and related topics, and more important, a guide to access some of the publications that are the building blocks of the knowledge accumulated about psychical research.

The work will be particularly useful for the modern student if it is used as a first step to obtain a general background on the subject and as the means to find some of the necessary primary sources to go more in depth on the topic. When readers do this, they may reach different conclusions from those of Fodor, something that is not unique to this work, but that may be the case with other reference works. Some may feel, as I have on occasion, that Fodor could have qualified more of the evidential claims of the phenomena he describes. However, we must remember that his purpose was basically to allow readers to be exposed to the ideas and reports present in the psychic literature, a job he did well. In Fodor's own words presented in the Introduction to the *Encyclopaedia*:

To the facts of psychical research, by the exercise of great care, I added, from books and periodicals, many strange accounts which seem to rest on good authority though, from the experimental viewpoint, wanting in evidential value. For only by so doing could I hope to illuminate the full domain of this coming science. (p. xxix)



As a consequence, Fodor provided us with a wide canvas that has proved to be very valuable in presenting the claims and ideas that characterized psychical research before the *Encyclopaedia* was published. This canvas is also useful in comparing psychical research, past and present. An impressionistic comparison of Fodor's work with the work presented in conventions of the Parapsychological Association, and research reported in publications such as the *Journal of Parapsychology* and the *Journal of the Society for Psychical Research*, shows that currently the experimental approach is more prominent than the study of cases and of the mediumship that predominated when the *Encyclopaedia* was published (which in many cases commented on by Fodor were purely observational and not always controlled). Today there is a tendency to focus on ESP, while there was more variety of phenomena before, including topics that are frequently neglected today but mentioned by Fodor such as apports, levitations, materializations, and xenoglossy. Currently statistics are frequently used to assess the existence of psychic phenomena and their relationship to other variables. My computer-assisted count of the words "statistical" and "statistics" in the *Encyclopaedia* showed five uses of the first word, and two of the second, and all of them referred to simple counts of cases or of features of phenomena.

Today, there is more interest and investigation of cases of reincarnation and near-death experiences than in previous years. Furthermore, regarding the social aspects related to the individuals involved in research, today there are more examples of university affiliations and scientific academic credentials than in the old days, suggesting more professionalization.

Oliver Lodge (1932) stated just before the *Encyclopaedia* was published that "enquiry has led us in many directions which at present are puzzling, because we have not yet the clue" (p. 74). We may not have the clue today in terms of actual explanations of psychic phenomena, but we have better evidence than we had when the *Encyclopaedia* was published, particularly in terms of ESP experiments.

Unfortunately, and as seen in the years covered by Fodor, the field still lacks acceptance by science at large. Worse than this, the phenomena are seen by some to be impossible facts the existence of which can be dismissed on the basis of current beliefs in physical and

psychological processes that are said to be enough to assure us that the data presented by parapsychologists are irrelevant (Reber & Alcock, 2020). This last comment illustrates the unfortunate practice of some scientists who neglect data in support of a claim, and instead follow their feelings and beliefs. This practice highlights the subjective aspects of both past and current science.<sup>16</sup> For writers like Reber and Alcock, the personal belief they espouse is resistant to empirical explorations of the topic, and does not take into account that “orthodoxy constantly changes its outlook, and the folly of one generation is liable to become the commonplace of another” (Lodge, 1932, p. 71; see also Braude, 2019).

In any case, the problem will not be solved by paying attention to a book that is now more than eight decades old. But the perspective this reference work gives us reminds us of the efforts that a relatively small and underfunded community has made in the past, and continue to make today, to expand the scope of science. Thus, in charting the past, the *Encyclopaedia of Psychic Science* also helps us to obtain perspective today.

## ACKNOWLEDGMENTS

I wish to thank Nancy L. Zingrone and Michael Nahm for useful suggestions for the improvement of this paper. Massimo Biondi and Andreas Sommer provided me with useful information.

## NOTES

- <sup>1</sup> Other works similar in content were those compiled by Bosc (1891–1892) and Encausse (1892). Grässe (1843) listed many pre-nineteenth century books and pamphlets about animal magnetism, apparitions, demonology, divination, dowsing, dreams, lycanthropy, magic, miracles, and visions. Abbot (1864) compiled sources about the nature, origin, and destiny of the soul, which included a short section about Spiritualism (pp. 866–868).
- <sup>2</sup> See Crabtree (1988), Morgan (1950), Ravaldini et al. (n.d.), and Zorab (1957). A few examples of other relevant works are those of Anderson (2006), Goss (1979), and several of my short bibliographical essays (e.g., Alvarado 2010b, 2010c). Also useful are catalogs about the holdings of libraries (e.g., Besterman, 1927, Price, 1929). I have avoided here

the mention of useful non-psychic bibliographical tools such as the *Index Catalogue of the Library of the Surgeon-General's Office*, and the *Psychological Index*.

- <sup>3</sup> Some histories published before the *Encyclopaedia* also provide the interested student with much information (e.g., Tischner, 1924; Podmore, 1902). For a bibliography of later books and articles about the histories of psychical research and related matters see Alvarado (2019a, Appendix F).
- <sup>4</sup> The *Encyclopaedia* has been reprinted several times, such as the 1966 edition updated by Leslie Shepard (Fodor, 1966). An updated edition of Fodor's work has also been published together with Spence's (1920) encyclopedia (Melton, 2001). I should also mention encyclopedias that appeared after Fodor's, limiting my list to just a few, such as Berger and Berger (1991) and Dèttore's (1978) multi-volume work. Stein (1996) presented a skeptical approach, and Cavendish (1970) and Lara (1977) combined psychical research with occultism and other topics. The latter one, an eight-volume compilation, actually had little of interest regarding psychical research. For example, at least 90% of the entries of the third volume were about topics such as alchemy, dreams (non-psychic), Rosicrucians, secret sects, Templars, theosophy, and yoga. Perhaps the best of the modern works is the online *Psi Encyclopedia*, a project sponsored by the Society for Psychical Research that is still growing (McLuhan, n.d.; for comments about this important project, see Alvarado, 2019d).
- <sup>5</sup> On Flournoy's (1900) analyses, extended in an article (Flournoy, 1901), see Maraldi and Alvarado (2018).
- <sup>6</sup> Fodor published many short articles in *Light*. Some of those published the year he became part of the magazine's editorial staff (1933) were about precognition, luminous phenomena, apports, and invisibility (see, respectively, Fodor, 1933a, 1933b, 1933c, 1933d).
- <sup>7</sup> There were also many articles in magazines and journals such as *American Imago*, *International Journal of Parapsychology*, *Journal of Clinical Psychopathology*, *Modern Mystic*, *Prediction*, *Psychiatric Quarterly*, *Psychic Science*, and *Tomorrow* (Fodor, 1933e, 1936, 1937, 1942, 1945b, 1948, 1957, 1961).

- <sup>8</sup> Before this, Hereward Carrington had speculated about poltergeists as caused by a force projected by the human body, a process related to puberty and sexual development. “It would almost seem as though these energies, instead of taking their normal course, were somehow turned into another channel, and externalized beyond the limits of the body” (Carrington, 1922, p. 60).
- <sup>9</sup> Fodor did not refer to the above-mentioned publications in German in his *Encyclopaedia* entry about poltergeists. Psychoanalyst Alfred Winterstein (1926b) considered that some poltergeist phenomena resembled the productions of the unconscious mind in dreams and neurotic symptoms due to “their symbolic nature and other peculiarities that suggest the mechanisms of condensation and displacement” (p. 549), and that they were an attempt to dissipate a fixed idea (p. 551). In physician Albert Freiherr von Schrenck-Notzing’s (1928) opinion, poltergeists could take “the place of a neurosis” (p. 518) due to the presence of “unconscious drives in the hysterical psyche” (p. 519). For another author, nervous diseases physician Jan Simsa (1931), stone-throwing phenomena were related to conflicts caused by sexual dynamics, and were “alleviations of psychic tension, explosions of accumulated energy . . . expressions of the inner, unconscious, dreamlike and primitive mental activity” (p. 573). The journal also published general discussions about psychic phenomena and psychoanalysis (e.g., Kröner, 1926; Winterstein, 1930), including one about a haunting apparition (Sichler, 1927).
- <sup>10</sup> The treatises of other authors focused on more specific topics. These include August Bouché-Leclercq’s (1879–1882) four-volume *Histoire de la Divination dans l’Antiquité* and Aubin Gauthier’s *Histoire du Somnambulisme chez Tous les Peuples, sous les Noms Divers d’Extases, Songes, Oracles et Visions* (1842), a book that, in addition to magnetic somnambulism during the eighteenth and nineteenth centuries, covered ideas and events from antiquity and the Middle Ages about divination, dreams, ecstasy, possession, prophecy, and visions.
- <sup>11</sup> In a later book, Figuier (1871/1872) accepted that human beings survived bodily death and developed a pantheistic view of the universe.

- <sup>12</sup> Baraduc (1893) had reported before with an instrument he devised to detect the vital force that medical problems were reflected in the measurements he took. The idea that our exteriorized nervous force can reflect pathology was present in various occult literatures (e.g., Leadbeater, 1902), as well as in the mesmeric one (Alvarado, 2019b). Many instruments were used to detect forces in different ways before the appearance of the *Encyclopaedia* (Bonnamy, 1908; Carrington, n.d.). A common critique, and one applied to the movement of the sthenometer's needle (mentioned by Fodor), was the effect of heat, which caused some controversy (Joire, 1907, 1908; Stratton, 1907; Stratton & Phillips, 1906) because Joire believed he had controlled for this artifact.
- <sup>13</sup> On this exposure of fraud, see A. Wallace (1906).
- <sup>14</sup> The theoretical discourse of some spiritualists was very resistant to exposures of fraud. An example is the case of materialization medium C. E. Wood. In a séance held in England in 1882, a spirit appeared during a séance who was grabbed by a sitter and found to be the medium "with her dress off, and covered with muslin, part of which was secured" (Catling, 1882, p. 410). In later correspondence in *Light*, the medium, and several others, claimed her innocence using arguments common in the discussion of similar previous instances such as spirit-produced unconscious personation by the medium. It was also proposed that since a materialized form comes from the vital force of the medium it sometimes happens that the form that is held becomes the medium when she is transferred outside the mediumistic cabinet due to the shock of being held and to the supposition that most of the medium's vital force was already projected into the séance room to form a materialized figure (Wood et al., 1882). This last idea has been discussed by others as well (e.g., A. R. Wallace, 1882).
- <sup>15</sup> This reminds me of the precautions taken by Henry Olcott to keep medium Elizabeth J. Compton from leaving her chair. With the medium's permission, he wrote:

I removed her earrings, and seating her in the chair in the cabinet, fastened her in it by passing some "No. 50" sewing thread

through the perforations in her ears, and sealing the ends to the back of the chair, with sealing-wax, which I stamped with my private signet. I then fastened the chair to the floor, with thread and wax in a secure manner. Observe . . . how impossible it was for her to move an inch from her place: she could not have been more firmly fixed to her seat, if irons had been passed through her flesh, and riveted in the wood. A slight pull would suffice to snap the frail thread, and betray her attempt to cheat. (Olcott, 1875, p. 484)

- <sup>16</sup> Reber and Alcock's (2020) controversial evaluation of parapsychology may be seen as an extreme example of the obvious fact, supported by modern historical work, that evaluations in science are not always solely dependent on data. Scientific work, and analyses, are affected by social and cultural aspects that contribute in various ways to the production or rejection of knowledge. This includes religious, philosophical, and political beliefs, not to mention commercial interests and personal agendas of different sorts. For one example, among many, see Morus' (2005) study of physics.

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## HISTORICAL PERSPECTIVE

# Astrology and Science: A Precarious Relationship Part 1: Historical Review of German Astrology in the 20th Century and Current Developments

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**Abstract**—This two-part essay illuminates the difficult relationship between astrology and science from different perspectives. While the first part provides a historical review of developments in the 20th century in German-speaking countries, the second part (also in this issue) concerns theoretical and methodological considerations for empirical investigations of the validity of astrology. During the 20th century, astrology in the German-speaking world was influenced by a few people who pursued a special quest for connectivity with scientific findings and models as well as a natural philosophical foundation. The astrologer Thomas Ring developed an elaborate ‘astrological anthropology’, the “revised astrology”, which claimed to be compatible with other scientific disciplines like biology and psychology. Hans Bender, who was willing to carry out experiments in order to test astrology, became an interested counterpart to Ring. This openness to scientific scrutiny combined with the desire to replace old concepts based on magical–analogical thinking with concepts more compatible with scientific models, met with the criticism of several astrologers in the 1990s. The critics found the psychological–scientific aspiration represented as too restrictive. This led, with general sociocultural developments, to a change in the “astrology scene,” which is described, among other things, on the basis of some expert interviews at the end of this first part article.

**Keywords:** astrology; experiment; magical thinking; revised astrology; science; Thomas Ring; psychologization of astrology

As it is generally known, astrology was one of the recognized academic disciplines until the 17th century. Astronomy and astrology were not yet separate; nevertheless, if one could speak of a changeable history at that time, then the reasons for it lay not in challenges from scientific, but from religious concerns (Campion, 2009; Knappich & Thiel, 1988, p. 102 ff.; Stuckrad, 2003). This changed when astrology entered a crisis in the second half of the 17th century that, although it had many causes, ultimately led to the “differentiation of branches of knowledge” (Stuckrad, 2003, p. 265) and the sustainable exclusion of astrology from the canon of sciences. Although this did not lead to the “extinction” of this “science,” it was more or less pushed into the private sphere or occult underground as a serious practice. One exception was the situation in England, where public interest in astrology remained consistently high (Curry, 1989; Stuckrad, 2003, pp. 270–274). This unbroken line of tradition in England finally helped astrology to flourish again in France and Germany toward the end of the 19th century by reimporting it via theosophy.

Meanwhile, these known facts can be read in corresponding historical representations (Campion, 2008, 2009; Knappich & Thiel, 1988; Stuckrad, 2003; Willis & Curry, 2004, pp. 65–76). One means of adapting astrology to modern thinking was its psychologization, influenced by the Age of Enlightenment. In a way, this saved astrology through the 20th century, comparable to the situation of Western ritual magic (cf. Hanegraaff, 2006).<sup>1</sup> An essential instrument was depth psychology and especially the theory of archetypes by Carl Gustav Jung. In England and the USA, such a strongly psychologically dominated interpretation of astrology developed directly from the theosophical and New Age approaches as represented by the prominent astrologers Alan Leo and Dane Rudhyar (Campion, 2012, pp. 51–69). As a result, esoteric concern among these main protagonists determined the path to psychological astrology. In the German-speaking countries astrology developed differently in the 20th century. Special efforts were made to reintegrate astrology into the academic sciences, which strongly influenced the situation until the early 1990s.

In this historical review, this development and changes since the 1990s will first be briefly portrayed and supplemented by a status determination from an emic point of view based on statements by

professional astrologers. Today a central point of the precarious relationship between astrology and science is mutual misunderstanding compounded by a lack of knowledge and differentiation from both astrologers and scientists. This leads to misjudgment. In the second article that follows this one, “Part 2: Considerations of Empirical Investigations on the Validity of Astrology,” I will present and try to clarify these problems.

## ASTROLOGY IN GERMAN-SPEAKING COUNTRIES IN THE 20<sup>TH</sup> CENTURY

*Astrology will in the coming years become the acute scientific dispute . . .*

—Letter from Thomas Ring to Hannah Höch, dated October 4, 1927<sup>2</sup>

### **Pluralism and the Heyday during the Weimar Period**

At the beginning of the 20th century, especially during the Weimar period, a brief phase of ideological pluralism prevailed in Germany, allowing people to follow their interests in alternative interpretations of the world. Einstein’s theory of relativity, for example, created a furor and turned understanding of the physical laws of nature upside down.<sup>3</sup> Astrology benefited from this development as did several esoteric movements.<sup>4</sup> After its reimport from England, several new “schools” of astrology had formed in the German-speaking area, and astrological societies and journals were established. One can speak of a flourishing period of sophisticated astrology in Germany (Howe, 1984, pp. 78–103; v. Stuckrad, 2003, pp. 321–329; Knappich & Thiel, 1988, pp. 307–329, 350–355). The ideological pluralism could also be found in astrology: There coexisted competing approaches and concepts side by side, representing various degrees of esotericism, traditional fatalistic orientation, and also orientation toward psychological and scientific interpretations. Even Karl Brandler-Pracht (1864–1939), an astrologer strongly influenced by theosophical ideas and interests in spiritualism (Howe, 1984, pp. 81–84; Schellinger, 2009; v. Stuckrad, 2003, pp. 322–323)<sup>5</sup>, promoted a scientific and psychological approach to astrology.<sup>6</sup> German astrologer A. M. Grimm (1892–1962), who organized the first European Astrologers’ Congress in Munich in 1922, “contributed a wonderful piece of half-baked nonsense on ‘Astrology and Einstein’s

Theory of Relativity” (Howe, 1984, p. 96). Howe writes about the period of time between the two World Wars: “The German preoccupation with astrology at that time was unparalleled in any other European country or the U.S.A.” (ibid., p. 7). The idea of a “psychological astrology” was first mentioned by German astrologers (ibid., p. 98) who referred to Carl Jung’s analytical psychology. However, a second reference to psychology was the *Charakterologie*, which deals with the issue of psychological types (ibid., p. 99). Both can be seen as early approaches to personality psychology. The attempts to bring astrology and science closer together could certainly be understood in the context of an “anti-disenchanting trend” (Asprem, 2014a) in parts of early 20th-century science, that relying above all on insights from quantum physics questioned a materialistic, mechanistic, and reductionist worldview represented by “classical” science. Many researchers interpreted the new developments in science as an approximation to *Natural Theology*, which counteracts the “disenchantment of the world” (*sensu* Max Weber); among them were prominent scientists such as Nils Bohr, Werner Heisenberg, Wolfgang Pauli, Hans Driesch, William James, and William McDougall (Asprem, 2014a, 2014b).

The orientation of astrology toward psychological and scientific interpretations became a prominent feature of its further development after the Second World War.<sup>7</sup> A number of well-known astrologers from this period could be mentioned<sup>8</sup> but, with regard to later development, I will introduce only the names of three: the physician and astrologer Herbert Freiherr von Klöckler (1896–1950), the psychoanalyst and astrologer Fritz Riemann (1902–1979), and the artist, author, and astrologer Thomas Ring (1892–1983). These three astrologers had an extraordinary influence on postwar astrology in Germany up until the 1990s—at least as far as the specific approach mentioned above is concerned.

### **Herbert Freiherr von Klöckler**

Herbert Freiherr von Klöckler (Figure 1) was closely oriented toward psychology and the sciences, and aimed for an empirical (statistical) investigation of astrology. He wanted to free astrology from its medieval “ballast”, i.e. concepts that are difficult to integrate into a modern worldview, and create a version more compatible with modern

times (Howe, 1984, p. 100). He rejected deterministic and fatalistic ideas of astrology, as well as the concept of a static and fixed character of a person. Moreover, he related astrology strongly to astronomical facts. Therefore, he refused astrological prognostic methods that refer to symbolic relationships, as is the case with the various progression methods whereby, for example and to mention one of the most common procedures, the formula “one day equals one year” is used.<sup>9</sup> In 1926, he published his book *Astrologie als Erfahrungswissenschaft* [Astrology as empirical science], including an introductory note by the famous biologist Hans Driesch, and in 1929 his *Kursus der Astrologie* [Course of astrology], published in three volumes widely used among astrologers (Klöckler, 1991). Klöckler’s emphasis on experience is mainly directed against skeptical objections that want to dismiss astrology uninspected as the result of superstitious and outdated thinking. He writes in the introduction of *Astrologie als Erfahrungswissenschaft*:



**Figure 1. Herbert Freiherr von Klöckler.**  
Source: H. Freiherr von Klöckler, *Kursus der Astrologie, Band II*, Astra-Verlag, 1952, frontispiece.

One may now also regard astrology, the belief in the stars, as the result of a purely intellectual or, as we would like to express ourselves today, a speculative achievement, *but even then* one is obliged to test this supposed speculation empirically before it is finally rejected. [...] In any case, the astrological assertion occurs *everywhere* and *at all times* with a serious claim to experience that has been had and is *always* possible again, and this fact compels the objective researcher to verify, reject or confirm it by means of experience. A priori, not the least can be said about the alleged facts. This is also the reason why a rejection of astrological claims cannot be justified

by purely historical motives, as some people would like. (Klöckler, 1989, p. 3; emphasis in the original; translation by G. M.)

However, he also turns against the “rampant charlatanism” (“grassierende Scharlatanerie”) in astrology that makes it easy for the critics to dismiss it in general:

The botch-up in the field of astrology is mainly due to the fact that completely uneducated people give their clients copies and reproduced representations from textbooks based on the position of the sun. ‘Better’ botchers still take into account the position of the other planets on the day of birth, but in this case they also give quite stereotypical statements. (ibid., p. 368; translation by G. M.)

Klöckler advocates an open-ended empirically based approach to astrology, which sees the achievements of the “ancestors” critically, but does not reject them as superstitious or fantastic from the outset, just because some of their scientific assumptions have proven to be wrong.

### **Fritz Riemann**

Fritz Riemann (Figure 2) was a disciple of Freiherr von Klöckler. However, he became mainly known as a psychoanalyst and founder of an “Institut für psychologische Forschung und Psychotherapie” [Institute for Psychological Research and Psychotherapy, later renamed Academy of Psychoanalysis and Psychotherapy]. He was also an honorary member of the American Academy of Psychoanalysis in New York. He wrote an influential book on anxiety, *Grundformen der Angst* (1961), published in 1975 as a revised and extended edition.<sup>10</sup> Although it is written from a depth-psychology perspective, astrologically experienced readers can easily recognize that Riemann’s typology of anxiety is guided by astrological concepts of the four elements, and of the planet Saturn. In his later years, he openly confessed to practicing astrology.<sup>11</sup> In the television programme *Astrologie—Tatsachen und Meinungen* [Astrology—Facts and opinions], a production of a German public television broadcaster from 1958, he emphasized the usefulness of astrology in the context of psychotherapeutic work. The astrological chart helped him to unravel the overlay of disposition and environmental factors of a patient:

For the recognition of this actual being [the being as it is before environmental influences have an effect —G. M.], astrology offers itself as a symbol in the horoscope, as it were, of how a person is thought or designed before the environment could have any influence, inhibition or distortion on him. In any case, for me the horoscope and the insight into the horoscopic connections means a protection against the danger that we, as therapists, can all be subject to, of perhaps misjudging a person, of seeing him wrong, of perhaps unconsciously pushing him in a direction of his development that does not belong to his actual nature.<sup>22</sup>



**Figure 2. Fritz Riemann.** Source: L. Pongratz (Ed.), *Psychotherapien in Selbstdarstellungen*, Verlag Hans Huber, 1973, plate after p. 352.

In 1972, he wrote an article for the *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* with the title “Über die Praxis astrologischer Beratung” [On the practice of astrological counseling] (Riemann, 1972). In the same year he gave a lecture on the occasion of the IV International Forum for Psychoanalysis in New York entitled “Psychoanalyse und Astrologie” [Psychoanalysis and astrology], in which he compared the psychoanalytic process of making conscious unconscious content (“Wo Es war, soll Ich werden” [Where id is, there shall ego be]—Freud, 1933, p. 111) with the disclosure of ‘the still earlier cosmic environmental imprint’ (Riemann, 1977, p. 258). In both cases, psychoanalysis and astrology, the “idea of very early imprints that are unconscious (or have become) and have fateful effects” (ibid.) forms the basic concept. Finally, in 1976, three years before his death,

he published a book entitled *Lebenshilfe Astrologie—Gedanken und Erfahrungen* [Life assistance astrology—Thoughts and experiences]. With this book he wanted to situate serious astrology,<sup>33</sup> which explicitly distinguishes itself from magical and fatalistic ideas, as valuable help in a professional therapeutic context.

### Thomas Ring

The most important person with regard to so-called revised astrology was the artist, author, and astrologer Thomas Ring (Figure 3). Rather skeptical at first, he developed a complex form of astrological anthropology, according to the title of his main work in four volumes, *Astrologische Menschenkunde*. He coined the term “Revidierte Astrologie” (revised astrology) (Ring, 1956, 1959, 1969, 1972, 1973) in order to distinguish it from the mechanistic and fatalistic “classical astrology.” Ring referred heavily to a psychological approach to the conception of man. Philosophical anthropology as well as scientific findings in general also appealed to him.

### Thomas Ring’s Astrological Anthropology

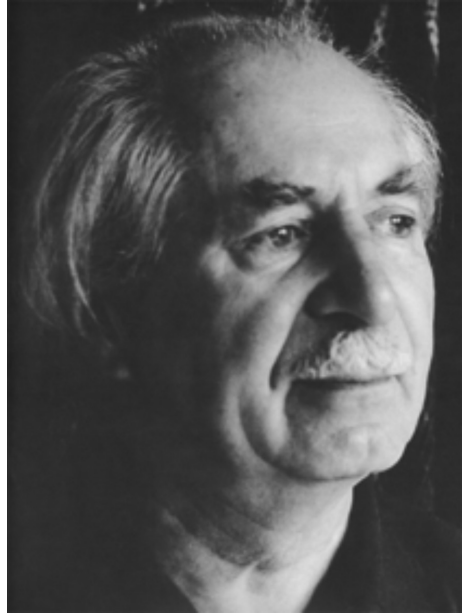
The main question of Ring’s approach concerns the relation of the human being to his Welthintergrund [background of his world, or cosmic embedding] (Ring, 1975, p. 9). According to his model, the stars, or heavenly bodies, do not affect human beings directly by way of a physical force. The connection of the “above” with the “below” is

solely the *movement*, physically the celestial mechanics, biologically and psychologically the life movement. Thus, the problem is reduced to whether, and to what extent, the changeable, volatile, and convertible can be implemented into the uniformly recurring. This is conceivable as the rhythmic integration of vital processes into the regular recurrence of configurations [“Konstellationen”] of the solar system. (Ring, 1975, p. 13; emphasis in original; translation by G. M.)

During pregnancy, the developing fetus becomes increasingly attuned to the astronomic environment and its rhythmic structure including the earth. Therefore, one could see the human organism as a macroscopically embedded system oscillating with an individual



constant basic rhythm adjusted to cosmic norms. The (future) mother chooses instinctively, and unconsciously, the “appropriate” point in time for conception. The delivery is the termination of the pregnancy period and, therewith, of the adjustment period of a new human organism before it becomes an autonomously functioning organism. Thus, the chart can be regarded as kind of a “discharge paper” (ibid., p. 24), displaying the result of the individual attunement period to cosmic oscillation patterns. The horoscope itself has to be allegorically interpreted.



**Figure 3. Thomas Ring.** Source: T. Ring, *Lebenszeugnisse*, Thomas-Ring-Stiftung, 1982, p. 10.

The link between external, cosmological structures, and the internal constitution of a human being is not causal but correlative, a symbolic analogy of the *Bildekräfte* (forming powers) or *Wesenskräfte* (elemental forces) in human beings themselves (ibid., pp. 14–15). The *Bildekräfte* are the basis of all organisms, i.e. every living organism is subject to these forces (or laws) (cf. Francé, 1921). They are perceived in the form of mythological figures or dream images. The *Wesenskräfte* are structurally ordered at the time of birth forming an individual pattern reflected by the cosmic constellations at this point in time.

In Ring’s model of astrological anthropology, astrology adopts a position between biology and psychology. Accordingly, human individual behavior is determined by the genotype (genetic makeup), cosmotype (“cosmic” makeup), and phenotype, resulting from genotype, cosmotype, and environmental factors. Table 1, based on his astrological texts,<sup>14</sup> juxtaposes these three aspects.

Ring can be characterized as a very sophisticated and analytical astrologer. He distinguishes accurately, and explicitly, between the

levels of astrological signs, planets, and houses, and he does not equate, for example, “sun position in Aquarius,” “Uranus in conjunction with the sun,” “ascendant in Aquarius,” and “Uranus in conjunction with ascendant,”<sup>15</sup> as often can be found with other astrologers and astrological textbooks of 20th-century astrology. Although there is a kind of family likeness, to use a term by Wittgenstein, the mentioned

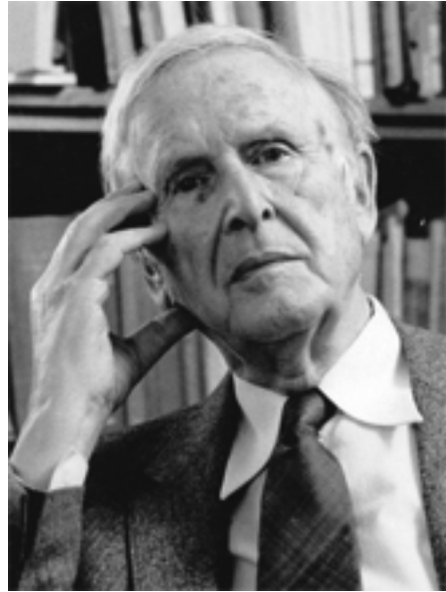
**TABLE 1**  
**Genotype, Cosmotype, and Phenotype According to Ring’s Model**

Genotype	Cosmotype	Phenotype
genetic constitution	“transformer”	environment
isolated heredity traits	hereditary structure	developed traits, habits, interests, behavior
	“essence”	“existence”
	structural constraint	self-determining factor
	principle	concretum
	developmental tendencies	developments / events
	astrology	psychotherapy

constellations concern different things. According to such an analytical approach, the planet answers the “which”-question (which vital force?), whereas the sign answers the “how”-question (how, or with which dynamic, is it likely to manifest?), and the house answers the “where”-question (where, i.e. in which sphere of life, is it likely to come particularly to the foreground?). Such an analytical distinction presents a complex astrological interpretation that is logically more consistent than the many simplified astrological approaches of the last century, especially against the background of his quest for a scientifically compatible model of astrology.

Like Klöckler, Ring also defended astrology against three sides: against outdated and uncritically adopted fatalistic assumptions of classical astrology, against uncritical skeptical rejections of astrology out of arrogance and prejudice, and against uncritically simplified

astrological beliefs by naïve occult believers. The latter is reflected in his book title *Astrologie ohne Aberglauben* [Astrology without superstition] (1972). He compares the situation of astrology with that of parapsychology, which is also hindered and threatened by ideologized and unscientific skepticism and uncritical paranormal believers. He considered it a problem that astrology “returned in the wake of the occult” leading to “a misleading ideological packaging of traditional ideas” (1972, p. 110; translation by G. M.). Furthermore, “the



**Figure 4. Hans Bender.** Photo credit: Archive of the IGPP.

impression was created that one was not at the beginning of new research, but before the sacred, finally formulated” (ibid.).

Ring’s closeness to parapsychological research was established with his collaboration with the psychologist and founder of the Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP), Hans Bender (1907–1991) (Figure 4), who became the leading figure in parapsychological research from the 1940s until his death in 1991 (see below, and at the beginning of the second article, following this one). The approach of the revised astrology by Thomas Ring is in line with the approach of parapsychological research in its distance from primitive occultism. The above-mentioned television program *Astrologie—Tatsachen und Meinungen* (1958) provides an excellent picture of the problematic situation. Astrologer Ring, psychotherapist Riemann, and parapsychologist Bender try to demonstrate the value of a modern, non-simplifying, astrological practice, while philosopher and sociologist Theodor W. Adorno (1903–1969) speaks about astrology being nothing more than a question of belief and simple (secondary) superstition.<sup>16</sup>

This short description of the main characteristics of Ring's approach to astrology may illustrate his committed attempt to reconnect with academic disciplines. It may also make understandable the attractiveness it had for many scientists and psychologists. Another important appeal was Ring's fascinating personality. Not by chance, he impressed the well-known German physicist and philosopher Carl Friedrich von Weizsäcker, who then concerned himself with chart-reading for a certain period of time.<sup>17</sup> Additionally, Hans Bender (Figure 4) assisted Ring by appointing him director of his "Grenzwissenschaftliche Institut" at Strasbourg University (Hausmann, 2006, p. 109f., 2013; Skiebe, 1998, p. 165). Ring had been transferred to a punishment unit, a "death squad," in 1943 by the Nazi regime during World War II.<sup>18</sup> The collaboration between Bender and Ring continued after the war.<sup>19</sup> Scientific investigations into astrological issues remained a research topic at the IGPP until Hans Bender's death.

### THE POSTWAR PERIOD UNTIL THE 1990s

During the postwar period, an emphasis on psychological approaches and an aim for scientific-empirical evaluation dominated German astrology. This emphasis in astrology brought on by pre-war developments in the field re-emerged following the Nazi regime persecutions of astrologers, and a period of disruption to the astrological scene in Germany (Howe, 1984; Schubert-Weller, 1988a, 1988b). Both psychologization and the scientific approach were propelled by the collaboration of the psychologist and parapsychologist, Hans Bender, with Thomas Ring and other astrologers, including Walter Böer (1914–2007) in particular. Bender, who carried out a first astrological experiment with Karl Ernst Krafft (1900–1945) as early as 1937 at Bonn University (Howe, 1984, p. 154) succeeded with tests with Ring in 1944–45 at Strasbourg University (Howe, 1967, p. 244, 1995),<sup>20</sup> conducted a scientific study in the 1950s (1952–1954) on the "Investigation of unaccredited practices of interpretation and counseling"—a paraphrase of astrological counseling practice—that was partly funded by the DFG (German Research Foundation).<sup>21</sup> In several test series, astrologers were asked to prepare written astrological reports, which were then checked for consistency by psychological experts, or the astrologers were shown psychological reports to which they were asked to assign the horoscopes

belonging to them. In sum, the astrologers—178 were involved in total—did not notably perform; although a significant correlation could be found between astrological and psychological assessments. Still, a small set of astrologers, including Böer and Ring (Figure 5), stood out significantly from the group (Werthmann, 1971).<sup>22</sup> Böer had been chosen as an astrological expert in several other experiments and had cooperated with IGPP research projects up until the late 1980s (e.g., Böer et al., 1986).<sup>23</sup>



**Figure 5.** Astrologers Thomas Ring (2nd from left) and Walter Böer (right) with two IGPP staff members at IGPP in the early 1980s. Photo credit: IGPP Archive.

Carl Jung, who was also in contact with Bender, carried out a comprehensive study on astrological synastry in the early 1950s with the horoscopes of 483 married couples, and an extensive statistical analysis (Jung, 1957/1958).<sup>24</sup> In 1968, psychologist Hans-Volker Werthmann finished a dissertation on a test of the validity of astrological horoscope interpretations in comparison with other psychodiagnostic methods (Werthmann, 1968, 1971, 1972, 1973). The German *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* [ZPGP—Journal of Parapsychology and Frontier Areas of Psychology], founded by Bender in 1957, became a main platform for publishing scientific articles on

astrology. Even the French researcher Michel Gauquelin, who had been conducting important statistical investigations into astrology since the early 1950s and had established his approach of Neo-Astrology (e.g., Gauquelin, 1991), corresponded with Bender and the IGPP, and published several of his articles in that scientific journal. In total, 56 scientific papers on astrological issues were published in the ZPGP between 1957 and 1996. They deal with various (often exploratory) experiments as well as replications and variations of Gauquelin's research (Ertel, 1986, 1992a, 1992b, 1993, 1995; Müller, 1986; Müller & Menzer, 1993). In summary, the experiments at the IGPP provided mixed results—interesting enough to maintain this kind of research for several decades, but too unclear to convince skeptics.

Furthermore, esoteric or technically oriented, fatalistic astrological approaches (e.g., the so-called “Hamburger Schule” [Hamburg School]) also could be found in this period in the German-speaking world, but they remained largely overshadowed, or did not have much of an impact on the further development of astrology, at least in Germany in the second half of the 20th century.<sup>25</sup>

Another culmination of this postwar development in Germany occurred in the 1980s, when a young psychologist and former staff member of the IGPP, Peter Niehenke, became president of the “Deutscher Astrologenverband” DAV [German Astrological Association] for a period of ten years (1981–1991). He became an important link between the strongly scientific approaches to astrology, represented by the research initiated and promoted by Bender and the IGPP, and the astrological community lacking a scientific background. In this respect, he can be described as a great popularizer of psychological and scientific astrology. His main objectives were to give astrology a new and modern face, and to release it from the sphere of backroom meetings in station restaurants (personal conversation). During this time, Niehenke wrote his dissertation *Kritische Astrologie* [Critical astrology] (1987) on a comprehensive questionnaire-based study of the correlation between horoscope factors and psychological variables (personality traits)—the first dissertation on an astrological subject in Germany based on empirical data of this kind. His psychological approach was in line, to a certain degree, with similar developments in the USA and Great Britain propelled by astrologers such as Liz

Greene, Dane Rudhyar, Stephen Arroyo, and others. During his term of presidency, the number of members of the association, which had been about 100 in 1950, increased up to nearly 1,000. He initiated annual conventions as well as founding training centers and a research center associated with the DAV. In order to maintain a high standard of quality, such training centers, called “Ausbildungszentren des Deutschen Astrologenverbandes”, have to meet several criteria to obtain approval by the DAV.<sup>26</sup>

In 1983, a *Grundsatzpapier astrologischer Vereinigungen* [statement of principles of astrological associations] was published that was signed by the presidents of the four biggest German astrological associations (cf. Wunder & Voltmer, 2007, pp. 12–14). In 1984, the president of the Schweizer Astrologen-Bund, Bruno Huber, also added his signature. This policy paper bore the hallmarks of Niehenke (ibid., pp. 14–16), who was largely influenced by the astrological anthropology of Thomas Ring as well as the cleared-out and empirically oriented astrology of Freiherr von Klöckler and the depth psychological approach of Riemann. It was aimed at a clear demarcation of seriously practiced, psychologically oriented astrology from yellow-press astrology, but also from strongly deterministic approaches.<sup>27</sup> Niehenke pursued two goals with the policy paper: He wanted to enable a concerted action against the strong pressure from skeptics with the statement of principles paper containing the lowest common denominator of the different astrologer associations (“I needed this paper as ‘weapon’”; ibid., p. 16). He also wanted to facilitate expert-policy steps toward a professionalization of astrological counseling activities. These goals were regarded by the participating associations as important enough that they were willing to swallow some rather bitter pills for them.<sup>28</sup>

### THE SITUATION FROM THE 1990s ONWARD

Several developments occurred during the 1990s that had, and still have, great impact on the astrological scene and practice. These developments are largely global in nature. For this reason, the points in the following list are not specific to Germany, but apply to almost all modern societies. But they are important for understanding the further development of the astrological scene in the German-speaking world—in contrast to the situation before the 1990s. The characteristic

path for more than half of a century thus was increasingly left:

- Esoteric beliefs and practices formerly mainly part of the subculture enter mainstream society. Almost every magazine acquired its own esoteric corner presenting not only sun sign astrology columns but much more extensive articles on yoga, shamanic healing, etc.—practices that are connected with the labels “New Age” and “esoteric scene” (for Germany, cf. Mayer 2003, 2004).
- The growing use of commercial broadcast as well as the commercialization of the Internet produced increasing competitive pressure on ‘classic’ media (public service television, print media, etc.), and provided alternative platforms for astrologers.
- The Internet and television programs such as *Astro TV* created a new form of astrological practice between simple sun sign horoscopes in magazines and sophisticated astrological counseling based on serious training. These new services, which can be assigned to the entertainment industry (cf. Campion, 2012, pp. 132–33), encompass a broad audience and might strongly influence the public image of astrology. As the audience of these programs does not usually differentiate between astrology, reading the cards, and scrying, the critics often do not.
- The rapid spread of computer technology facilitated the work of astrologers enormously (Wunder, 2005, p. 292). This made it possible for untrained people to print their astrological charts and to describe them rudimentarily with interpretation text modules. For trained astrologers, the work with new astrological elements has become much easier.
- In the astrological scene, people who advocated for approaches other than psychological, such as esoteric astrology, classical astrology, or horary astrology, succeeded in reorienting them as equivalent to the revised psychological astrology (see the expert interviews below).
- One of the foundations for this development was an increasing interest from historians in the Western astrological tradition as part of Western esoteric traditions. For example, *Project*



*Hindsight*, a translation project founded as part of this tradition, in 1993 operated for the retrieval of historic astrological texts. Also important was the founding of the *Sophia Centre for the Study of Cosmology in Culture* at Bath Spa University in 2002 (now at The University of Wales Trinity Saint David, Lampeter), where an MA degree in Cultural Astronomy and Astrology (York, 2003) can be obtained.

- Due to the near complete failure of attempts to provide scientific evidence of astrology during the second half of the 20<sup>th</sup> century, pursuits in a scientifically guided approach to astrology decreased strongly.<sup>29</sup>

The presidents of the DAV who succeeded Peter Niehenke addressed different main topics. However, two themes can be identified: (1) an emphasis on astrology as a profession, and (2) attempts to accept multiple astrological approaches or schools, such as the “Hamburger Schule”, which affected the exclusiveness of the scientifically and the psychologically oriented attitudes. The first resulted in periodic hearings on professional policies, and, after many attempts, one training center succeeded in that its astrological training was approved by job centers and pension funds.<sup>30</sup> The second resulted in a reformulation of the statement of principles between 2011 and 2013 that has now been adapted to cover a larger range of astrological approaches, for example horary astrology. It is significantly shorter, and less precise, than the first version.<sup>31</sup> Its most important adjustment concerns the issues of forecasting and how astrology might be scientifically evaluated. Thus, not included in the new version are the statements “Astrological forecasting is based on the interpretation of the changes in the astronomic structure caused by the course of the celestial bodies” (part of the former thesis 2), and “The existence of the mentioned correlation is a reality that is basically accessible to empirical-scientific evaluation (. . .)” (part of the former thesis 3).

### **A Decline of Interest in Astrology?**

The debate about what should be included in the spectrum of serious astrology peaked. According to Holger Faß, the editor of the astrology journal *Meridian*, this was one of the reasons for a significant decrease

in the number of DAV members from about 1,100 in the late 1990s to currently about 600.<sup>32</sup> It is difficult to assess whether the decline in membership indicates a general decline in interest in astrology, which would be a social trend. Further data from other sources seem at first glance to indicate similar results: According to the statement of the director of a prominent, and international, provider of computer-generated astrological horoscopes (*Astrodienst*), astrology reached its highest point in the early 1990s and is now in decline. Requests from Germany and Switzerland have dropped by 25% to 35% since that peak.<sup>33</sup> The same applies to providers of astrological training courses. The interest of younger people in astrology looks much lower than three decades ago.<sup>34</sup> Not to mention the number of subscriptions to the largest German astrology magazine *Meridian* has declined from 3,000 at its highest count to about 2,300 today;<sup>35</sup> and the main publisher of astrology books in Germany notes that bookstore owners with their own corner for astrological books during the 1970s to the 1990s do not have such books on offer anymore. Direct sales have now completely disappeared.<sup>36</sup> The demand for ephemeris books, a basic tool for astrologers, has largely decreased. However, the available computer software makes printed ephemerides largely superfluous. And online booksellers such as Amazon have a significant impact on direct sales. In any event, print media are generally in decline. Further indicators are also difficult to interpret. “Google Trends,” for example, show a steady decline in the popularity of the term “Astrologie” in relation to other terms such as “Tarot” and “Kartenlegen” [cartomancy, divination with cards] since 2004, but the data lacks absolute values of the number of searches.<sup>37</sup>

One considerable problem with the assessment of genuine interest in astrological counseling is that information technology has significantly changed the way people search for information. To make a point, a few years ago the administration office of the DAV had received many requests for lists of addresses of serious astrologers. The requests have now almost disappeared because most information is immediately available on the Internet. This easy access makes it difficult to distinguish between serious searches for information and surfing through websites out of pure curiosity. Furthermore, the decline of consultation requests could partly be a result of astrological

services being offered on the Internet (e.g., computerized horoscope analyses and interpretations for free).<sup>38</sup> Thus, all of the assessments and statements have to be treated with caution.<sup>39</sup>

### **Assessments by Astrologers and Other Experts in the Field**

From 2010 to 2012, the German astrological magazine *Meridian* published the opinions of several prominent German astrologers regarding the current situation and the future of astrology.<sup>40</sup> These impressions, combined with information from 11 expert interviews I conducted in 2016,<sup>41</sup> form the basis of the following depiction of the current situation in the astrological scene. The depiction has the main purpose of sharpening the picture of the situation before 1990 by way of contrast and comparison. The interviews were conducted with the following key question: What has changed in the astrology scene over the last decades? The changes should refer to different areas: the situation in astrological training centers, astrological practice, and the needs of the clientele. The aim of the comparison determined the selection of the interview partners. They had to be involved in the field long enough to take positions (e.g., in astrological associations) that provide a good overview and insight into the astrological scene. Some of them are still following the psychological approach described above that characterized the situation before 1990; others are more open to the new developments, and even significantly involved in them.<sup>42</sup> One interviewed person, Alois Treindl, founded *Astrodienst*, a company that offers computer-generated horoscope interpretation; Reinhardt Stiehle runs the main publishing houses for astrological books in Germany (*Chiron* and *astronova*), and Martin Garms is responsible for the production of the astrological magazine *Meridian*. This sheds light on the situation from various aspects. The heterogeneity of the interviewed persons produced a significant variety of assessments. However, a few main features become evident, which I will summarize in the following.

Firstly, a new ideological pluralism has become established for different approaches to astrology, comparable to the first quarter of the 20th century. The spectrum reaches from the view of astrology as an absolutely *esoteric way of wisdom* that has nothing to do with science, and the social everyday reality, right up to a constructivist interpretation of *astrology as a useful fiction*. According to this approach,

astrology is basically alterable and independent of an ontological reality of astronomical facts. It is seen as a human-made tool for organizing one's life (cf. Weidner, 2002). This pluralism is not only found among different astrologers but also within individual astrological practices. Several long-term astrologers with training in psychological astrology now combine it occasionally with elements of horary astrology. They try to integrate elements of traditional astrology into their practice in a non-dogmatic manner.

Secondly, a professional turning toward astrology can be found in two respects: Astrology has by now become an important topic of historiography and historical studies, together with astrologers adopting a utilitarian approach to astrology aiming for social acceptance of astrology as a consulting service comparable with psychological counseling. For this purpose, they create elaborate curricula and examinations for ambitious training of astrologers, and engage in issues of professional policy in order to distinguish their approach from the purely commercial offerings.

Finally, astrology that is understood as a profession from which one can make a living, tends to pursue a connection to psychology and have a certain interest in a scientific foundation; while astrology that is understood as an esoteric path to wisdom teachings is not strongly directed toward social acceptance, but sees itself in a particular role, and finds it easier to come to terms with a marginal position in society.

The statements of the astrologers vary considerably when it comes to the aims and needs of the clientele. This is not surprising because the individual approaches and appearances of astrologers fluctuate with their personalities and separate preferences. Thus, astrologers' specific clientele and assessments cannot be generalized. For instance, some say that a boost in young people looking for astrological advice took place, and the search for serious astrological counseling has increased during recent years, as has the general acceptance of astrology as a valuable tool. Others notice that for most clients, a deeper interest in astrology and astrological counseling does not begin until about the age of 40 years. Comparatively, many astrologers report that an increasing number of inquiries are from people looking for short and direct answers to definite yes-no questions. Others emphasize that there is little change, if any. The main areas of substantive help sought

from astrology professionals remain the same: love, profession, family. Some astrologers assess their clients as better-informed than in the past. More versed in the limits of interpretation of horoscopes, they are more cautious with predictive issues. Nevertheless, a general observation is that the use of astrology as a tool for psychological introspection and self-awareness is increasingly being replaced by the desire for concrete answers to questions of everyday problems. Only minimal attention is given to the philosophical background. A pragmatic attitude seems to dominate with the clientele, which is also reflected, for example, in contracts for astrological coaching of management teams of a major company, as one astrologer reported. Some astrologers report that this is caused by a pronounced consumer attitude of many clients. One considers it possible that the psychological approach to astrology is exhausted due to the vagueness of astrological statements, as well as the dense introduction of new astrological methods and elements leading to a large arbitrariness of interpretive approaches and “schools.” He says that, at some point, almost every astrologer has developed his or her own little method of interpreting horoscope charts. This appears somewhat exaggerated, of course, but a glance into astrological magazines displays a pronounced tendency to experiment with new astrological elements or ways of interpretation—maybe propelled by the wish to stand out from colleagues.

Concerning astrological education offered in DAV training centers, reports show a significant demand for seminars and courses during recent years. “The subscribers want to get comprehensive course material, want to see something professional for their money,” said a long-term provider of astrological training courses; and another stated that almost no beginners are subscribing to the training courses, but advanced autodidacts who are using information available on the Internet. From another point of view, those with positions skeptical of astrology are often unknown to the subscribers, maybe due to the highly selective gathering of information from respective communities on the Internet.<sup>43</sup> Training centers prepare well-educated astrologers year by year to make money; yet, the most they can do is supplement their main earnings. Few can act on their intention of making a living from astrology. Concurrently, business is going quite well for established and well-known astrologers.

A considerable change is also observed in technical *practice*:

Decreasing numbers of people find their way into the consulting rooms of astrologers. Telephone and video conference counseling has greatly increased. Most of the interviewed astrologers make a definite distinction between the clientele of serious astrologers and those responding to services offered on the Internet and commercial broadcasts. Such services address a form of personality structure that is in search of a more authoritarian style of counseling than is generally the case with people who consult an astrologer. Thus, the overlap between the two clienteles seems to be very small. However, concentrating on the astrologers, the transitions between these two fields are more fluid than some astrologers might wish. Some of them had worked, and are still working, for Internet portals such as *Questico*, mainly due to economic pressure. The clientele of commercial providers is mildly unsatisfactory for reputable astrologers because such people do not want to deal with their problems in depth, but only require concrete and short ad hoc answers to questions such as, "What will happen where and when?" Conversely, these commercial forms introduce astrology to a wider audience and sometimes bring new clients to astrologers. As one astrologer put it: "people are not as stupid as one might think. Critical individuals will quickly distance themselves from such cheesy interpretations and services. *Questico* improved the public awareness of astrology, which ultimately led to a significant growth in well-informed autodidacts."

In keeping with the above statements it is important to note that the interviewed people are prominent astrologers who have acquired a certain reputation by writing books and articles for astrological magazines. They are not representative of astrologers in the aggregate. Beginners may have different experiences with their clienteles.

### SUMMARIZING CONSIDERATIONS OF HISTORICAL DEVELOPMENT

In summary, it can be said that the development of astrology in Germany took a specific route during the 20th century insofar as it was characterized by an aim for compatibility with scientific findings and models as well as a natural philosophical foundation. Such efforts were not limited to the German-speaking world, of course, but the

unusual concentration and prioritization might be characteristic for the situation in Germany, and are due to the fruitful encounter of unusually committed and potent minds. In France, too, attempts were made to investigate astrology with statistical methods in the early 20<sup>th</sup> century, by Paul Choissard (e.g., in 1908, under his pseudonym Paul Flambart), and the groundbreaking research by Michel Gauquelin and Françoise Schneider-Gauquelin, which started in the 1950s, is well-known beyond scientifically oriented astrologers. Although the results obtained by the Gauquelins were significant and generated a scientific earthquake—one special case shows the prominent psychologists Hans Eysenck and David Nias changed their minds about astrology by starting to review the literature and perform experiments (Eysenck & Nias, 1982, p. x)—the Gauquelins' neo-astrological approach is a specific case and differs substantially from the other scientific approaches followed mainly by German astrologers and scientists.<sup>44</sup> In contrast to the view of, for example, Willis and Curry (2004, pp. 65–76), who differentiate between “scientific astrology” and “psychological astrology,” they tried to combine scientific approaches to psychology *and* astrology (by means of differential and personality psychology, etc.).

The foremost influential proponent was Thomas Ring, followed by Peter Niehenke, who expanded astrology with elements of systems theory. This led to several scientific experiments considering the correlation between astronomical structures and events and personality structures on earth, as well as the capacity of astrologers to match tasks and consulting situations. On the basis thereof, it resulted in a strongly, psychologically dominated interpretation of astrology, which, however, in the sense of Ring's astrological anthropology, was by no means limited to the psychological aspects. With regard to the latter, this was in line with what was happening in Great Britain and the USA. Regarding the latter, it differed from developments in Great Britain and the USA, where, as Campion (2012, pp. 51–69) points out, psychologization emerged directly from the theosophical and New Age approaches of Alan Leo and Dane Rudhyar and, thereby, the movement to psychological astrology was basically fueled by a different, particularly esoteric, aim. The astrologer Robert Hand complained that 20th-century astrology lacks a theoretical foundation and a clear, elaborate language (Hand, 2005).<sup>45</sup> This is not true with regard to German astrology; unfortunately,

the important works of several German astrologers of the 20th century were not translated into English, and consequently were not received in the English-speaking world.<sup>46</sup> The acceptance of an extensive range of astrological approaches in German astrological associations during the last decades, including a critical attitude toward the possibility of scientific evaluation of astrology, have largely put an end to the special situation in the German-speaking area. It seems that the rich treasury of works by the above-mentioned German astrologers such as von Klöckler and Thomas Ring is no longer an indispensable component of an astrologer's training in Germany, although the books are still, and easily, available (at low prices).<sup>47</sup> For many, reading the material by Ring is judged to be too complex, and the wording outdated. "Ring does not gain acceptance anymore. Nobody wants to read such a complex work," as the main publisher of astrology books in Germany, Reinhardt Stiehle, put it.<sup>48</sup>

The rise of a more deterministic, if not fatalistic, astrology certainly results from a tendency toward a pragmatically oriented approach in this practice. Questions about the "why" and "how," with the aim at a deeper (philosophical) understanding, have dropped into the background. The characteristic astrologer has changed during recent years due to the fact that it is no longer necessary to calculate the charts by hand. The Internet provides astrological calculations in conjunction with interpretation programs. Several astrologers orient their practices to the requests of a clientele that wants quick, short, and concrete ad hoc answers, and do so using methods of "classical" and horary astrology. The former president of the Astrological Lodge of London, Bernard Eccles, gave a lecture in 2015 painting a very culturally pessimistic picture of the future development of astrology which he sees as exposed to a great danger of simplification, a prognostic "black-and-white" astrology, delivering concrete yes-no answers via mobile phone applications without the need for thorough consideration (Eccles, 2015).<sup>49</sup> Eccles is by no means to be agreed with on all of his arguments and above all his conclusion. With his reference to new, network media-based forms of knowledge acquisition, coupled with the habituation of pervasive and direct access to information, he may have grasped one reason (out of several) for the aforementioned change in dealing with astrology in the sense of concrete problem-solving strategies.



In the second part, the article following this, the focus is on considerations of empirical investigations on the validity of astrology. A definitive clarification and useful concepts and practices are crucial issues for the assessment of empirical studies of astrology. A distinction will be made between the above–below theorem as the traditional basic assumption of astrology and possible psi phenomena that can occur in astrological counseling practice. Specific methodological problems of these approaches are addressed.

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### NOTES

- <sup>1</sup> Through psychologization it was possible to turn to “magical” thinking and acting in a symbolic way and to relate them to the inner psychic dynamic and not to the external world subject to the laws of physics. Thus, it did not blatantly conflict with the modern scientific worldview, and the criticism of superstitious behavior leads nowhere.
- <sup>2</sup> Quoted from Skiebe (1988, p. 148), translated by G. M. [author of this paper]. Hannah Höch (1898–1978) was a German artist. The astrologer and artist Thomas Ring (1892–1983) met her in 1914 in Berlin. They both were part of the artistic Dada movement (Skiebe, 1988, p. 54f.).
- <sup>3</sup> See Asprem (2014a, 2014b) for a comprehensive presentation of the intellectual history of science, religion, and “the occult” during this period.
- <sup>4</sup> Ellic Howe’s *Astrology & The Third Reich* (1984) gives a thorough overview of the development of astrology in Germany during the first half of the 20<sup>th</sup> century. See Treitel’s study (2004) on *fin-de-siècle* German occultism, as well as the later studies by Wolffram (2009) and Sommer (2013) on the formation of German psychical research. Henderson (2016) emphasizes the interest of Theosophists in contemporary science at this time with the example of the monthly German spiritualist periodical *Die Uebersinnliche Welt*.

- <sup>5</sup> See also [http://wiki.astro.com/astrowiki/de/Karl\\_Brandler-Pracht](http://wiki.astro.com/astrowiki/de/Karl_Brandler-Pracht)
- <sup>6</sup> In a handbook on astrological diagnosis and prognosis he wrote the following caveat: “Warning! The rules for interpretation presented here are based on old traditions and are therefore not yet sufficiently psychologically founded. The psychological foundation of these traditional sets of rules will be the task of future research” (Brandler-Pracht, 1938, p. 173, translation by G. M.).
- <sup>7</sup> Of course, it is problematic to speak of astrology in singular form and thus of “its development,” since there are very different forms of practice which cannot be lumped together. This is discussed in more detail in the article following this one.
- <sup>8</sup> The Swiss astrologer Karl Ernst Krafft (1900–1945), for example, conducted extensive statistical investigations of birth charts (see Howe, 1984, for a profound presentation of Krafft’s biography and political role during the Third Reich). Elsbeth Ebertin (1880–1944) and her son Reinhold Ebertin (1901–1988) established their own astrological “school,” named “cosmobiology” (or the Ebertin school). Alfred Witte (1878–1941) developed a new method of calculating and interpreting charts which was called the “Hamburger Schule,” and known as “Uranian Astrology” or the “Uranian System” in English-speaking countries.
- <sup>9</sup> Klöckler named these methods as “fictitious methods” because they do not refer to the relation between actual planetary motion and biographical development in a synchronous course of time, but rather relate different time scales to each other by means of the application of certain conversion keys. He called these direction keys “imperfect mathematical aids,” to which “the ancients,” due to the lack of reliable ephemeris, used to determine future transits as aids to prognosis (Klöckler, 1989, p. 153).
- <sup>10</sup> An English translation was published in 2009, entitled *Anxiety: Using depth psychology to find a balance in your life*.
- <sup>11</sup> Riemann, however, had never concealed his interest in astrology. By 1936 he had published a small volume *Die Astrologie. Ein Lehrgang in Versen* [Astrology. A course in verse].

- <sup>12</sup> *Astrologie—Tatsachen und Meinungen*, 1958 (at 44:55), translated by G. M. This television program is produced by the Süddeutscher Rundfunk Stuttgart and broadcast on December 12, 1958. It also introduces Thomas Ring, who interprets a horoscope as a demonstration of his astrological work. As a critic of astrology, Theodor W. Adorno has his say at length (see below).
- <sup>13</sup> In general, the term “serious astrology” is used to distinguish astrological practice, which is based on comprehensive training and thorough knowledge of the astrological symbol system, from a superficial and oversimplified application, such as that found in the sun sign astrology of newspaper horoscopes.
- <sup>14</sup> Several works could be referenced because Ring developed these concepts early on in his astrology material. Two volumes are mentioned in particular: the 1975 book *Existenz und Wesen in kosmologischer Sicht* [Existence and essence in a cosmological view], and *Astrologie ohne Aberglauben* [Astrology without superstition] from 1972, particularly, the chapter “Astrologie im heutigen Weltbild” [Astrology in the present conception of the world]. Ring gives corresponding terms for all three areas only in the first two lines. In the remaining lines he only distinguishes cosmotype from phenotype.
- <sup>15</sup> In classical astrology, the signs of the zodiac were each attributed a planet as a so-called “ruler.” The ruler of Aquarius is Uranus. Before its discovery it was Saturn, which then became the “second ruler.”
- <sup>16</sup> The subtitle of Adorno’s famous analysis of astrology columns in *The Los Angeles Times* is “A Study in Secondary Superstition” (Adorno, 1957). In the above-mentioned television programme *Astrologie—Meinungen und Tatsachen* from 1958 Adorno broadly follows the argumentation of this paper. What provokes him most is the claim of astrologers to pursue science or at least something close to it. Thus he states:

So if astrology really came across as what I think it is, a kind of traditional superstition, I would have as little objection toward it as I have to any wandering gypsies or old women who tell fortunes from coffee grounds. So it is precisely the claim of respectability that is being made here, and the claim that this has something to

do with serious and controllable science, that seems to me, at least in the sense of a theory of science, to be utterly untenable. (*Astrologie—Tatsachen und Meinungen*, 1958, 05:04; translated by G. M.)

- <sup>17</sup> In an interview in the television documentary *Thomas Ring—Ein Fernsehportrait zum 90. Geburtstag* [Thomas Ring—A television portrait for his 90th birthday], produced by Manfred Voltmer in 1982, he expressed his opinion on this and called him a wise man.
- <sup>18</sup> As a politically left-wing artist and intellectual, Ring became involved in the struggle against the rise of National Socialism and thus came into its field of vision. Later he secretly conspired with the resistance against the Nazi regime (Skiebe, 1988, p. 156). However, there was also an interest on the part of important individuals from the leadership of the Nazi government in “cosmobiology” and thus in Ring as an astrologer, who had already distinguished himself in this field with his publications. However, Ring did not enter into any cooperation (*ibid.*, pp. 135–165).
- <sup>19</sup> Bender’s esteem for Ring’s work was also reflected in writing the preface to Ring’s volume *Astrologische Menschenkunde* (1956).
- <sup>20</sup> IGPP archive signature 10/5 “Straßburg: Astrologischer Zuordnungsversuch 1944.”
- <sup>21</sup> The documents concerning this investigation can be found in the IGPP archive (signature: E/20 “DFG-Jahresbericht 1953. ‘Untersuchung wissenschaftlich nicht anerkannter Deutungs- und Beratungspraktiken’”, 40/3: “Untersuchung wissenschaftlich nicht anerkannter Deutungs- und Beratungspraktiken: Jahresbericht 1953”). See also Bender and Timm (1967). However, it is hardly surprising that astrology skeptics such as Ludwig Reiners quickly stepped forward in order to disavow the project (see letter to the editor by Bender, 1953).
- <sup>22</sup> The other members of the group of the five best performers were Ernst von Xylander, Fritz Riemann, and Willy Probst (letter from Bender to Böer of July 17, 1954; IGPP archive, E/21: Böer, Walter, 1952–1955). A reanalysis of the data of this study was made by Timm & Köberl (1986) in order to correct statistical flaws of the first evaluation;

nevertheless, they found a correlation on a 1% level of significance between astrological and psychological assessments.

<sup>23</sup> He worked full-time at IGPP for a certain period of time during 1963–1964 (Howe, 1967, p. 244, 1995).

<sup>24</sup> Cf. Jung and Main, 1997, pp. 109–118, for an English translation. Jung was intensively concerned with astrology as a symbolic system and practice (Buck, 2018). His assessment varied during his lifetime. In a letter to Aniela Jaffé dated September 8, 1951, he wrote: “I have to rework my chapter on astrology. There, a significant change will occur (. . .). Astrology is not a mantic method but seems to be based on proton radiation (coming from the sun). I still have to conduct a statistical experiment, to be on the safe side” (Jung, 1980, pp. 230–231, translation by G. M.). However, after getting meaningful, and in certain respects significant, yet inconsistent results with his experiment, he interpreted them as the consequence of synchronicity, not of a causal correlation: “From a rational point of view, such an experiment is completely worthless, because the more often it is replicated the more likely it will have an unsuccessful outcome” (Jung, 1957/1958, p. 90, translation by G. M.). See also Mayer (2019).

<sup>25</sup> Another school with an independent approach that had achieved a relatively high level of recognition is the “Münchener Rhythmenlehre” developed by Wolfgang Döbereiner (1928–2014) in the 1950s. From another, more political point of view, a supplementary story of German postwar astrology could be written. On the one hand, it would be dominated by the struggle against critics such as Ludwig Reiners, who made a case against astrology with his 1951 book *Steht es in den Sternen?* [Is it written in the stars?]; and on the other hand it would be characterized by the suppression of fatal misconduct of many astrologers and their approaches to the Nazi regime as well as the creation of legends with regard to persecutions by the Nazis (Howe, 1984; Schubert-Weller, 1987a, 1987b, 1988a, 1988b).

<sup>26</sup> Currently, the website of the DAV lists 16 training centers. Five centers provide correspondence courses or webinars (<http://www.astrologenverband.de/ausbildung/dav-ausbildungszentren>).

<sup>27</sup> A concise presentation of Niehenke's approach to astrology can be found in his book *Astrologie. Eine Einführung* [Astrology. An introduction] published in 1994 by the renowned publishing house Reclam. A discussion of policy by several German astrologers can be found in a special issue of the *Zeitschrift für Anomalistik* 7 (2007), pp. 9–79.

<sup>28</sup> In retrospect, Niehenke expressed himself as follows:

The fact that it was relatively easy for me to reach a consensus on central questions of astrological self-understanding among four astrological professional associations with very different orientations at that time was certainly also due to this 'external pressure,' which was created by the feeling of being slandered or discredited, or at least misunderstood. It was the more or less unconscious focus on this aspect, the unspoken consensus among us initiators, that it should be an answer to this situation that made consensus possible. So what we all know as 'political wisdom' also proved true with us: An external opponent unites. (Wunder & Voltmer, 2007, p. 77)

<sup>29</sup> As one of the peer reviewers of this paper rightly pointed out, this is certainly not the only reason. It also has to do with which persons are able to actively carry out such research. Gauquelin's death left a large gap in the research landscape, since very few researchers are so intensively dedicated to this field. After the death of Gauquelin, for instance, access to birth data has become much more restricted due to data protection.

<sup>30</sup> Telephone conversation with Helen Fritsch on June 9, 2016. See also <https://www.astrologenverband.de/verband/preisverleihung-goldener-jupiter>. Since recognition must be applied for again and again at short intervals and this procedure is a considerable financial burden, this training center did not renew its approval after a few years (telephone conversation with Valeska Haker, secretary of Helen Fritsch, on February 20, 2020). However, the goal of the DAV becoming a member of the "Bundesverband der Freien Berufe e.V." [Federation of German Independent Professionals] was not achieved. This would have meant that astrology would become a fully officially recognized profession. Besides formal criteria—the association must have at least 1,000 members—there were content concerns. Skeptics

also raised objections (telephone conversation with Klemens Ludwig, chairman of the DAV, on February 7, 2020).

- <sup>31</sup> <https://www.astrologenverband.de/verband/dav-thesenpapier>
- <sup>32</sup> Telephone conversation on May 23, 2016. Comparative figures for the membership development of the Swiss Astrological Association (SAB), involved in the design of the thesis paper, show that this could indeed have been an important factor. Since its foundation in 1983, the number of members has risen steadily from 16 at that time to 234 as of September 2019 (e-mail from Markus Eicher, board member and vice-president of SAB, September 12, 2019).
- <sup>33</sup> Telephone conversation with Alois Treindl of May 31, 2016.
- <sup>34</sup> Telephone conversation with Raphael Gil Brand (May 30, 2016) and Martin Garms (May 6, 2016).
- <sup>35</sup> Telephone conversation with Martin Garms, producer of *Meridian*, of May 6, 2016.
- <sup>36</sup> Telephone conversation with Reinhardt Stiehle (May 20, 2016).
- <sup>37</sup> <https://www.google.de/trends/explore?hl=de#q=Spirituell,+Lebensberatung,+Astrologie,+Kartenlegen,+Tarot&geo=DE&cmpt=q&tz=Etc/GMT-2&tz=Etc/GMT-2>
- <sup>38</sup> Information by telephone from Dominique Tomaszewski of the administrative office of the DAV, on 7 June 7, 2016.
- <sup>39</sup> See also Campion on this point. I absolutely agree with his statement: “(. . .) there is no sure way to measure any increase or decline in interest” (2012, p. 205).
- <sup>40</sup> The *Meridian* series with the title “Die Zukunft der Astrologie” [The future of astrology] started with issue 2/2010 and ended with 2/2012, with a gap in issue 6/2011. It consists of 12 one-page interviews in total. *Meridian* publishes in six issues per year.
- <sup>41</sup> I would particularly like to thank the following people (in alphabetical order) with whom I had very interesting conversations about the current situation of astrology: Rafael Gil Brand, Franziska Engel, Holger Faß, Helen Fritsch, Martin Garms, Monika Heer, Klemens Ludwig,

Reinhardt Stiehle, Dominique Tomaszewski, Alois Treindl, and Thomas Weyer-Eberling.

- <sup>42</sup> Rafael Gil Brand, for instance, was one of the leading forces of the reformulation of the statement of principles of astrological associations between 2011 and 2013 (see above). He wrote the *Lehrbuch der klassischen Astrologie* [Textbook of classical astrology] (Gil Brand, 2000) and encourages the practical use of the old techniques which were considered obsolete with the approach of the revised astrology by Klöckler, Ring, and Niehenke.
- <sup>43</sup> The so-called filter bubble theory (Pariser, 2017), according to which Internet search engine algorithms offer search results personalized according to (assumed) preferences calculated from various variables (location, websites visited, etc.), should not be sufficient to explain this. A more important reason might be that public controversies about serious astrology are much rarer: “Society has become accustomed to astrology—not in the sense of public recognition, but as one of the countless ‘madnesses’ that exist in modern societies, and as one of the relatively harmless ones,” says Edgar Wunder in his statement on the *Grundsatzpapier astrologischer Vereinigungen* (Wunder & Voltmer, 2007, p. 69).
- <sup>44</sup> Cf. Ertel and Irving (1996), and Ertel (2011, 2015) for an overview of the research concerning the Gauquelin approach.
- <sup>45</sup> McRitchie (2006) made similar comments. He then tried to put together elements of an astrological theory himself. His five basic principles of astrology were: (1) “correlativity” (microcosm and macrocosm correspond to each other), (2) “nativity” (every being, thing, or event has a moment of birth), (3) “co-evolution” (microcosm and macrocosm develop synchronously and in cycles), (4) “correlation” (the connections between cosmos and earthly events are not causal but correlative in nature), and (5) “co-relevance” (there is a functional coherence between microcosmic and macrocosmic events that can be interpreted as a symbolic language). This corresponds in broad outlines to the approach of psychological astrology as it was represented in the first version of the above-mentioned “Grundsatzpapier astrologischer Vereinigungen.”



<sup>46</sup> Ellic Howe wrote in 1984:

Unfortunately for English-speaking readers the most helpful books on this area are all by German authors. See Dr. H. A. Strauss, *Psychologie und astrologische Symbolik*, (. . .) written by a Jungian psychologist; Thomas Ring, *Astrologische Menschenkunde* (. . .); H. von Kloeckler, *Grundlagen für die astrologische Deutung*, (. . .) [Kloeckler is Klöckler; the book mentioned is volume 2 of the *Kursus der Astrologie* in three volumes—G. M.]. These books reflect an intellectual level unknown in British or American astrological writing. (Howe, 1984: 16, footnote 1)

<sup>47</sup> Due to the huge effort and generosity of Alois Treindl, founder of the “Astrodienst Zürich” and the Internet portal [www.astro.com](http://www.astro.com), the volumes *Astrologische Menschenkunde* by Thomas Ring can be downloaded for free: [https://www.astro.com/astrologie/in\\_ring\\_g.htm](https://www.astro.com/astrologie/in_ring_g.htm)

<sup>48</sup> Telephone interview May 20, 2016.

<sup>49</sup> “Judgement without Consideration” was the title of his talk.

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## Astrology and Science: A Precarious Relationship Part 2: Consideration of Empirical Investigations on the Validity of Astrology

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**Abstract**—In Part 2 of “Astrology and Science: A Precarious Relationship,” the results of some population surveys are first presented to reveal definitory problems in determining astrology. When investigating “astrology,” of crucial importance are which concepts and practices to include. After definitional clarification, the anomalistic aspects of astrology or astrological practice are attended to with a distinction made between the above–below theorem as the traditional basic assumption of astrology and the possible psi phenomena that can occur in astrological counseling practice. Further sections describe problems in scientific studies on the validity of astrology. Such problems could have led to the failure of these efforts. Furthermore, specific methodological problems in the investigation of the above–below theorem and in matching tests are addressed.

**Keywords:** astrology; population surveys; definition; empirical studies; methodological problems; above–below theorem; psi phenomena

In the first part of this paper in the preceding article (Mayer, 2020), the development of astrology in German-speaking countries in the 20th century was described, and was distinguished by a specific effort to reintegrate it into the academic sciences. This was mainly linked to the astrological anthropology of Thomas Ring (1892–1983). With his concept

of the “cosmotype,” which he understood as mediating between the genotype and the phenotype, Ring presented an ambitious model for a revised, modern understanding of astrology (Ring, 1956, 1959, 1969, 1972, 1973, 1975). This was supplemented by system-theoretical considerations (cf. Niehenke, 1994), and in its multidisciplinary conception represented an approach to astrology that would be insufficiently covered by the term “psychological astrology.” Ring’s theoretical approach combined with his successful, practical, astrological work led to a fruitful and long-standing collaboration with the founder of the Institut für Grenzgebiete der Psychologie und Psychohygiene (IGPP), Professor Hans Bender (1907–1991), who met him in Berlin in the late 1920s (Bender, 1984).<sup>1</sup> Bender wrote that Ring, with his “extensive literary life’s work . . . , made a decisive contribution to liberating astrology from the bickering of schools and sects and making it the subject of a comprehensive anthropology” (Bender, 1984, p. 225, translated by G.M.). Astrology remained one of the central topics of the IGPP’s research program during Bender’s lifetime. This is shown with the 56 scientific articles published in the period 1957–1996 in the *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie*, which was founded by Bender. The very first edition contained an article on the results of a sociological survey on astrology (Schmidtchen, 1957). The second issue contained three experimental studies (C. G. Jung, 1957/1958; Arno Müller, 1957/1958; Michel Gauquelin, 1957/1958). However, the research efforts remained contradictory in their results and negative in their tendency to prove a correlative relationship between astronomical constellations and events on Earth. In the following, I will deal with the problems of scientific approaches to and validation of astrology.

### **ATTITUDES TOWARD ASTROLOGY—TOWARD WHICH ONE?**

If you look at population surveys on belief in and attitudes toward astrology, you will find questions such as “Do you believe that our zodiac sign determines our lives?” (TNS Infratest, 2012), “Do you believe in astrology?” (marktmeinungsmensch, 2017), or “Do you believe that horoscopes can tell you something about what will happen in the future?” (YouGov, 2015), to name three examples. Nowhere is it specified which form of astrology is meant: the one at the level of

newspaper horoscopes, the one in *Astro TV* shows, or the one with a trained astrological consultant, for instance. The survey results can then be correspondingly strange and difficult to interpret, as seen from the data from the above-mentioned YouGov survey. In this survey, launched in Germany, Great Britain, and the U.S., another question was asked about astrology, namely “Do you believe that star signs can tell you something about yourself or another person?”<sup>2</sup> The first question concerns the prognostic, the second the personality psychological aspect of astrology. Table 1 shows the compilation of the results for the two questions asked in the three nations.

**TABLE 1**  
**Results of YouGov Survey (2015) on Astrology Questions**  
**in Germany, Great Britain, and the United States**

<i>Astrology Question</i>	Nation	Females	Males	Total
“Do you believe that horoscopes can tell you something about what will happen in the future?”	D	21	9	15
	GB	9	6	8
	USA	19	10	14
“Do you believe that star signs can tell you something about yourself or another person?”	D	20	11	16
	GB	27	12	20
	USA	39	21	30

Numbers are the percentages of affirmative answers to the questions.

It can be seen that the affirmation of the two questions is significantly higher among women than among men—to my knowledge, this is consistent across all the different surveys. Looking at the values in a national comparison, one comes across the strange result that we find a clearly lower agreement among the British on the question of prognostic astrology. In contrast, in the question of personality astrology we find the lowest value in the Germans and a very high value in the sample in the U.S. How can this be interpreted? Perhaps that the Germans were thinking more of newspaper horoscopes in the second question, whereas the Americans have a better knowledge of personality astrology, which is reflected in the high approval rate? This is a possible explanation that cannot be derived from the data, because other plausible explanations could be at play.



Using this example, I would like to show how meaningless population surveys of this kind are. We simply do not know the basis for the judgments.<sup>3</sup> The *National Science Board* regularly collects data about attitudes in the U.S. regarding the field of science and technology, and regarding “pseudoscience,” with astrology as an example of the latter. In representative surveys, Americans are asked to what extent they consider astrology to be scientific. The results for the data collected in 2012 show that 55% consider astrology as “not at all scientific,” 10% as “very scientific,” and 32% as “sort of scientific” (NSF, 2014, 7/25–7/26). Here, again, the question arises, which form of astrology is the basis of the respective judgments.

### ASTROLOGY AND MATTERS OF DEFINITION

In such contexts one cannot speak of a single astrology. One should take into account the heterogeneity of astrological practice and use this term in the plural (Campion & Greene, 2011; Kelly, 1997). If one looks at the specialist literature and asks astrologers about their particular view of the nature of astrology,<sup>4</sup> one gets quite different characterizations:

- a divination technique
- an esoteric/occult/hermetic practice
- a wisdom teaching
- a religion
- a science
- an art form
- a useful kind of fiction

This list includes both practical forms and ideological basic assumptions, and once again illustrates the need for differentiation if a researcher wants to know what is being referred to.

The field of astrological forms of practice can be divided into different aspects. The historian Patrick Curry (1989), for example, created a hierarchical model based on the situation in the England of early modernity, with three forms of astrology that roughly corresponded to social classes. While the lower form concerned fortune-telling (on the street and during funfairs) and almanacs, the middle-form astrology

dealt with the interpretation of horoscopes and complex prognostic work. Finally, the subject of high astrology was philosophical and theological speculation. In today's astrological practice, one finds the lower and middle forms; yellow-press astrology is among the first mentioned, and astrology that is based on individual horoscopes with complex calculations is among the latter. As I showed in Part I of this paper (the previous article in this journal issue), the offers available on certain Internet portals and in TV formats such as *AstroTV* could be seen as an intermediate form, since the consultations are based—at least apparently—on individual horoscopes while a thorough analysis of the individual's chart is lacking.

Differentiating astrology can also be structured in a various ways; for example, the purpose of application, according to which personality astrology can be distinguished from medical astrology, financial astrology, horary astrology, etc. Another possibility for structuring arises from the reference to the underlying worldview. Willis and Curry (2004, pp. 65ff.) mention five forms in their chapter "Varieties of Astrological Experiences": (*openly*) *divinatory* astrology, *neo-platonic*, and *hermetic* astrology, *Aristotelic* and *Ptolemaic* astrology, *scientific* astrology and, finally, *psychological* astrology. This reasonable differentiation largely reflects a historical development and addresses the relatively early tension between spiritual–magical and rational approaches—a dichotomy that continues to play a major role. The distinction between scientific and psychological astrology implies that the latter does not refer to the form of psychology that is part of the academic sciences. The authors point out the great ambiguity regarding the ideological foundations of psychological astrology, which many practicing astrologers are reluctant to face:

There is a parallel here [between psychological astrology based on C. G. Jung's theory of archetypes—G.M.] . . . with the way both Ptolemy's and Aquinas's earlier ambiguous accommodation purchased a new lease on life for astrology in a fundamentally Aristotelian cosmos. To some extent, both share the price, namely acceptance of the basic (and fundamentally anti-divinatory) premise that the perceptible cosmos runs entirely 'naturally,' material and even mechanistic principles with no direct spiritual input or dimension . . . . The result is an astrology, like a world, divided into those

bits that can be naturalistically appropriated and a ‘supernatural’ remainder—at best inexplicable, but from a scientific–theoretical point of view, impossible, and therefore fraudulent. (Willis & Curry, 2004, pp. 73–74)

With the increasing integration of classical approaches and horary astrology into contemporary astrological practice (see Part 1, the previous article), we find a corresponding pluralization in the underlying worldviews.<sup>5</sup>

## ANOMALISTIC ASPECTS IN ASTROLOGY

### The Above–Below Theorem and the Interpretation of Complex Horoscope Structures

This paper aims to examine the relationship between science and astrology from the perspective of anomalistics as a field of research of science (Mayer et al., 2015) to which astrology belongs. A prerequisite for the assignment of astrology to the field of anomalistics is the assertion that astrology “functions” on a basis not yet fully understood and explainable with known scientific models. The assumption on which almost all forms of “Western” astrology are based asserts a connection between lawful astronomical circumstances, dynamics, movements (cosmic dimension), and earthly events as expressed in the much-quoted sentence from Hermes Trismegistos’ *Tabula Smaragdina* “That which is below is like that which is above and that which is above is like that which is below.”<sup>6</sup> The astronomical elements relevant for astrology are attributed to a more or less fixed basic meaning, which, however, can undergo extensions and time-related modifications. The lawfulness, and thus also calculability, of astronomical dynamics, including the basic meaning attributed to them, represents a central prerequisite of astrological practice, i.e. regardless of possible extensions and modifications of the meaning of the astrological elements they are not interchangeable. “Mars,” for example, cannot have the same meaning tomorrow as “Venus” has today. If one takes the (few) stable findings seriously, the assumed above–below connection represents a scientific anomaly.

Usually, this connection is experienced as evident in practical applications, such as the interpretation of a birth horoscope, or the

creation of a prognostic or retrognostic horoscope. In this process of experiencing subjective evidence concerning the reliability and “truth” of astrology, another level comes into play, that of the interpreter and the receiver of the interpretation. It is no longer a matter of the theoretically modeled above–below connection, which should be as “pure” as possible, i.e. free of interpretational freedoms and decision-making necessities, but of a complex, often interpersonal interaction that is susceptible to influences of the most varied kinds.

Therefore, an important distinction is whether a scientific study of the validity of astrology investigates the “above–below theorem” (ABT [Oben–Unten-Theorem]; Wunder, 2005, p. 297) with the examination of a presumed connection between the existence of an astrological factor and a life-world fact as unambiguously as possible; or, whether the coherence or “hit rate” of astrologers is examined on the basis of interpreting complex horoscope structures, i.e. the performance of astrologers in general. This differentiation is reflected in two research paradigms, each with its own methodological problems (cf. Ertel, 2015). The first paradigm concerns the examination of isolated astrological assumptions, such as the assumption that, in the case of prominent athletes, Mars was more frequently near the Ascendant than expected by random chance, as Michel Gauquelin’s well-known studies have shown;<sup>7</sup> or that there are more interaspects<sup>8</sup> to be found between the horoscopes of loving partners or friends than would be expected by chance (Mayer & Garms, 2012), to name two examples. In the case of the second paradigm, empirical investigations usually apply to matching experiments. Astrologers, for example, are presented with horoscopes of politicians and painters, which they have to assign to the respective occupational groups on the basis of their analysis (Ertel, 1998); or they get ten horoscopes, and ten psychological reports, and must assign the related reports and horoscopes (Clark, 1960a, 1960b). With the second method, no direct proof of the validity of the ABT can be obtained from the results. Even excluding conventional possible explanations, the success of the astrologers could be attributed to other factors such as their psi ability (clairvoyance, etc.) in the case of a significantly positive result. The astrology skeptic (and former astrologer) Geoffrey Dean (1977, p. 554) writes about Clark’s successful blind experiments mentioned above: “Whatever the explanation, it is clear that the

significant blind trials have not demonstrated that astrology works but only that astrologers work.”

Accordingly, if we assume the validity of astrology or astrological practice and exclude conventional explanations, we are dealing with or may be dealing with separate anomalies.<sup>9</sup> The first concerns the ABT; the second can occur in the process of horoscope interpretation, and interaction with clients, the latter being describable by the concepts of parapsychological research.

### **Astrology and Its Relation to Magic and Divination**

Referring to anomalistic processes, there are differences within various astrological methods. As described in Part 1 of this paper, astrologers such as Freiherr von Klöckler and Thomas Ring attempted to detach these forms of a revised astrology from the realm of magical ideas and practices and to make them compatible with the findings of modern natural sciences and academic psychology. They were critical of techniques based on magic conclusions by analogies that characterized classical astrology using directions to make prognostic statements. With these techniques, small periods of time are extrapolated according to a formula (direction key). In the case of secondary directions, one day corresponds to one year. Klöckler called them “fiktive Methoden” [fictitious methods] (1989, p. 153). The moment of birth, and the rhythmic return of patterns and elements are decisive for the forms of astrology promoted by these astrologers. At least in relation to more complex living organisms that go through a period of maturation during pregnancy before birth, i.e. before the beginning of existence as an independent organism, the birth chart can be understood as a kind of “Entlassungsschein,” i.e. release certificate (Ring, 1975, p. 24). According to revised astrology, no direct causal effect relationship has to be assumed for the above–below connection due to an adjustment to cosmic rhythms:<sup>10</sup>

The above and the below are connected solely by the *movement*, physically the celestial mechanics, biologically and psychologically the life movement. Thus, the problem is reduced to whether, and to what extent, the changeable, volatile, and convertible can be implemented into the uniformly recurring. This is conceivable as the rhythmic integration of vital processes into the regular recur-

rence of constellations of the solar system. (*ibid.*, p. 13; emphasis in original; translation by G.M.)

Due to the clear definition of the “Aussagegrenzen,” i.e. limits of validity, of astrology, which are determined by the genotype (heritage) and by the phenotype (environment), concrete astrology-based statements on events or the absolute level of personality characteristics (e.g., intelligence) are not considered possible in this model; the relationships to classical magical–occult thought are minimized. The anomaly consists of an insufficiently understood and correlatively assumed connection between astronomical conditions and structures and dynamics on the earthly plane.<sup>11</sup> In other techniques, which are more strongly influenced by “classical astrology,” hermetic patterns of interpretation or magical elements come into play to varying degrees. This is mostly evident in techniques that can be described as “astro-manticism” or “astro-divination.” Some people don’t count this as astrology. In an oracle situation, for example, a card is drawn from a deck of cards whose cards represent astrological elements, and its symbolic content is used to answer a question. “The difference [between the mantic and the astrological use—G.M.] lies in the game situation and the manipulation of the unconscious there, the logical opening up here” (Ring, 1972, p. 62).<sup>12</sup> Relatively close to this method, although much more complex in its procedure, is the technique of horary astrology. There, a horoscope is calculated to exactly the point in time at which the question was asked. Since the questioner is usually unaware of the current ascendant and the house position of most planets, this method involves a similar element of chance to drawing an oracle card. The answer is then found from a relatively mechanical processing of certain fixed astrological rules of interpretation with greatly reduced complexity of the symbol structure. Many concrete details are obtained on the basis of analog–magic interpretation keys. For example, the degree distances to an exact aspect between signifiers are converted into time periods or geographical distances, so that two degrees distance to the exact point of aspect are translated into two days, month, years, or two meters, or kilometers, respectively.<sup>13</sup>

With these examples of techniques based on the astrological symbol system, the spectrum’s range is marked by hardly referenced

(in revised astrology) to specifically referenced (in horary astrology) to analog–magical thinking, to “pure divination.”<sup>14</sup> So here, too, in astrological practice, it is necessary to distinguish between the “pure divinatory principle” of operating with chance and the assumption that hermetic principles of the correspondences are effective on different levels and time scales, as well as the aforementioned aspect of psi in the astrologer, or interaction between astrologer and client. From an anomalistic–scientific perspective, no value judgment is associated with the distinction since all three forms of anomalies can occur. However, it will be harder to find explanations for the validity of analog–magic or hermetic laws than for the “purely divinatory technique” and for psi in the astrologer. The latter are provided by the known concepts of parapsychology.

### **Astrology and Psi**

For some astrologers who remain interested in the ideological and scientific foundations of their practice, the assumption that the main factor for the successful “functioning” of astrology lies in the psi abilities of astrologers offers a way out of such dilemmas as the failure of many scientific tests and the much-discussed problem of a “correct” or successful interpretation of an erroneously calculated horoscope.<sup>15</sup> Even for skeptics who question the central basic assumptions of astrology but do not generally reject every form of heterodox explanation, psi processes appear attractive as an illustrative model for the sparse empirical evidence in astrological classification experiments (e.g., Dean & Kelly, 2003; Storm, 2007).<sup>16</sup> Geoffrey Cornelius is one of the most explicit exponents of this thesis. He is a British practicing astrologer who has studied in depth the philosophical foundations of astrology and developed his own approach to astrology (Cornelius, 2003). With this he does not avoid dealing with fundamental problems for understanding the practice and “truth” of astrology, as Kochunas does in his essay “Why Astrology Works,” and who describes astrology as an “Imaginal Discipline” which “must drop its pretensions to be an empirical discipline” (2000).<sup>17</sup> It is therefore worth taking a closer look at Cornelius’ approach. Familiar with the scientific experiments on the validity of astrology, he recognizes the empirical evidence, for example in the work of the Gauquelins. He also does not deny the

widespread failure of astrologers in scientific experiments, including his own (Cornelius, 2003, pp. 64–65), which in no way corresponds to his subjective experience as a practitioner. From the scientific findings he draws conclusions, among other things:

Conventional astrological interpretation is not dependent on objective correlations. . . . Some unknown “other” element is involved in the astrological interpretation. . . . (*This in turn suggests that the theoretical framework of traditional astrology is likewise inadequate to describe the phenomena.*) . . . This “other element” is broadly but frequently characterised, by astrologers and researchers alike, as either ESP or intuition. . . . The perception of astrology is founded in *no special technique*—experience does not improve it. . . . The perception in astrology is not regular but unpredictable and non-regular. (*It is not open to a rule and it appears to be a function of the situation and the participants. If it is a function of the situation, then it is also context-specific rather than universal.*) (Cornelius, 2003, p. 67, emphases in the original)

For Cornelius, the practice of astrology is divination in the literal sense, sign interpretation, “questioning the gods,” comparable with the practice of the *I Ching*. The latter even brought him to astrology (Cornelius, 1998). And as with the *I Ching*, there is a system of rules of interpretation of signs (astrological elements) in astrology, on the basis of which the divinatory statements are obtained, but the element of “coincidence” or “moment”—Cornelius’ book is called *The Moment of Astrology*—plays the decisive role for the author: “The perception in astrology is not regular but unpredictable” (Cornelius, 2003, p.67). The astrologer is more comparable to an artist or magician (Cornelius, 2010, p. 15f.) than to a practitioner who builds his success on the logical and experience-based application of a reliable system of symbols and their interpretations based on universal and natural laws.<sup>18</sup> Even if—as in the case of Cornelius—the traditional application of astrological rules and techniques is considered necessary (see below), the ABT itself loses its fundamental significance and becomes a minor aspect of astrology.

Of course, you can see it that way—the field of astrology is large enough, and also the field of astromantics can be differentiated from the simple use of an astrological card deck to the sophisticated interpretation based on a complex system of symbols combined with



a random process characteristic of divination. Cornelius acknowledges that “astrology does have a physical and objective presence, an occult mystery of the natural order of things” (1998), and that it contains objective phenomena that are even accessible to science. However, this is of little interest to the work of astrologers. He refers to these objective facts, as a classical distinction *astrologia naturalis*, while the astrologer’s work concerns *astrologia judicialis*, i.e. judicial astrology. In this case, subjectivity prevails and the creative or visionary genius of the astrologer emerges. Accordingly, the experimental–statistical studies on validity are ineffective for astrological practice because they have nothing to do with it.<sup>19</sup> “(T)he main part of what we do is the interpretation of symbols to arrive at particular inferences and judgments, whether about character or about events in life. And this practice is divination, not science” (ibid.). To skeptics such as Paul Kurtz, he describes what astrologers would do as a “poetic interpretation of the heavens” (ibid.) and thus tries to undermine their criticism. This does not mean, however, that he would consider the learning and application of the technical side of astrology unimportant. Understanding astrology as an allegory (2003, pp. 288f.), Cornelius takes the astrological rules and symbols in their traditional meanings seriously and accordingly rejects, for example, artificially created or chosen planet positions (2010, pp. 13f.) because one “is doing something that begins to abuse the ritual of *attending* the world around us” (ibid., p. 14). He sees the practice of the astrologer as an “as if” exercise” (2003, p. 289), which, due to the allegorical nature of astrology, can lead to reliable and “real” descriptions of situations, but not necessarily so. Another factor (intuition, psi, divine inspiration) is required to achieve a “bull’s-eye.”

However, it is precisely the regularity and predictability that makes astrology so fascinating for many people, distinguishing it from “esotericism” for its clientele, as professional practitioners stated in a survey of experts that I conducted in 2016.<sup>20</sup> When astrologers meet and discuss the birth charts of prominent people such as Donald Trump (as I have witnessed), the structure of the argument does not follow a poetry competition, but rules are applied, discussed, and supported by implicit or explicit “statistical” statements (i.e. frequency and context statements). The mere fact that the symbol system of astrology can be used to communicate reliably with other people who speak this

astrological “language” via charts and their interpretations should provide sufficient clues to give the “objective,” not psi-conditioned or accidental part the right status in astrological practice.<sup>21</sup>

The process of integrating new astrological elements into the canon of astrology also follows rule-based methodological approaches—at least in the somewhat advanced phase and as an important part of the process.<sup>22</sup> For example, one enters the newly discovered planet Chiron in as many horoscopes as possible of prominent or personally known persons to examine those in which the new planet is placed in a significant position.<sup>23</sup> In the sense of a data-supported theory formation, it follows to consider which aspects of the persons concerned become better understandable under the inclusion of the new element, and which similarities among the persons with a significantly placed Chiron in the chart can be determined, which becomes easier to explain under the consideration of a new element.

### **SCIENTIFIC STUDIES ON THE VALIDITY OF ASTROLOGY: PROBLEM AREAS**

With my critique of the way the references to psi processes are used, I am by no means minimizing the importance of subjective aspects in the practice of horoscope interpretation. It is truly a complex process with many degrees of freedom, space for psi processes, and above all human creativity. One can even say that the latter is necessary to produce good interpretations. Just as in music there are “lifeless” and bland interpretations as well as soulful and ingenious interpretations of a composed piece of music, so there are in the interpretations of horoscopes. And just as one cannot say that the “lifeless” interpretation of a musical work of music is “wrong” if the interpreter adheres to the notes, one cannot suggest an unimaginative and uninspired processing of a horoscope is “wrong” as long as the rules of interpretation are adhered to. The interpretations are simply poor and have little meaning when the connection between the symbolic language of astrology and its concretion in the client’s individually and collectively shaped environment is not successful. In order to achieve a “bull’s-eye” in an interpretation that is beyond the known and effective psychological mechanisms of cognitive illusions such as the Barnum effect,<sup>24</sup> it is

necessary to creatively explain a translation of the abstract pattern, or the comparatively abstract structural principles, into the possible concrete events in the lifeworld.<sup>25</sup> Therefore, the task is to convey how a certain constellation, which may appear contradictory in itself, represents the lifeworld of a certain person with an individual biography marked by hereditary, and by micro- and macro-social as well as general cultural environmental influences. The schematic use of key astrological terms will have little success, and some astrologers who consult in such a rather stereotypical way may quit in frustration if not helped by the aforementioned psychological mechanisms that ensure the experience of mutual, subjective evidence.

### **Taking the Limits of Validity Seriously**

This complex of necessary “translation work” also accounts for many problems in scientific studies on the validity of astrology. The problems concern what is called “Aussagegrenzen,” limits of validity, in revised astrology. According to the theoretical model assumptions of revised astrology, this means that one finds only structural features and character traits in the chart that must be interpreted in relation to external conditions. If, for instance, a “favorable” Mercury position is associated with a pronounced ability to think and communicate, no conclusions can be drawn about the IQ. If there is a severe degree of impairment of the ability to communicate due to a severe mental disability, the “favorable” Mercury position in the birth chart can only be determined in comparison with other severely mentally impaired people. Since, however, there is no agreement among astrologers on the significance of the limits of validity, from the point of view of revised astrology, this leads to regular overestimations of one’s own capabilities as an astrologer. For example, in matching experiments, in which astrologers are asked to distinguish horoscopes of 100 smart pupils and 100 mentally retarded pupils and to allocate them to the respective groups (Narlikar et al., 2009), the allocation performance of the astrologers involved was marginally worse than if dice had been thrown. Who would be surprised? Out of 51 astrologers originally involved, 27 gave assessments. In addition to a “natural shrinkage,” some of the 24 dropouts may have wisely gained insight and concluded

that the task could not be solved, while the remaining 27 astrologers delivered their allocations.

I was actively involved in a matching experiment (Wunder, unpublished), the task of which was to write short assessments on two charts. Both charts went to both chart owners. Each person selected the astrological chart interpretation they felt was “suitable” for them. Without going into details: I found this task enlightening because I noticed the difficulty in writing assessments in a way that prevents misunderstanding by the readers (i.e. horoscope-owners), even with sufficiently differing charts. Although it basically was a small task, it proved to be extremely demanding and time-consuming. After I had delivered my two assessments, I left the experiment. I was flattered by my success—the horoscope owners’ choices matched their own charts—but with “N equals 1” this of course counts for nothing. I learned, however, that some astrologers were very eager to participate and worked on many pairs of horoscopes. If one or more of these “zealots” did not have a feel for the linguistic challenge of the task and, moreover, did not observe the limits of validity, this could destroy the results of a whole experiment. This experiment was one of many that put the achievements of astrologers in a bad light and therefore seems to justify further doubts about the basic validity of astrology.

### **Astrologers’ Excuses**

In his paper “Why Astrology Doesn’t Work,” Kelly lists a number of “Astrologers’ Excuses for Failings of Astrology” (1998, p. 533).<sup>26</sup> Some of the arguments put forward are valid. For example, the statements (excuses): “(p)sychological factors, e.g., client self-insight, maturity, psychological integration, unconscious processes, etc., can modify how the chart is expressed in behavior,” and “(b)iological, e.g., age, sex, or sociological factors, e.g., socioeconomic status, culture of origin, spirit of the age, can modify how the chart is manifested in behavior;” are plausible and relate precisely to the limits of validity. “The client lacks self-knowledge” is also a framework condition that cannot be neglected. When designing and validating questionnaires in the field of personality psychology, the distinction between self-image as reflected in self-assessments, self-information, and actual behavioral data,

is relevant for determining the ecological validity of the measuring instrument. This distinction is also valid in the field of astrology. Finally, the statement “Some astrologers are worse than others” reveals a fundamental point in relation to astrological experiments, whereby the assessment “better” or “worse” should be understood in this context as limited to the experimental situation.

### **The Role of Experience**

Looking again at the conclusions by Cornelius: He views astrology as divination; *extrasensory perception* (ASW) or *intuition* play a decisive role; and *experience* as an astrologer does not improve the results (2003, p. 67). Cornelius supports this view with two concrete points: (1) the failure of experienced astrologers in classification experiments, e.g., a replication of Clark’s classification experiments (Clark, 1960a, 1960b) by Michel Gauquelin (1983, p. 138), in which all experienced astrologers were not able to accomplish the task successfully—including himself (Cornelius, 2003, p. 64f.); and (2) the report of the American astrologer Dal Lee, who participated in one of Clark’s tests, scoring quite successfully. He intuitively solved the task in a very short time, without a time-consuming analysis of the charts (Gauquelin & Sadoul, 1972, p. 243f.; Gauquelin, 1983). In effect, this speaks for a different, more complex process than the usual, thorough, astrological analysis relying on deeper considerations. This interesting single case seems to have led to an over-generalization ultimately driven by a desire to confirm his own theories: Gauquelin wanted to establish his neo-astrology, whereas Geoffrey Dean and Geoffrey Cornelius wanted to largely reduce the anomalistic part of astrology to a psi process.

If further literature is taken into consideration, there are counterexamples showing that the experiences of the astrologers seemed to play a role in success. For example, in a matching experiment to distinguish horoscopes of happy and unhappy spouses, the ten professional astrologers involved performed significantly better than the 17 amateur astrologers (Steffert, 1983). A more impressive, largely overlooked, example in the review literature on astrological experiments, is the DFG project “Investigation of Unaccredited Practices of Interpretation and Counseling” mentioned in Part 1 of this paper

(previous article),<sup>27</sup> which the psychologist and physician Hans Bender carried out between 1952 and 1954 with the participation of a total of 178 astrologers. Although the results remained below Bender's high expectations, they were significant<sup>28</sup> and withstood a critical reanalysis; some statistical errors of the first evaluation were corrected (Timm & Köberl, 1986). For the discussion here, a feature of interest is that five astrologers clearly stood out from the crowd of all participating practitioners.<sup>29</sup> Four of them were prominent, very experienced astrologers.<sup>30</sup> In addition to Thomas Ring (1892–1983), Walter Böer (1914–2007) was one of Hans Bender's regular astrological colleagues at the IGPP in Freiburg (Werthmann, 1971). Fritz Riemann (1902–1979) and Ernst von Xylander (1922–1998) were both psychologists and authors of astrological monographs. Although one can statistically expect with a large number of participating astrologers that some stand out, this top group is characterized by various qualities that make their random formation appear incredible. These astrologers consistently advocated the approach of a revised, psychologically oriented astrology with a strong, scientific orientation, and a clearly, rule-governed practice that they wanted distinguished from astromantics. It can be assumed that they certainly did not exclude the role of intuition or psi in practical interpretation work.

## EMPIRICAL INVESTIGATIONS ON THE VALIDITY OF ASTROLOGY

The correlation experiments by Bender and Clark, which had led to significant findings in both cases, cannot simply be dismissed as the result of intuitive or paranormal performance (e.g., Gauquelin, 1983, pp. 138ff.) despite the largely failed replication attempts. Nor can the attempts to explain away the connections found by Gauquelin between planetary positions and professions of prominent persons convince me. Geoffrey Dean (2000), for example, tries to interpret the correlations mainly as a result of voluntary birth time adjustments of the chart owners by themselves or their parents, with the intention of having a desired planet at the *ascendant* or *medium coeli*. Such an explanation is implausible for various reasons, which are not to be discussed here.<sup>31</sup> Even if one can agree with astrology's critics who do not disqualify the findings of Gauquelin, or the few successful classification tests, and

emphasize that these results in no way reflect the practical work of the astrologers, an anomalistic perspective is not diminished. The “black-swan principle” applies here. As in experimental parapsychology, where the effects are many dimensions smaller than in lifeworld reports of psi experiences, research on the validity of astrology, I suggest, would be better focused on the investigation of context conditions, in the broadest sense, in order to be able to initially increase the general prospects of success, but then also the effect size. The comparison with parapsychology, in particular, reveals that research in the lifeworld and in the laboratory can stimulate each other (cf. Mayer & Schetsche, 2012). A categorical statement that Gauquelin’s findings and his “neo-astrology” as well as the basics of the sparse successful matching experiments have nothing to do with the traditional practice of Western astrology creates a dichotomy, which may be pleasant for skeptics and practicing astrologers and protects the latter from narcissistic offenses (“astrology cannot be empirically investigated in principle!”), but which is not constructive and progressive.

In the following I will address some methodological aspects and problems to be considered in future empirical research on astrology and that have already been considered by prudent researchers familiar with the subject. They can be classified according to the distinction mentioned above between (1) the direct study of the ABT and (2) the study of astrologers’ performances.

### **Methodological Problems in Investigation of the Above–Below Theorem**

In statistical tests where hypotheses concern frequencies of occurrence of certain constellations and aspects and where it is not possible to make a simple comparison of matched groups, the determination of the random expectation is a central problem. This is mainly because astrological variables do not simply behave predictably on the time axis, but are subject to complex rhythmic overlaps (Mayer & Garms, 2012). Different methods are used to deal with the resulting sampling problems. Ruis (2007/2008, 2012), in his investigation of serial killers, formed a large group of adjusted comparison horoscopes from an astrological database, from which he calculated a random expectation value using the bootstrap method. Furthermore, he created 10,000

artificial horoscopes from the 77 available horoscopes of serial killers by random recombination of the astrological factors, with which a comparative value could also be calculated. However, the second method, depending on the question, is not without problems because of the effect of the slow-moving planets, a consequence that questions the value of the “shuffling” method. Another method also used by Ruis is the time-shifting method, suitable for testing aspects of fast-moving celestial bodies, i.e. mainly the moon. The actual birthday is shifted step by step, for example, by plus or minus seven days under the assumption that the postulated effect progressively weakens. Nevertheless, the use of this technique is limited to certain investigation designs. In an experiment on astrological synastry, Mayer & Garms (2012) used the sophisticated method of calculating an *individual* random expectation value for *each pair* of birth horoscopes using Monte Carlo simulations, a method that has since become feasible due to the significant increase in computer figuring power. With this technique, the complex superpositions of the orbital movements of the relevant celestial bodies are adequately considered from a geocentric perspective.

Another problem that is almost universally ignored by both astrologers and skeptics is how to deal with the signs of the zodiac in classical studies of the correlation, for example, between sun signs and occupation, noted in the large statistical study by Gunter Sachs, *The Astrology File* (1999). The astrologer Peter Niehenke (1998) highlighted that while signs of the zodiac represent analytical categories from an astrological perspective, they cannot be treated as discrete facts from an external, scientific, point of view, comparable with biological sex, age, or eye color. The zodiac divided into twelve, thirty-degree, sections with the respective zodiacal sign assignments represents a human construction. The frequently made error in these investigations could be described in the words of ethnologist William Sax: “the academic sin of reification” (Sax, 2010, p. 3). A research object is reified into a natural object, although it is a human construction. An analytical category, like signs of the zodiac is misunderstood as a naturally given property (see also Mayer, 2013); so, if one wants to check the connection between earthly events and planets in zodiacal signs, then one has to test against other divisions of the zodiac for control—take about 45-degree sections, or 20-degree sections, or shift the beginning of a section.



The direct examination of the ABT usually describes an earthly fact—event, personality trait, career choice—to which correspondences to the astronomical system are sought. Events such as “suicide,” “car accident,” and “lottery win” are clear facts; however, even though the first-mentioned event is also clear in its consequences, it makes a significant difference whether a car accident caused only a minor loss or whether it is a life-changing event.<sup>32</sup> And if one makes a small lottery win with three correctly typed numbers out of six, then this may even cause disappointment, because one had hoped for more. A similar problem arises when one takes the fact “marriage.” Whether it is marriage for love, a marriage for convenience, or a forced marriage, whether it is happy or unhappy, it must be distinguished in the perspective of revised astrology.<sup>33</sup> This may seem trivial and self-evident, but often even such modest considerations were not sufficiently considered in astrological investigations and an alleged fact was nonreflectively taken as an unambiguous detail. Thus, the probability of proving a potentially significant correlation is extremely reduced.

Similar caution is required when using questionnaires for self-disclosure of personality traits. Niehenke (1987) used a comparable method for his extensive astrology study on the relationship between astrological constellations and personality traits, and may have failed due to the discrepancy between idealized self-perception and actual personality profile and behavior, which is a classical issue concerning the validity of personality questionnaires. Astrological prior knowledge can significantly distort answers. This applies not only to consciously acquired, more or less detailed, prior knowledge, but even to the simplest characterizations, such as those that can be read casually in astrological texts in newspapers or on sugar cube packets (Eysenck & Nias, 1982, pp. 57–60). Psychologist Lance Storm cited as an example of possible causes of a discrepancy between idealizing self-image and underlying psychic structure that the notion of extraverted behavior in a depressive type can be a form of defense mechanism that obscures the actual introverted character of the person. Storm concludes from this that “No conclusions about astrology can be reached from experiments that do not have controls over self-reporting of this kind” (2007, p. 49).

## Methodological Problems with Matching Experiments

In addition to the investigator's knowledge about the subject of his research, the "quality" of the participating astrologers plays a decisive role in matching experiments. "Quality" as meant here does not refer to the general quality of the astrologer as a counselor. The success of the counseling is the result of many factors, some of which are independent of astrology, and can be based entirely on intuition, psychological empathy, conscious or unconscious *cold reading*, and, maybe, clairvoyant abilities in combination with well-known cognitive illusions such as the Barnum effect. Therefore, meaningful consultations can also be made on the basis of false horoscopes, accompanied by feelings of high subjective evidence from both the client and the astrologer. "Quality" here refers to an ability to work self-reflexively with the sense of the scientific issue; subsequently, the focus is not on client satisfaction, but on a critical reflection of what one does at work, and on what basis individual interpretations and statements are made. A sensitivity for the *limits of validity* described above is of central importance. In contrast to Cornelius (see above), who attaches little importance to the astrologer's *experience* for the outcome of such investigations, I consider it relevant, in principle, if further obligatory conditions such as the consideration of the limits of validity, but also a sensitive *handling of the language*, e.g., when writing short assessments for clients, are fulfilled.

One point of criticism by astrologers of such classification experiments is that they are artificial situations. The participating astrologers would have to adopt practices that do not correspond to their standard practice, which would make failure understandable.<sup>34</sup> With a good study design it is possible to meet this objection by adapting the task as closely as possible to the practical situation. This can be done by leaving the technique to be used completely open and allowing questions about the horoscope inquirer, as long as they do not concern points that make an assignment to the horoscopes possible by non-astrological means. Additionally, distortion by simple astrological prior knowledge ("sugar cube packets")<sup>35</sup> can be avoided by keeping the sun sign identical when selecting horoscope pairs. This procedure, however, makes it more difficult to distinguish between the two horoscopes, which is why the participating astrologer should be

given the option of rejecting a pair of horoscopes and requesting a new one until he considers the distinctness of the two horoscopes to be sufficient. These measures offer a very close proximity of the task to everyday practice and represent improved, experimental conditions for the participants without this being at the expense of experimental control, e.g., with regard to *hidden cues*. The sociologist Edgar Wunder conducted an equivalent experiment, although it is unpublished. Despite these optimized conditions for the participating astrologers, they, as a whole, could not solve the task beyond chance expectation.

There are two points to keep in mind: (1) Due to the great freedom in terms of the technology used, astrologers and their claims are now being tested to see what they actually accomplish. Astrology as a key system of symbols and interpretations, notwithstanding, is pushed into the background; one simply does not know how it was applied and what role it played in the first place. If it had been successful, it would have been possible to modify various variables in further steps to learn more about the underlying processes. The failure, however, forces an examination of whether the technique used plays a decisive role, perhaps relevant to the observation of limits of validity. (2) Furthermore, the question of what “qualities” are required in astrologers in order to increase the probability of successfully solving the tasks is gaining in importance.

In my own experience with the matching experiment mentioned above, I have experienced how crucial a good feeling for language and a pronounced imagination are when touching the (mis)comprehension possibilities of written assessments.<sup>36</sup> Accordingly, a careful selection of the participating astrologers as well as a restriction of the technology used seem to be promising measures, similar to the situation in experimental parapsychology where there remains a tendency to work with “gifted” test subjects.

## ASTROLOGY AS A SUBJECT OF SCIENCE

The best possible knowledge of the researcher about the nature of the researched object seems to be a matter of course, but this varies in the field of anomalies. Furthermore, some scientists feel able to make judgments about astrology without knowing how astrological practice works<sup>37</sup> and even conduct studies on astrology without

properly understanding what they are investigating. This results in poor or meaningless studies that add to the statistics and are weighted equally as though thoroughly thought-out studies. The few, but nevertheless impressive positive individual findings both on the ABT, and on the field of matching experiments, assign astrology a justified place in anomalistics alongside cultural, historical, social sciences, and religious studies. Expressly, the anomalistic approach requires respectable knowledge of different astrological approaches as well as the mechanisms leading to experiences of subjective evidence in astrologers and clients. Only then is it possible to sufficiently formulate hypotheses in which it is clear what is being tested.

In addition to many unobjective and non-informed criticisms, there are also a number of important critical works on astrology that offer illuminating insights into the process of contemporary, “Western,” astrological practices. Dean’s “Astrology and Human Judgement” (1998/1999) and Kelly’s “Modern Astrology: A Critique” (1997) and “Why Astrology Doesn’t Work” (1998), for example, offer unpleasant but nevertheless very important expositions for astrologers that provide a clearer self-understanding for their own actions.<sup>38</sup> The latter essay, particularly, displays many possibilities for self-immunization, a “closed system” such as adept astrologers are working with, which eventually remains irrefutable due to its complexity. For each failure a (system immanent or external) reason can be found, seemingly more or less plausible—depending on one’s own point of view. Still, this does not mean that the ABT, as a scientific anomaly, is not scientifically accessible in general. It also does not mean that astrologers’ “excuses” for their failure are necessarily not valid arguments and should therefore not be taken seriously. That would be a logical fallacy. If one does not want to give up astrology as an anomalistic research project—and the few positive findings provide sufficiently good reasons for this—then in my opinion there is no way around an explicit differentiation of astrological practices and the underlying concepts.

Michel Gauquelin has taken the right approach with his concept of “neo-astrology” in that he has abandoned the emic specifications and thus dismissed astrological *practice* as a reference for his research.<sup>39</sup> Astrological practice draws on many sources. It can probably best be understood, following Wunder, as an implicit, non-institutionalized

form of religion, as “a highly *privatized* and *pluralized* form of religion that knows no dogmatic canon and no institutions that could guarantee such a canon” (Wunder, 2005, pp. 300f.; emphases in the original). Astrology can be practiced only as divination, in which other anomalistic aspects can play a significant role (synchronicity as meaning-generating “magic of the moment”). Intuition, psychological empathy, knowledge of human nature, imagination, and creativity are important components for a good astrological chart reading, which sufficiently explains how respected consultative astrologers are not necessarily successful in an experimental setting where the client’s experience of evidence is not the main focus. According to this complexity of the research subject, there are also different scientific approaches to and questions about astrology, among which the anomalistic one only represents a partial view.

With this paper, an attempt is made to provide an overview of the difficult and diverse relationships between astrology and science. This aim intends to encourage researchers to re-adopt earlier approaches that are increasingly falling into oblivion. Modern databases and data processing offer many new possibilities for researchers. Thereby, studies become possible that were unthinkable 50 years ago. Be that as it may, computing power alone does not guarantee an intelligent and successful study design. A thorough knowledge of astrology in all its variants and aspects is just as important as astrologers being test participants who know their own practices self-reflexively and view them critically.

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### NOTES

- <sup>1</sup> Bender wrote in his obituary for Thomas Ring: “The evidence of astrological analyses with which Thomas Ring illuminated important situations in my life and in those close to me was one of the strongest motivations of my decision to turn to border areas [of psychology = parapsychology/anomalistics—G.M.]” (Bender, tr. by G.M.).

- <sup>2</sup> The item formulation is slightly different in the German version: “Do you believe that there is a connection between the star sign and the personality of the human being?” <https://yougov.de/news/2015/07/17/vor-allem-frauen-glauben-horoskope/>
- <sup>3</sup> Even the wording of the items is often highly problematic to inadequate—due to the ignorance of the subject under investigation that often can be found among the survey designers. For example, Campion (2012, passim, especially p. 87) has pointed out that the phrase “believe in astrology” can be misleading, since astrology is not a matter of faith for those who are more concerned with it and have had their own experiences with its practical application, but rather is linked to evidence experiences, i.e. its “functioning” is an empirical fact for them. A more appropriate formulation would be, for example, “consider it possible . . .” This problem does not only concern questions about astrology, but also about anomalistic/paranormal topics in general, where experiences of subjective evidence play a crucial role.
- <sup>4</sup> See Part 1 of this paper (Mayer, 2020, p. 787, Note 41) in this same journal issue. See also Campion (2012, Chapters 12 and 13).
- <sup>5</sup> The religious scholar Kirstine Munk describes astrology as “a ‘meta-language’ for the various contemporary divinatory techniques” (2017, p. 17) because of its multiple embedding in and combination with other divinatory systems.
- <sup>6</sup> What might be regarded as an analogical expression of magic is only valid in this sense as long as a kind of magical interaction is assumed. This is not the case for many contemporary astrologers, since they assume a correlation relationship. Accordingly, McRitchie (2006, pp. 6–7) speaks of a *cosmic symmetry* between the microcosmic and macrocosmic environments.
- <sup>7</sup> See Ertel (2011) and Ertel & Irving (1996) for an overview of Gauquelin’s findings, replications, and controversies about these findings.
- <sup>8</sup> Interspects are significant angles between the planet positions of two horoscopes.
- <sup>9</sup> Matching experiments can have a different distance from the direct

testing of the ABT: If the correct horoscope is to be selected for a person from a pair of horoscopes in which one has been created with the correct birth time and the other with a changed birth time, the proximity to the direct examination of the ABT is greater than with the matching task, for example, of horoscopes to certain professions.

- <sup>10</sup> For Thomas Ring's astrological anthropology, see Part 1 of this paper (preceding article). For the significance of the moment of birth in the view of revised astrology, see also Niehenke (1994, pp. 24–34).
- <sup>11</sup> Since this model does not assume a direct causal–physical influence of the planets on earthly events, but rather a correlative relationship, the skeptical argument that the physical (gravitational) forces are too weak to exert an effect due to the large astronomical distances is futile.
- <sup>12</sup> Thomas Ring (1972, p. 139) writes: “In general, astrology can only be spoken of as long as it starts from a measurable cosmic state of facts; this is precisely what distinguishes it from forms of manticism, of which one variation, ‘astromanticism,’ arbitrarily sets celestial symbols.” An example of such an astromantic card deck is *The Enchanted Astrologer* (Farber & Zerner, 2002), whose authors promise immediate “in-depth” answers to personal questions.
- <sup>13</sup> The fact that the technique of horary astrology is nevertheless not as simple as its basic structure seems to promise is due to various framework conditions and interpretation restrictions that must be observed. With the new complexity introduced, despite the relatively simple, unambiguous, and fixed basic structure, there are degrees of freedom of interpretation with which “wrong” answers can be justified.
- <sup>14</sup> In the *Dictionary of Gnosis & Western Esotericism* (Hanegraaff, 2006), the following definition is given: “Divination, in general, is the art of divining the past, present, and future by means of various techniques” (Charmasson, 2006, p. 313). However, this definition does not reference the sacred, otherworldly, or divine realm—Curry referred to this as “an ongoing dialogue with more-than-human agents” (Curry, 2010, pp. 114–115). There are useful subtypes of divination, e.g., the *divinatio naturalis* and the *divinatio artificiosa*

(Charmasson, 2006, p. 313). But for the purpose of this paper, a rather simple definition by Greer (2003, p. 134) captures the essence: “[Divination is] the art and science of obtaining information by occult means . . .”. “Occult means” directly references the paranormal or supernatural without being specific about ritual or tradition. What I call “pure divination” means a technique that mainly is based on the use of occult (= synchronistic, paranormal, supernatural) means and ideas and consists essentially of “an act of aleatory randomization” (Curry, 2010, p. 115). With regard to astrology, the astromanticism mentioned above falls in this category.

- <sup>15</sup> Dean et al. (2016) provide a critical overview of the state of research of empirical tests in astrology.
- <sup>16</sup> Stephen Braude, who is neither a skeptic nor an absolute believer in astrology, gives in the “Postscript” of his book *The Gold Leaf Lady and Other Parapsychological Investigations* an impressive example of extremely successful predictions by means of astrological prognosis (2007, pp. 153–175). However, the account is based on personal experiences with his wife Gina, a gifted astrologer, and does not refer to formal experiments. Although his wife has developed her own and apparently quite unique astrological technique that seems to allow such accurate predictions, he doubts that the success is due solely to astrological practice and considers substantial psi to be a decisive factor.
- <sup>17</sup> There is a constructivist secular interpretation of astrology as a “useful kind of fiction,” which also renounces the claim of objectivity of astrological laws, focuses on the counseling situation between astrologer and client, and sees in the work of the astrologer a kinship to that of an artist (Weidner, 2002). For criticism, see Mayer (2002).
- <sup>18</sup> In a similar sense, Sigmund Freud provides a respective example in his text “Psychoanalysis and Telepathy.” A “fortuneteller” visited by one of his patients predicted a very concrete event based on the date of birth of a person and related astrological calculations: “. . . next July or August this person would die of crab or oyster poisoning” (Freud, 1970, p. 61). With this prognosis she did not score a full hit because the person in question—the patient’s brother-in-law—had suffered



from crab poisoning nearly killing him a year earlier in August. Freud interpreted this as a case of telepathy and sees astrology in the following function:

. . . the purpose of the fortuneteller's astrological work was to divert her own intra-psychic forces, and to occupy them innocuously. This made it possible for her to become receptive and permeable to the impact of thought of others, and enabled her to become a genuine 'medium'. (ibid., p. 62)

Whether Freud's determination of the function of astrology is completely correct in this case is more doubtful. If we follow him on the assumption that conventional explanations are inadequate for this "almost hit," then it is likely that astrological reasoning would have given direction. For example, a difficult constellation involving Neptune ("poisonings") and the Sun could be interpreted as corresponding existential threats, which, due to the retrogression of Neptune, could also have been encountered in a similar way a year earlier. Freud, however, disagrees with that: "Let us not forget how many people are born on the same day. Is it conceivable that the community of fate which may be determined by the date of birth would include such details?" (Freud, 1970, p. 61). If interpreted favorably, we would be dealing here with a combination of astrological considerations and clairvoyance. The not-so-favorable interpretations are to be renounced at this point.

<sup>19</sup> In a sense, this is reminiscent of discussions in parapsychology, where the question of the validity of laboratory experiments concerning the occurrence of psi in the living world is also repeatedly discussed (e.g., Alvarado, 2019; Braude, 1986, pp. 1–58; Mayer & Schetsche, 2019a, 2019b).

<sup>20</sup> See part 1 of this article in this journal issue (Mayer, 2020:, p. 787, Note 41). One astrologer noted that in about a quarter of the initial astrological conversations, the demarcation between astrology and esotericism was discussed and that this was an important point for clients. One astrologer said, pointing in a similar direction: "Many (customers) have read something, recognized something of themselves." This individual reference to astrology is based on

objective facts that cannot be found, for example, in card reading—people feel that astrology is more complex and more serious than many other offers from the esoteric sector.

- <sup>21</sup> One can quite reliably draw conclusions about the underlying chart from written astrological expertise, even if no technical terms are used; it is also possible to program software that—with all the limitations—generates reasonably meaningful, and for an astrologer himself understandable in its contradictions, interpretation texts.
- <sup>22</sup> In the first phase after discovery and integration, however, other factors such as intuition and/or paranormal aspects play a role, such as with the naming of Pluto. The name was suggested by an eleven-year-old girl and then prevailed in the decision-making process (Rincon, 2006). In terms of the astrological significance later attributed to astrologers on the basis of their studies of horoscopes, it was a bull's-eye. See also <https://www.astro.com/astrowiki/en/Pluto> regarding the naming.
- <sup>23</sup> At least this should be the way of choice from a scientific perspective. In a preliminary remark to his description of the planet Pluto (♇), Ring writes in Volume 1 of his *Astrologische Menschenkunde*:

With an elemental force [Wesenskraft] that has only been in the sphere of investigation for about 20 years, much caution is required and no conclusive statement can be made. However, the orbital elements of ♇ are sufficiently known to be able to calculate its position in the charts of historical personalities. This shows an above-average frequency of emphasis, be it through ♇-position at one of the cardinal points of the sphere of interest, be it through a strong aspect to the main symbols of life [= planets]. Many traits of these personalities find a sufficient explanation only after ♇ is introduced in a provisionally hypothetical meaning, and this again leads to the observation of the living. The results are presented here as preliminary, stimulating further investigation. (Ring, 1956, p. 234, translation by the author G. M.)

Unfortunately, many astrology authors lack this appropriate caution nowadays (cf. Kelly, 1997, 2005).

- <sup>24</sup> Dean et al. (1998/1999) offer an excellent overview of such mechanisms related to astrology.

- <sup>25</sup> Lifeworld is a translation of the German sociological and philosophical term “Lebenswelt.” It refers to the world as it is experienced and culturally shared. In parapsychology, psi phenomena in lifeworld (spontaneous psi phenomena) are contrasted with psi phenomena elicited in the artificial situation of laboratory experimental research (cf. Mayer & Schetsche, 2012).
- <sup>26</sup> Kelly thereby draws on the work of the sociologist Wedow (1976).
- <sup>27</sup> Unfortunately, there was no formal publication of the results of this extensive investigation. The DFG final report and other documents can be found in the archive of the IGPP (signatures: E/20, 40/3, and E/23A). It was not until 1986 that Timm & Köberl published the re-analysis of this project in a scientific journal. Annoyingly, this significant finding is not reproduced in the volume *Tests of Astrology* by Dean et al. (2016), although the reference is mentioned. Instead, reference is made to an evaluation of the study by a Mr. Hoerner (1983), who, in clear deviation from Timm and Köberl and without naming any further details, comes to the result: “The result was just chance” (Dean et al., 2016, p. 420). Surprisingly, the authors seem to prefer the notes of a statistics student in a newsletter (*The Explorer*) to the thorough work of Timm and Köberl.
- <sup>28</sup> See the IGPP archive (signatures: E/20, 40/3 and E/23A).
- <sup>29</sup> See p. 766, and p. 782, Note 22 in Part 1 of this paper (Mayer, 2020) in this same journal issue.
- <sup>30</sup> The fifth astrologer of the “top group . . . , who had stood out from the total of well over one hundred” (Werthmann, 1971, p. 190) was Willy Probst from Graz, Austria, who also did graphology, but for whom I could not find any other information. Graphology was part of academic psychological diagnostics between 1950 and the beginning of the 1970s and has been offered as a compulsory course for psychology students at the Psychological Institute of the University of Freiburg since 1959 (Fahrenberg, 2017).
- <sup>31</sup> For criticism, see Ertel (2000). A result by Müller and Menzer (1993) also speaks against this thesis. The two authors had examined the birth charts of 1145 members of German dynasties for planetary

effects in the sense of Gauquelin—without being able to prove significant correlations. The authors saw an explanation for this in the fact that the sample fulfilled only the selection criteria of Gauquelin for celebrity to a limited extent. But they found a statistically significant correlation concerning a subgroup of early deceased with a maximum age of 15 months. At birth, Saturn was often found in the so-called “G-zones,” i.e. in the 12th house at the *ascendant* and in the 9th house at the *medium coeli*, which was appropriate from an astrological perspective (however, this is a post hoc finding that would require replication with other data). Especially the classical attribution as “bringer of misfortune” does not make it plausible that parents would put Saturn in a prominent position by “birth time tampering” (see also McRitchie, 2016).

- <sup>32</sup> In her study on the relationship between solar transits and occupational accidents, Klein took, as an inclusion criterion, a disability of at least 3 months, which is a fairly reliable indicator of the severity of the event (Klein, 1993). The correlation study revealed highly significant correlations; see also the critical commentary by Dean et al. (2016, pp. 224–225), which refers, among other things, to an unsuccessful replication in Sweden but which ignores an important aspect (McRitchie, 2013).
- <sup>33</sup> In Steffert’s (1983) study, astrologers were able to distinguish the charts of happy couples from those of unhappy ones in a matching experiment. Shanks & Steffert (1984) found in happy couples the moon in so-called “sensitive zones” (according to the Gauquelin system) more frequently than simply by random chance, in which they differed from the unhappy couples.
- <sup>34</sup> Cf. McRitchie (2016).
- <sup>35</sup> This refers to simple descriptions of zodiac signs that were found for many years on sugar cube packets in cafés in Germany.
- <sup>36</sup> Klein (1988) conducted a matching experiment in which participants were asked to rank five astrology-based descriptions according to the degree of coherence with their actual partner experience. Many excused their delayed return by saying that the task was too diffi-

cult due to the great similarity between the five descriptions—a clear indication of the language challenge involved in writing such texts against a background of maximum distinctiveness.

<sup>37</sup> Notorious in this context is the “Statement of 186 leading scientists against astrology” initiated by skeptics and published in 1975 in the journal *The Humanist* (cf. Feyerabend, 1990, pp. 181–189).

<sup>38</sup> One considerable drop of bitterness, however, remains: One is confronted again and again with the skeptical “bias” of these works, which goes beyond a justified and scientifically founded critical attitude. To give just one example, one wonders why Kelly—in the extended version of his 1997 essay (“Modern Astrology: A Critique”), which he published online under the title “The Concepts of Modern Astrology: A Critique”—unexpectedly cites a *theological* counterargument to criticize the astrological concept of a “true identity” expressed by the horoscope:

The notion of ‘our true identity’ for example, is one which many empiricists, post-modernist philosophers, and Buddhists would consider problematic. The Buddhists consider talk of an essential core of one’s being illusory, while post-modernists would consider such talk of ‘our true identities’ a modernist illusion. (Kelly, 2005)

See also McRitchie’s critique of Dean and Kelly’s paper “Is Astrology Relevant to Consciousness and Psi?” (2003), in which he addresses unfounded accusations, over-generalizations, and exaggerated assertions to the authors (McRitchie, 2016).

<sup>39</sup> However, one does not have to support his conclusions—at least not from the perspective of a revised astrology that does not take the concretions but the structure of meaning as the core of a statement. His findings do not necessarily contradict this. This is not the place to discuss the possible compatibility of Gauquelin’s findings with “traditional” astrological symbolism. It should only be pointed out that the characteristic of the *celebrity* of the persons for whom Gauquelin has found his significant correlations could play a decisive role in understanding the unusual house positions (the so-called Gauquelin sectors).

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## ESSAY REVIEW

### For the Good of Your Health, Read This Book

**Danger Within Us: America's Untested, Unregulated Medical Device Industry and One Man's Battle to Survive It** by Jeanne Lenzer. Little, Brown, 2017. 329 pp. \$28 (hardcover). ISBN 978-0316343763.

#### REVIEWED BY HENRY H. BAUER

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Everyone needs to read this book—everyone who may ever be in need of any sort of healthcare in the United States needs to read this book. Doctors should read this book; nurses should read this book; politicians should read this book; lawyers and prosecutors and district attorneys should read this book.

The reason is that healthcare in the United States is the most expensive and least efficient in the developed world, costing twice as much but delivering worse outcomes (on longevity, for instance) than in almost every other developed nation (pp. 12 ff., 58, 59). Dozens of books<sup>1</sup> and hundreds of articles by well-informed insiders have pointed to flaws in the delivery of healthcare. The circumstances are so non-planned and dysfunctional that it would even be misleading to speak of a healthcare “system.”

*Danger Within Us* touches on every salient aspect of the dysfunctionality. If you read only one book about what is wrong with modern American medicine, this is the book to read. I marked so many places as worth citing emphatically that it becomes rather easy to give a synopsis of this review: Everyone should read the whole book.

The problems that plague the medical device industry reveal a troubling pattern of financial kickbacks, perverse incentives, and institutional conflicts that too often give short shrift to the needs and safety of patients. (p. 201)

I was beginning to feel as if I were in a Kafka novel. (p. 187)

The same problems plague everything connected with healthcare in the United States.

The explicit focus in this book is on medical devices that are implanted, for example artificial joints and cardiac pacemakers; and a continuing thread tells the story of one individual whose implanted device came very close to killing him. But in recounting this story, and in discussing issues that affect all types of implanted devices, Jeanne Lenzer touches on all of the things that need to be changed, to be fixed, in current American medical practices.

I read the book just a few pages at a time because the anecdotes are so horrifying that my blood pressure would rise significantly. But these are not “just anecdotes,” they are cogent illustrations of the general state of affairs, which is reliably documented in nearly 400 source notes—as indeed one has come to expect from this author. Lenzer has published many important pieces of investigative medical journalism, in particular in *BMJ* (*British Medical Journal*). With most nonfiction I often feel it necessary to check the author’s statements against cited references or other publications on the topic, but when I read something by Lenzer, I am saved that extra effort because, after checking in earlier pieces by her, I have found her to be scrupulously conscientious and trustworthy.

Perhaps the prime immediate culprit in much of the dysfunctionality of present-day practices is the Food and Drug Administration (FDA). For one thing, its databases of adverse events and deaths are not reliable (pp. 112–114). For another, it accepts results from clinical trials paid for by manufacturers without examining whether the trials were performed properly. Among the consequences is that the number of recalls of medical devices increased from 8 in 2003 to 176 in 2013 (p. 123)—and every recall comes only after a significant number of patients have experienced significant harm. The delay is owing in part to the fact that the FDA does not enforce what are purportedly *mandatory*

requirements for monitoring the performances of devices and drugs after they have been approved and marketed.

All too often, recommendations from the FDA's technical staff not to approve something are overruled by management as a result of political influence—what we would unhesitatingly label sheer corruption if it occurred in other countries. Up to 1968, the FDA Commissioner was a civil servant, but since then (courtesy of the Nixon Administration) it has been a political appointment. In effect, the FDA now serves the interests of manufacturers more than of the public. The revolving door between industry and government agencies needs to be closed. Conflicts of interest and political interference have corrupted fatally the work of this agency (p. 130 ff.). That manufacturers pay the FDA the costs connected with approval contributes to the problem; and not only with the FDA: The Centers for Disease Control & Prevention (CDC) campaigned to promote use of Tamiflu, costs of the campaign being underwritten by the drug's manufacturer, Roche (p. 104). In 2020, the CDC was vigorously promoting HPV vaccination, whose anti-cancer efficacy has never been established and whose damaging side effects are (so far) more numerous than for any other vaccine (Holland & Rosenberg, 2018).

Misguided reliance on the FDA (and the CDC, and other official sources) causes practicing physicians and surgeons not only to harm patients but also sometimes themselves, as with the orthopedic surgeon who suffered badly after being implanted with a metal-on-metal joint that he had come to believe was the best available (191 ff.)—based on his sources of information, the FDA and the sales representatives of the device's manufacturer. He had for some time implanted the same device in patients without suspecting harm—because the harm (metallosis, tissue damage from dissolving metal) comes after an appreciable period of time and was known only to the manufacturer.

Laws concerning healthcare are typically written by lobbyists for manufacturers and rubber-stamped by the Congress—people who ostensibly originate the legislation. One law, for example, prevents people injured by a medical device from suing the manufacturer if the device had been approved by the FDA (p. 117); and misguided approvals are rife. Many individuals have incurred sometimes fatal damage from many devices: artificial cartilage (p. 138 ff.), artificial metal-on-metal

hips (p. 192 ff.), birth-control electrical devices (p. 110) and “shields” (p. 119), defibrillators, stents, vagus-nerve stimulators, and more.

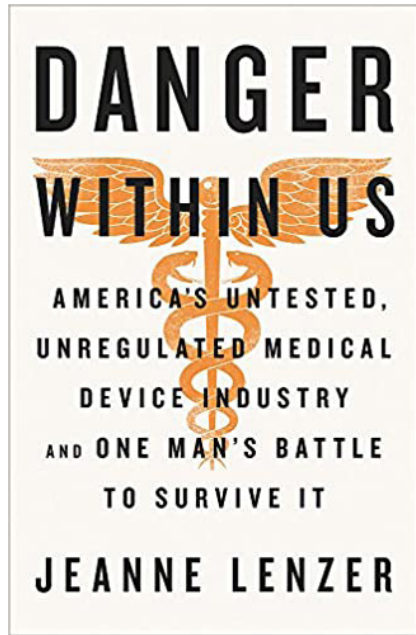
A common strategy used by manufacturers is to create foundations or groups that claim to speak on behalf of the interests of patients when they are actually mouthpieces for the manufacturers (pp. 157–158); and the drug companies use these deceptive mouthpieces when petitioning the FDA for approval or when defending lawsuits or trying to spin the media.

The lack of careful regulation, and its corruption by political influences, have led to dishonest practices becoming standard procedure. Too many clinical trials, paid for and controlled by drug companies, are deliberately corrupted, which is easily done in a variety of ways: inappropriate controls, inappropriate sampling of patient and control populations, inappropriate statistical analyses; by 2014, 86% of clinical trials were being funded by industry (p. 238). Sales representatives, under explicit or implicit direction by their company, routinely break the law by encouraging doctors to prescribe drugs or devices for off-label uses.<sup>2</sup> Almost every major drug and medical device company has been caught in at least one scandal, and massive fines, often billions of dollars, have become an accepted part of their normal cost of doing business (p. 17). The detailed stories of Cyberonics (*passim*), Medtronic, and Johnson & Johnson (p. 146 ff.) illustrate that merely finding companies at fault and imposing fines does not stop the criminal practices; instead, decisionmakers in the companies need to suffer the consequences *personally*.

There exists, in other words, a little-recognized *medical–industrial complex* no less dangerous to society at large than is the well-recognized military–industrial complex. Neither has been successfully tamed or harnessed, and the medical one is daily damaging a significant number of people.

Regulation is hindered not only by practical considerations of political influence and unbridled greed but also by the inevitable lack of certainty in trying to understand human physiology and behavior. A fundamental difficulty is that individuals react in different ways to a given stimulus, and what may help one person at a given time is not necessarily the best general treatment for everyone. So it can happen that treatments long regarded as standard and routine may actually do

more damage overall than could be justified by their benefits. Lenzer learned this at first hand when she worked as a physician assistant: Premature ventricular contractions (PVCs) had been treated routinely by certain drugs, and many physicians had seen, as Lenzer had herself, that these drugs could very effectively prevent atrial fibrillation. So Lenzer was “devastated,” she writes (p. 5), when finally a properly large and controlled clinical trial found that these drugs could indeed prevent fibrillation *but they also increase mortality* by a significant amount (3.6-fold).



The not-well-known, disconcerting, fact is that medical devices—and also drugs—“can sometimes cause the very symptoms they are intended to cure” (p. 6). The best of intentions may also bring unintended harmful consequences; thus the 1980 Bayh–Dole Act (p. 238 ff.) was intended to encourage technology transfer from academe to the marketplace for better and more rapid availability of medical advances and to allow academe to share in the profits from its discoveries; instead, it has led to pervasive conflicts of interest, institutional and personal, and the inevitably associated corruption.

An inherent barrier to achieving certainty in medicine is that experiments or observations cannot always be carried on long enough for outcomes to become obvious. Therefore, clinical trials very often measure only so-called *surrogate markers* that are taken to be satisfactory predictors of outcomes; for instance, blood pressure as one indicator of cardiovascular disease. All too often, however, surrogate markers can be misleading,<sup>3</sup> for example with stents (p. 77 ff.). A surrogate marker can make a device seem beneficial even when it actually causes harm (p. 187).

The problem of getting reliable information about medical

treatments is owing in part to randomness because many variables usually contribute to any particular state of illness or health; any observation might be highly favorable (or unfavorable) purely by chance, but eventually, as in a properly long trial, such misleading outliers will regress to the mean, as is well known to professional statisticians but not necessarily to others. Again, the placebo effect<sup>4</sup> (Harrington, 1997; Shapiro & Shapiro, 1997) can cause patients to deliver misleading reports about changes in their symptoms. A common danger is that physicians and nurses are naturally predisposed to believe that the remedies they prescribe and supervise can only be of benefit; so when a drug or a device causes something that mimics the ailment being treated, that harmful side effect is rarely recognized (p. 173).

Incompetent or deliberately misleading statistical reports are rife in medical matters. It is not usually emphasized, for example, that statistical significance is an arbitrary criterion and does not constitute proof of anything. The most meaningful measure is very often all-cause morbidity or mortality, but that is usually not reported—because to do so would reveal the tested treatment as having little or no benefit. It is not mentioned in this book, but the most useful data from a patient's point of view are NNH and NNT: number of patients needed to be treated so that one of them is likely to be harmed and number of patients needed to be treated so that one is likely to benefit; one wants NNH to be much larger than NNT.

Revealing scandalous corruption and incompetence is not this book's only service to readers, it also offers much intrinsically interesting information: about the origin and development of the FDA (p. 101 ff.), for instance. And that there are risks that few people would conceive of: Some implanted medical devices—pacemakers, for example—are conveniently fitted with Wi-Fi capability so they can be monitored and programmed without surgery; but such devices are thereby also, like everything on the Internet, at the mercy of hackers. And how would you know, without reading this book, that intractable hiccups can be cured by wiggling a finger in the rectum (p. 72)?

Extremely useful also are pages 284–289 listing *industry-independent* organizations, publications, and patient advocacy and support groups; as well as for journalists in particular, a periodically



updated list, available online, of international *industry-independent experts*.

The concluding chapter of *Danger Within Us* has the title, “What is to be done?” Unfortunately, it gives little ground for optimism. Lenzer remarks on growing grassroots initiatives such as the Right Care Alliance, and certainly this is grounds for optimism—albeit only in the long run. She is also quite right that the United States needs a single-payer health system; and that the patent system needs to be reformed; and that the FDA needs to do what it is charged to do but presently does not, namely, approve new or modified medical devices (and of course drugs, too) only after they have been found to be both safe and effective in clinical trials administered by properly conscientious and independent investigators. The problem is that none of those things are likely to happen until there is thoroughgoing reform of the way in which political campaigns are being financed; under current circumstances, everything to do with healthcare is controlled by the pharmaceutical industry.

Lenzer understands that perfectly well: “There is no conspiracy in any of this—just a confluence of interests that stretches across the entire healthcare industry” (p. 225).

We are fortunate to have any number of competent and idealistic doctors, nurses, and aides; but they are hindered in caring for their clients and patients by restrictions imposed by the for-profit institutions that dominate all healthcare. Pharmaceutical companies are at the forefront in putting profits ahead of everything else, but for-profit hospitals and purportedly nonprofit healthcare systems are not far behind (p. 14) since practices are dominated by the for-profit institutions, and no organization can long exist if it loses money all the time. That is why a single-payer system is needed. Maintaining national defense, an inevitably very expensive system of armed forces, requires a national single-payer system because even the most efficient competitive free market could not be relied on to do the job; so too with maintaining the nation’s health. Both are essential for the well-being of every individual in the nation and neither could be supplied equitably and reliably through a private, free-market system.

## NOTES

- <sup>1</sup> An occasionally updated bibliography of almost 100 books and a few salient articles are available at <https://mega.nz/file/ZLhyGSxY#tzwneBEyHdMpDU57LceJ95MJerV7BUykQ3BpFRya6vl>
- <sup>2</sup> It is legal *for doctors* to prescribe *for any condition at all* any drug or device once it has been FDA-approved *for anything*. But it is illegal to advertise or promote a drug or device for off-label use.
- <sup>3</sup> See two reports from the Institute of Medicine: *Evaluation of Biomarkers and Surrogate Endpoints in Chronic Disease* and *Perspectives on Biomarker and Surrogate Endpoint Evaluation: Discussion Forum Summary*, National Academies Press, 2010 and 2011.
- <sup>4</sup> One of the remarkable characteristics of the placebo effect is that it works even when one knows that a placebo is being administered; presumably the subconscious mind does its powerful work in any case. For several decades I had a wonderfully empathetic physician; it had become a happily shared insight that he exerted on me a strong placebo effect: My belief in his expert care caused me to feel better after my visit, no matter how physically ill I might nevertheless be.

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## ESSAY REVIEW

### Crackpot Claims Raise Important Issues

**Plague of Corruption: Restoring Faith in the Promise of Science** by Judy Mikovits and Kent Heckenlively, Foreword by Robert F. Kennedy, Jr. Skyhorse/Children's Health Defense, 2020. 272 pp. \$26.99 (hardcover), \$17.99 (Kindle). ISBN 978-1-5107-5224-5; 978-1-5107-5225-2 (ebook).

**Plague: One Scientist's Intrepid Search for the Truth about Human Retroviruses and Chronic Fatigue Syndrome (ME/CFS), Autism, and Other Diseases** by Kent Heckenlively and Judy Mikovits. Skyhorse, 2014. 464 pp. \$26.95 (hardcover), \$1.99 (Kindle). ISBN: 978-1-6263-6565-0.

#### REVIEWED BY HENRY H. BAUER

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These two books promptly became best sellers on Amazon after one of the authors, Judy Mikovits, had claimed in a video<sup>1</sup> that the CoVID-19 pandemic had been planned by a cabal of billionaires (Bill Gates and others) to create a market for vaccines;<sup>2</sup> that Anthony Fauci was responsible for millions of deaths in the early years of HIV/AIDS; that some vaccines might indeed trigger autism; and that contaminant viruses make the blood supply dangerous. The video went viral on the Internet and social media before being removed from the major platforms.<sup>3</sup>

These books include the same claims, and more, but they are substantively disappointing in failing to offer convincing evidence for the assertions; they are little more than vehicles for Mikovits to re-argue

the validity of her researches, in such comprehensive and technical detail that few readers will find them interesting. It is never defined, what exactly the “plague” is; presumably, that Mikovits’s scientific claims are not sufficiently appreciated.

The most controversial claim may be that Chronic Fatigue Syndrome or Myalgic Encephalomyelitis (CFS/ME, sometimes CFS/ME/FM to include fibromyalgia) is caused by an infectious retrovirus (RNA virus), specifically XMRV; that some vaccines are dangerous through contamination by animal retroviruses, since animal-cell cultures are used in making vaccines—XMRV, a mouse retrovirus, stemming from the use of mouse tissues; that autism, too, has a viral cause and therefore may follow vaccination with contaminated vaccine; and that the nation’s blood supply may have become contaminated. The 2014 book claims further that evidence linking autism with MMR (mumps, measles, rubella) vaccination had been suppressed by the Centers for Disease Control and Prevention (CDC); and that two decades earlier the CDC had suppressed the evidence for a viral cause of CFS/ME.

Many critiques of these claims have appeared on the Internet and elsewhere; for a comprehensive debunking of the claims as made specifically in the *Plandemic* video, see Enserink and Cohen (2020). The claim of finding XMRV in CFS/ME sufferers could not be replicated and eventually the original paper was withdrawn by *Science*, although Mikovits continues to argue for something closely related to XMRV as the cause of CFS.

## CONTENTS OF THE BOOKS

The books read like first-hand accounts by Mikovits. The 2014 book has long paraphrases from *Osler’s Web* (Johnson, 1996), a comprehensive discussion of CFS by a woman who has herself long suffered from it; the book

documents the sneering opposition of both the Centers for Disease Control and the National Institutes of Health to recognizing CFS as a genuine disease, the hands-off attitude toward it of several leading medical journals, and the obloquy many physicians heaped on it. (Beatty, 1996)

Outbreaks of CFS in the 1980s led to Mikovits becoming Research Director at the startup Whittemore Peterson Institute for Neuro-Immune Disease (WPI), established at the University of Nevada (Reno) by the parents of a daughter long suffering from CFS. Earlier, Mikovits had worked for some 20 years on HIV/AIDS at the National Cancer Institute, then briefly at a couple of other places.

After a disagreement at WPI, Mikovits was fired, and she gives a detailed account of being arrested and spending five days in jail after allegedly absconding with her research notebooks.

The 2014 book has excruciatingly detailed descriptions of how Mikovits did everything right in her work and in her dispute with WPI; and argues that any blame for mistakes re XMRV should be placed not on Mikovits but on one of her co-authors, an argument repeated at length in the 2020 volume.

Unfortunately, the accounts in these books are far from trustworthy. For instance, Mikovits's assistant at WPI had signed an affidavit that he had taken the notebooks to Mikovits at her request,<sup>4</sup> something Mikovits continues to deny. The 2014 book even disclaims reliability: "Neither the authors nor the publisher claims [sic] that the conversations are accurately recorded. . . . Many of the primary documents supporting the information found in this book are available at [www.plaguethebook.com](http://www.plaguethebook.com)"; however, I found no supporting documents there, and my query to the publisher about that has not been answered.

Mikovits is even unreliable about HIV, asserting that it had been isolated "from an actual human being," and that Montagnier had isolated it (Heckenlively & Mikovits, 2014, Chapter 19), when in fact no one has done that;<sup>5</sup> and she calls the Western Blot "the gold standard of molecular virology," even though it was dropped from use (in the UK) for its unreliability as an HIV test.





Another less-than-accurate claim is Mikovits' assertion that as the principal investigator on the pertinent grants she had the right, indeed the duty, to keep possession of the notebooks. However, federal regulations concerning grants require that the institution where the principal investigator held a grant would have needed to agree,<sup>6</sup> in this case the Whittemore Peterson Institute. More about this below, in the section about the circumstances of doing research in the 21<sup>st</sup> century.

The 2020 book begins with a lengthy foreword by Robert F. Kennedy, Jr., which unfortunately assumes Mikovits's claims to be true. Nevertheless, Kennedy is sound in citing many illustrations of "the 'Simmelweis reflex' . . . the knee-jerk revulsion with which the press, the medical and scientific community, and allied financial interests greet new scientific evidence that contradicts an established scientific paradigm" (Mikovits & Heckenlively, 2020, p. XIII): Herbert Needleman, hounded for drawing attention to the (later accepted as real) dangers from lead in the environment, in particular leaded gasoline; Rachel Carson (DDT killing wildlife); Alice Stewart (child cancers caused by X-raying pregnant women); Bernice Eddy (polio outbreak and cancers caused by defective vaccines); John Anthony Morris (inefficacy of flu vaccines, dangers of swine-flu vaccine); Gary Goldman (danger of chickenpox and shingles caused by vaccine); Peter Gøtzsche, co-founder of the Cochrane Collaboration, ousted for pointing to adverse events from HPV vaccine.

The remainder of the 2020 book, as the earlier 2014 one, argues at length that Mikovits was and is right and everyone else wrong. As one review put it, "*Plague of Corruption* is, essentially, an act of self-hagiography . . . [comparing] Mikovits . . . to, among others, Galileo, Martin Luther King Jr., and Thomas Jefferson" (Dickson, 2020).

Although the books will be interesting reading only for those who

want the details of Mikovits's self-justifications, issues are raised that ought to concern everyone: about HIV/AIDS and viruses and vaccines; that contemporary medicine seems helpless over CFS/ME, autism, and several other chronic ailments; and the circumstances facing researchers in the 21<sup>st</sup> century.

### **CFS/ME AND OTHER ILL-DEFINED BUT VERY REAL CHRONIC AILMENTS**

CFS/ME is highly debilitating, and present-day medicine does not understand it: It is

a complicated disorder characterized by extreme fatigue that can't be explained by any underlying medical condition. The fatigue may worsen with physical or mental activity, but doesn't improve with rest. . . . The cause of chronic fatigue syndrome is unknown, although there are many theories—ranging from viral infections to psychological stress. Some experts believe chronic fatigue syndrome might be triggered by a combination of factors. . . . There's no single test to confirm a diagnosis of chronic fatigue syndrome. You may need a variety of medical tests to rule out other health problems that have similar symptoms. Treatment for chronic fatigue syndrome focuses on symptom relief.<sup>7</sup>

And those symptoms are anything but specific or idiosyncratic; they **may but need not** include, as well as fatigue: loss of memory or concentration; sore throat; enlarged lymph nodes; unexplained muscle or joint pain; headaches; unrefreshing sleep; extreme and continuing exhaustion after physical or mental exercise.

Autism, or autism spectrum disorder, has a similarly indefinite set of symptoms that do not allow for definitive, objective, diagnosis. So, too, with Attention-Deficit Disorder (ADHD),<sup>8</sup> irritable-bowel syndrome, chronic Lyme disease, and more (Bauer, 2014).

The lack of objective markers and definitive descriptions ensures that individuals who suffer such conditions are unlikely to get useful help from any medical practitioner or specialist. Not infrequently the sufferers are treated as though their ailment were psychological or psychosomatic. Quack offers of help and remedies flourish. Groups of sufferers and their relatives form organizations for mutual support and

to campaign for research. Something similar happens with ailments so rare and obscure that most physicians have no knowledge of them. The daughter of a friend of this reviewer, a highly successful lawyer suddenly struck by seizures, lack of energy, and inability to work, spent several years seeking help before *through personal research* discovering that she has Hashimoto's Encephalopathy (Nelson et al., 2013); again, my step-grand-daughter was diagnosed eventually by her parents, not by doctors, as having PANDAS—Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections.

Could the several ill-defined but real chronic illnesses have a common cause? The multitude of possible symptoms, neither necessary nor sufficient, and the alleged associations with a number of possible triggering stimuli, indicates a systemic condition that can be set off by a variety of happenings; perhaps it is the *cell danger response* (CDR), which can affect several or even all physiological functions (Naviaux, 2020). This suggestion also offers a plausible explanation for why several of these illnesses—autism, for one—seem (but perhaps only seem [Wright, 2017]) to have become more common in recent decades.

Since CFS/ME frequently occurs in geographic clusters and discrete outbreaks, one plausible trigger is some infectious agent; a variety of studies have suggested several without agreement following on any of them, as with Mikovits's claim that it is a mouse retrovirus, XMRV or closely related to it.

### MIKOVITS, XMRV, AND THE LEGACY OF HIV/AIDS

Mikovits graduated as a major in chemistry and began work as a technician in Robert Gallo's laboratory at the National Cancer Institute just as AIDS was starting to be of concern. Much or even all of what has gone wrong for Mikovits can rather plausibly be blamed on her having learned virology under Gallo's influence just as he and others were going badly wrong over HIV and AIDS. That Gallo is not a competent researcher was widely known long ago, albeit only within the profession (Mullis, 1998, p. 176); nor was his reputation one of honesty or integrity: He had actually been found guilty of scientific misconduct over HIV (Cohen, 1993; Crewdson, 2002).

Before HIV, viruses had been characterized after isolation of pure viral particles (virions) by some combination of ultra-filtration and ultra-



centrifugation, as verified by electron microscopy. But the claimed and accepted discovery of HIV was based purely on indirect indications: first, the detection of reverse transcriptase, which is pervasively present in mammalian cells but was thought at the time to depend on the presence of a retrovirus; second, antibody tests developed on non-purified “isolates” (Bauer, 2007, p. 92 ff.). Subsequently, purportedly quantitative measurements of HIV, the so-called viral load, have been based on PCR (polymerase chain reaction), which is universally used to detect DNA or RNA. However, it does not find actual virions of HIV, the virus itself, but only pieces of DNA or RNA presumed to be HIV-specific.

Quite appropriately, therefore, the HIV-test kits warn that they are not valid for diagnosis of infection by HIV: ***a warning that has been ignored in practice, globally, for more than three decades.***

Those faulty bases for claiming detection and identification of retroviruses have become standard. No wonder, then, that claims like Mikovits’s could not be replicated by others, or even by herself in later work. Even as some publications (Arias & Fan, 2014; Panelli et al., 2017) continue to point out that PCR is unreliable for detecting or identifying XMRV, for example, the practice continues; major journals publish peer-reviewed articles in which PCR was applied on unpurified “isolates.” PCR could become reliable only if pure virions of the virus in question had first been isolated and then their genomes identified to find RNA or corresponding DNA sequences specific to that virus. Instead, PCR continues to be used on unpurified mixtures to the extent of even claiming “whole-genome-sequencing.”

Controversies over viruses will continue inevitably until the methodology for isolating and identifying becomes reliable. In the meantime, there will continue to be claims and counterclaims based on flawed techniques: that a mouse virus, XMRV, is the cause of prostate cancer (Urisman et al., 2006) and CFS/ME (Lombardi et al., 2009); no, it isn’t (Simmons et al., 2011).

That viruses remain poorly understood (Raoult, 2014) is illustrated by the discovery less than two decades ago of viruses much larger than viruses were supposed to be (La Scola et al., 2003); and that these “giant” viruses can be themselves infected by smaller viruses (La Scola et al., 2008).

The terrible legacy of “HIV” is not only that unreliable, misleading methods now seem to be an integral part of virology; it has also entrenched the concept of antiretroviral drugs, which are invariably and inevitably highly toxic since they target not only reactions that facilitate viral replication but are also reactions that mammalian cells use in their ordinary activities.

The evidence is quite conclusive that HIV had nothing to do with AIDS,<sup>9</sup> and it is clear how the mistake came about and why it persists (Bauer, 2007). Mullis (1998, Chapter 18) has recorded that no one, including the discoverers of HIV, could cite a published primary source proving that AIDS is caused by HIV. The most primary source reported detecting (of course by faulty and unreliable methods) HIV in “18 of 21 patients with pre-AIDS . . . [and] 26 of 72 adult and juvenile patients with AIDS” (Gallo et al., 1984). Similarly, Mikovits had claimed XMRV as a cause because it was present in 2/3 of pertinent cases. That does not make it a *necessary* cause; and to show that it is a partial, occasionally contributory cause, the mechanism by which it produces the claimed effect would need to be identified. With HIV, after a quarter of a century, it remains a mystery how it is supposed to accomplish destruction of the immune system; in the case of XMRV, no mechanism was even proposed.

The assumption that association equals causation is another sad legacy of HIV/AIDS, though it is common enough, sadly, in just about all contemporary medicine.

### SCIENTIFIC RESEARCH IN THE 21<sup>st</sup> CENTURY

Mikovits spent several days in jail over a dispute about the ownership of *her* research notebooks. That points to circumstances in essentially all research nowadays: Researchers do not own the products of their own work.

Since the increasingly great resources needed for research are provided by a government agency or a private foundation or an academic institution, the funding source can and usually does insist on ownership rights in the products of the research. Quite a little industry has grown up about the apportioning of ownership rights in “intellectual property,” even though the only *intellectual* input comes from the researchers.

The extent to which the researchers benefit from what the research has produced depends on prior agreements. Kary Mullis won a Nobel Prize for his invention of the polymerase chain reaction (PCR), but it was the commercial company for which he had worked at the time that profited from patenting the discovery, which gave Mullis himself an almost insulting token only (Mullis, 1998, p. 11). Academic institutions may not behave any more appropriately than do commercial enterprises. Anthony Linnane, FRS, FAA (Nagley, 2018), had established a Center for Molecular Biology at Monash University in Australia through raising large sums of money from outside sources. When he retired from his academic position and wished to move the Center to a different location, Monash University insisted that everything in the Center was owned by the University. Linnane was successful in disputing the University's claim in a civil court, but I am unaware of any comparable such success by an individual researcher in Australia or elsewhere. When I moved from the University of Kentucky, I wanted to take with me a useful little gadget bought under a grant that I had been awarded as Principal Investigator, and the head of my Department agreed, but the bureaucrat in charge of the university's equipment inventory did not. The Attorney General of Virginia tried in court to have Michael Mann, former faculty member at the University of Virginia, produce his research notes about climate change for scrutiny. Even worse have been several cases where academic researchers obtained results displeasing to their commercial sponsors who tried, sometimes successfully, to prevent publication of the research results.

The conventional wisdom continues to think of scientists as independent intellectual entrepreneurs, but that view is badly outdated. It was only up to about WWII that science was something like a cottage industry of voluntarily cooperating, independent, largely disinterested ivory-tower intellectual entrepreneurs, where science was free to do its own thing, namely the unfettered seeking of truth about the natural world. Nowadays it is a bureaucratic corporate–industry–government behemoth, with science pervasively co-opted by outside interests that pay for and thereby control the choices of research projects and the decisions of what to publish and what not to make public (Bauer, 2017). Researchers nowadays get the opportunity to do their work only at the expense of losing ownership in the resulting intellectual property; what

part of the benefits from that property they later enjoy depends on negotiations with those who provide the resources and whose power is dominant. This seems quite analogous to the circumstances of crofters in the old days in the Scottish Highlands, or of sharecroppers in the old days in the American South. Perhaps the scientific community should try to establish appropriate guidelines for what rights researchers should have as to publication of their work and participation in worldly material profits resulting from their efforts. Presumably the laborer is worthy of his hire, after all.

## NOTES

- <sup>1</sup> *Plandemic*. <https://newyorkcityguns.com/watch-the-banned-video-plandemic/>
- <sup>2</sup> Search “Event 2021” on Google for this conspiracy theory.
- <sup>3</sup> Wong, Q., & Solsman, J. E. (2020, May 8). Facebook, YouTube and Twitter struggle with viral Plandemic conspiracy video. c/net. <https://www.cnet.com/news/facebook-youtube-twitter-viral-plandemic-conspiracy-video/>
- <sup>4</sup> ‘Plandemic’: Was Judy Mikovits arrested without a warrant and jailed without charges? <https://www.snopes.com/fact-check/plandemic-mikovits-arrest/>
- <sup>5</sup> The case against HIV. <http://thecaseagainsthiv.net>, section 3.1.3
- <sup>6</sup> NIH: Change of recipient organization (Transfers). <https://www.niams.nih.gov/grants-funding/administering-grant/change-grantee-institution-transfers>
- <sup>7</sup> Mayo Clinic: Chronic Fatigue Syndrome. <https://www.mayoclinic.org/diseases-conditions/chronic-fatigue-syndrome/symptoms-causes/syc-20360490>
- <sup>8</sup> ADHD Rating Scale-IV (ADHD-RS). <https://www.psychcongress.com/saundras-corner/scales-screeners/adhd/adhd-rating-scale-iv-adhd-rs>
- <sup>9</sup> The case against HIV. <http://thecaseagainsthiv.net>

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## ESSAY REVIEW

### **A History of the (Attempted) Institutionalization of Parapsychology**

**Okkultismus im Gehäuse. Institutionalisierungen der Parapsychologie im 20. Jahrhundert im internationalen Vergleich** [Occultism in Housings. Institutionalizing Parapsychology in the 20th Century, an International Comparison] edited by Anna Lux and Sylvia Paletschek. Walter de Gruyter, 2016. 433 pp. ISBN 978-3-11-046376-7.

#### **REVIEWED BY MICHAEL NAHM**

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In addition to an introduction, the book contains 14 chapters. Most of them represent elaborated text versions of contributions that were presented by the authors at a (nearly) eponymous conference held in Freiburg, Germany, on October 17, 2014. As the book title announces, the chapter authors trace the development of parapsychological research in different countries. Usually they focus on the more or usually less successful attempts to academicize and institutionalize parapsychology as a legitimate scientific discipline, but sometimes they also cover related aspects. The chapters include historical parapsychological treatises for Germany (Ulrich Linse, Anna Lux, Uwe Schellinger, Martin Schneider, Bernd Wedemeyer-Kolwe) including the German Democratic Republic (GDR; East Germany) (Andreas Anton, Ina Schmied-Knittel, Michael Schetsche), France (Renaud Evrard), Great Britain (Elizabeth Valentine), Hungary (Júlia Gyimesi), The Netherlands (Ingrid Kloosterman), Russia in the Soviet and post-Soviet periods/areas (Birgit Menzel), and the US (Eberhard Bauer, Anna Lux). The four chapters covering France, Great

Britain, Hungary, and The Netherlands are written in English, the others in German. In the following, I will briefly touch upon the topics I found most interesting.

Anna Lux from the University in Freiburg, Germany, identified several characteristic aspects of academic parapsychological work in Germany and compared them with those in the US, which took place at about the same time and were more strongly focused on the experimental paradigm. She shows how different social circumstances and also private predilections of the main actors involved resulted in different developments. This also applies to the fate of parapsychology in the other countries mentioned, which is surprisingly multifaceted: While in The Netherlands the situation with official professorships at the University of Utrecht can be compared most closely to that of Germany where Hans Bender (1907–1991) held a professorship at the University of Freiburg, the academization of parapsychology in Hungary was hindered by an influential spiritualist and religious social current. In France, however, comparable efforts were mainly impeded by continued opposition of established scientists. Even so, the private research facility Institute Métapsychique International (IMI) was founded in France in 1919, and has survived to this day despite adverse circumstances. Great Britain has always played a special role in Western parapsychology, mainly due to the foundation of the Society for Psychical Research as early as 1882, which is still considered an international figurehead for a constructive and critical examination of parapsychological topics. However, in Great Britain there existed several other societies and “institutes,” which were often small and short-lived. It was not until 1985 that parapsychological research was able to gain a foothold at a British university for the first time through an endowed professorship in Edinburgh, held by Robert Morris (1942–2004) until 2004. From there, numerous graduates were able to carry on the work of parapsychological research questions at other universities.

A comparison between parapsychology-oriented activities in the Soviet area and in the former GDR is particularly interesting. As much as the practices and ideological positions of their relevant state organs were nominally similar, they differed in the question of how to deal with parapsychological phenomena. In the USSR, as in the US, a pronounced interest in research into “extrasensory” communication



methods was cultivated for decades, whereby the official handling of this topic oscillated in a remarkable way between strict prohibition and research promotion. In many cases, military objectives were pursued, but application-related scientific interests in potentially useful types of radiation played a role as well. Of course, Russian scientists had to move within the Marxist–Leninist worldview—occult and esoteric notions had to be avoided. The extent to which this research has been carried out is surprising. Birgit Menzel from the university in Mainz, Germany, writes:

Parapsychological research has always been carried out more or less intensively in the Soviet period up to the post-Soviet present. This research took place in an almost uncountable number of institutions of the most diverse disciplines, with and without official support, with and without financial means, open and secret, isolated as well as networked. But their status has always been precarious. (p. 149; my translation)

Menzel highlighted that a bibliography of Russian papers on parapsychological research from 1993 contains more than 700 titles, including 237 publications on bilocation and bioenergetic information, 172 on telepathy, 58 on poltergeist phenomena, and 33 on telekinesis. One of the most important institutions for the development of parapsychological skills in the military sector was apparently a “Department 1003,” which existed from 1986 to 2003 and had an annual budget of four million dollars until 1998, plus personnel costs. Its end was apparently due to a new phase of a state-institutional blockade that began in the early 2000s. However, interest in anomalistic phenomena among the Russian population seems to remain unbroken.

Yet, the situation in the GDR was very different: Here, the government insisted strictly on “scientifically” founded dialectical materialism: Parapsychological phenomena cannot occur in a materialistic world, and consequently potential occupations with parapsychology were monitored by the state and nipped in the bud. Every utterance in support of psi-phenomena from especially West Germany was claimed to be based on superstition, deception, and even deliberate manipulation of the population by the capitalist ruling class. The question of why the parapsychological research of the GDR’s big



brother USSR remained practically unknown and uncommented on in the GDR remains unanswered for the time being.

Uwe Schellinger from the *Institute for Frontier Areas of Psychology and Mental Health (IGPP)* in Freiburg, Germany, gives an overview of the attempts made in Germany to integrate paranormal knowledge into police investigations (known as “criminal telepathy”). Even at times when such practices were highly unwelcome, they were occasionally still resorted to by officials—when the pressure to do so was great enough. For example, psychics who had previously been persecuted and imprisoned in concentration camps by the Nazis were recruited in 1943 to locate the whereabouts of the abducted Benito Mussolini (1883–1945).

In the final chapter, Eberhard Bauer, who has worked at the Freiburg IGPP since 1970, is interviewed by Anna Lux and the ethnologist Ehler Voss about his experiences as a professional parapsychologist. The chapter therefore offers valuable personal insights of an actor who speaks from within the housings of institutional parapsychology, and doesn’t just illuminate it from the outside.

In sum, the present volume is highly recommendable, providing a solid understanding of the complex background and developments in parapsychology on national and international fronts in the 20th century. But finally, I would like to add some thoughts that this book, being a historical treatise, elicited. I find it curious that virtually dozens of historical and sociocultural treatises about parapsychology, occultism, spiritualism, mediumship, etc., have been published during recent years by scientists situated in academic settings. It would be interesting to count the major treatises from authors at universities versus practicing parapsychologists at universities, and to compare this relationship to other science disciplines. Admittedly, each research discipline needs history to be properly understood, and some historical treatises about hitherto little-known topics, such as those covered in

chapters of the present volume, are of considerable interest and value. Sometimes, certain arguments also offer further-reaching lines of thought. One might ask, for example: Is it likely that in all the decades during which Russians funded and pursued parapsychological studies they never documented a single, genuine psi event? Usually, however, historical books about parapsychology, including this volume, are written from a safe distance and with no commitment to take seriously the collected evidence for parapsychological phenomena from an ontological perspective, or to advance practical research.

Nevertheless, active parapsychologists, who provided and who continue to provide the material for all these historical studies, are currently still struggling to establish their research in academic circles, as the present book clearly demonstrates. Unfortunately, it seems that parapsychologists are increasingly being regarded as career study objects for others, like a peculiar and endangered animal species. But whereas endangered animal species often profit from studies that aim at providing a better understanding of their life history, whereabouts, structural habitats, and ecological niches, parapsychologists hardly profit from such studies. This development contains a somewhat strange aftertaste, which is probably also felt by Eberhard Bauer, who commented critically on the growing number of speakers “from the second row” in his interview (p. 396, my translation).

## BOOK REVIEW

**The Decline of Magic: Britain in the Enlightenment** by Michael Hunter. Yale University Press, 2020, 243 pp., £18.50 (paperback). ISBN 078-0-300-24358-1.

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In the preface to this very scholarly—and sometimes almost confusingly well-informed—book, the author tells us that his aim is to offer “a fresh view of the change in educated attitudes toward magical beliefs that occurred in Britain between about 1650 and 1750.” In this he unquestionably succeeds. Actually, the book continues somewhat beyond the later date, but there can be no doubt that there were changes—mostly declines—during the designated period in many of the miscellaneous human beliefs and activities that have for whatever reason been labeled as ‘magic’ or ‘magical’.

Hunter begins the body of his book with a chapter-length **Introduction** entitled **The Supernatural, Science, and ‘Atheism’**. This opens with an attempt to define what he means by ‘magic’, based, he says, on the similar attempt made by Sir Keith Thomas in his classic *Religion and the Decline of Magic* (1971), though unlike Thomas he very wisely does not include alchemy and astrology. Even so, he includes quite a wide variety of topics, so wide indeed that it is hard to see what if anything these phenomena—if they do indeed occur—could have in common except that they are difficult to explain, or to explain away, in ordinary, accepted terms. The proposed list includes such matters as witchcraft, witch covens, involvement with the spiritual realm (good or evil, angelic or demonic, benevolent or pestilential), possession, conjuration, prophecies, ghosts, apparitions, fairies, omens and lucky charms, and what would now be called poltergeists. Other varieties of

curious events linked to or supposedly similar to the above could in practice no doubt be included.

Much of the rest of this chapter is perhaps best described as introducing readers of the book to parts of the social, historical, and religious background of the time, and to some of the most relevant individuals whose lives were enacted against that background. The most likely parts of this background to link with the waxing and waning of matters 'magical' and mysterious are obviously the religious ones, more especially since religion in Britain during this period was both central to many peoples' lives and liable to assorted differences of opinion. But in a review for a journal of scientific exploration there are certain further features of the British scene from about 1650 to 1700 that should be specially noticed, namely the persisting influence of Francis Bacon (1561–1626), the so-called "father of empiricism," who, Hunter says (p. 10), "urged that systematic 'natural histories' [i.e. collections of facts] should be built up which would form the basis of a reliable philosophy of nature," and of course one of the possible offshoots thereof could be collections of cases of certain types of odd phenomena that might nowadays be called 'paranormal' or 'supernormal' but might then have fallen under the above heading of 'magical'. The early collectors of such cases mostly hoped that their collections would counterbalance the activities of sadducees, skeptics, disbelievers, doubters, freethinkers, and Deists whose supposed negative effects upon religious and related beliefs worried many contemporaries.

An early influence on such case collection was Matthew Poole, a graduate of Emmanuel College, Cambridge University, who in 1657 wrote and circulated rather widely a document (mentioned by Thomas [1971, pp. 94–95] though not by Hunter) entitled *A Design for Registering Illustrious Providences*. Poole's *Design* (I rely here on a slightly imperfect copy preserved in Cambridge University Library) attracted some attention, but unfortunately was (so far as I know) never implemented by anyone at the time, though Increase Mather's *Remarkable Providences: An Essay for the Recording of Illustrious Providences* (1684) owes something to it. But Poole had some ideas that were well in advance of his time. He proposed that for each county a Minister (of religion!) should be appointed to collect cases, with the help of four

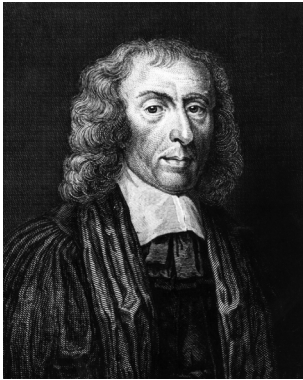


Figure 1. Thomas More.

or five others of judgment, activity, and zeal for God, who would take pains to seek out cases of extraordinary providences, apparitions of spirits, and so on, and to make sure that all cases, the events and the circumstances and status of the witnesses, should be properly recorded, the witnesses should sign the record, and the whole be promptly forwarded by the Ministers to a central depository.

It would be a couple of hundred years before such ideas were to an extent implemented (though minus the religious overtones), but it is not unlikely that some of them had filtered through to relevant case collectors well before the end of the seventeenth century, by which time there were quite a few such cases, as Hunter makes clear. The best-known and most-remembered today are Henry More (1614–1687) (Figure 1), the Cambridge Platonist, and his ally Joseph Glanvill (1636–1680) of Oxford (Figure 2), who between them wrote and edited the collection of cases and articles entitled *Saducismus Triumphatus* (roughly translated as ‘Disbelief Defeated’) (first edition in 1681), usually but wrongly attributed just to Glanvill. Another notable collector (and



Figure 2. Joseph Glanvill.

follower of Francis Bacon) was Robert Boyle (1627–1691), probably the outstanding chemist of his time. Hunter has written a book about him (Hunter, 2009). Unfortunately, Boyle’s relatively early death prevented the full publication of his collection.

During the period under discussion, individuals from certain groups seem to have been rather excessively keen to fling the accusation of ‘atheism’ at members of certain other groups. Exactly who these accusers were and why they handed out such pleasantries is not always clear, but Hunter’s extended account of the matter near the end of his Introduction makes it clear

that the targets were more likely to be witchcraft doubters than case collectors. The mere hint of such an accusation in the earlier part of the period we are concerned with could carry implications of suspect morals, religious dissent, poverty of intellect, or general cynicism. Of course, in classical times the Greek term 'atheism' (as Hunter points out) had a range of possible meanings (this can easily be discovered from a variety of current dictionaries and reference works), but how widely, in the post-Renaissance times we are discussing, this would have been known to scholars and capitalized on, or spread around the less educated, I could not say.

The following chapter (numbered the first) is entitled **John Wagstaffe, Witchcraft, and the Nature of Restoration Free-Thought**, and continues the theme of doubters and their doubts. Wagstaffe (1633–1677) was a well-educated and independently wealthy person, who for the most part wore his learning lightly (he was seemingly among the 'wits' who were privately given to mocking controversial issues, religious ones not excepted, in fashionable coffeehouses). He was chiefly known, and is to an extent remembered, for the highly skeptical book *The Question of Witchcraft Debated* (1669, and several enlarged later editions). Hunter remarks (p. 33) that in addition to the 'learned component' in Wagstaffe's work another characteristic was its "boldness and iconoclasm." Wagstaffe scoffs at on rational grounds most of the then-standard arguments favoring the reality of witchcraft. Biblical support for the idea he dismisses as due to mistranslation of words in the Old Testament, further distorted by ideas about pacts with the devil and prejudiced by deliberate human deceit. He offers explanations of the prevalence of witchcraft beliefs, losing no opportunity to blame Catholic priestcraft and the Inquisition. Indeed, he is cynical also about the early Christians "whose blind intemperate zeal tempted them to forgery, and whose undue openness to Platonic influence made them perpetuate the exorcising of the heathen" (Hunter, p. 39). Into all this could easily be read the irreligious standpoint of which Glanvill and More were so apprehensive and which they tried to combat in *Saducismus Triumphatus*.

However, Hunter thinks that though Wagstaffe's views were caustic they were less extreme than has sometimes been thought. He seems to have been a Christian, like his sixteenth-century predecessor

Reginald Scot, whose *Discoverie of Witchcraft* (1584) is notable for humor as well as common sense. A humanitarian, Wagstaffe rightly feared the danger of a witchcraft inquisition in the hands of “ambitious, Covetous and malicious men” (Hunter, p. 43).

Hunter discusses attempted rebuttals to Wagstaffe by Meric Casaubon and an individual known only by the initials R. T. and concludes (p. 43) that the two sides did not really engage in a proper debate with each other.

Outright religious skepticism or anything approaching and possibly implying it, such as Wagstaffe’s bosh-and-fiddlesticks approach toward all forms of ‘magic’, is rather hard to find in printed form in the period with which Chapter One deals (say the last two quarters of the seventeenth century). No doubt fear of possible legal repercussions had something to do with it. Hunter notes that coffeehouse ‘wits’ among others seem to have been ready enough to talk in private about such matters. But a person who, though somewhat neglected by Hunter, did publish a quite substantial book, expressing pretty deep-rooted skepticism concerning a goodly selection of the ‘magical’ phenomena listed above, was John Webster (1610–1682), a Yorkshire physician whose *The Displaying of Supposed Witchcraft* (1677) attracted a good deal of notice because its skepticism is criticized in Glanvill and More’s *Saducismus Triumphatus*.

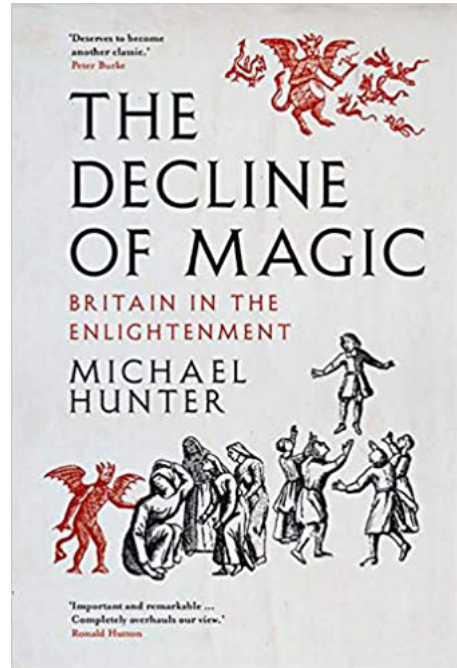
Despite his resolute skepticism, Webster had one weakness—he was, it appears from his penultimate chapter, interested in and even prepared to consider cases of ‘spectral evidence’ or ‘ghosts before the law’, in which a recognized or identified apparition of a recently murdered individual allegedly returns to give vital information about the identity of his or her murderer. (Sir Walter Scott, himself a lawyer, shared this interest, as, later, did the nearly omniscient Andrew Lang.) By the early nineteenth century, judges had begun to look with disfavor on this form of second-hand evidence, but in his penultimate chapter Webster was able to collect a number of then relatively recent examples. With regard to one of the more interesting of these he informed his readers that he had lost his notes but was sure he could remember all the crucial facts. Perhaps this might encourage one to hope that normally he was always accustomed to take contemporary notes.

Hunter’s next chapter (Two, **From the Deists to Francis**



Hutchinson) has as its central concerns not just the freethinkers and Deists in whose publications skepticism about magical beliefs had by the early eighteenth century become more or less axiomatic (p. 49), but also notes how, around the transition between the seventeenth and eighteenth centuries, some of the more orthodox Christians began in a cautious way to explore some of the skeptics' arguments about witchcraft and related matters. Seen in retrospect, this might be thought of, Hunter says, as the beginning of a very important development, first brought fully into focus, some have suggested, by the publication of Francis Hutchinson's *An Historical Essay Concerning Witchcraft* (1718).

This work gives us a brisk account of a number of leading Deists, and anyone who supposes that because Deists were not tied to the tenets of any particular religion they were likely to be similarly tolerant of other people's 'magical' beliefs will be quickly disillusioned. Hunter (p. 55) cites one of their number (the 1<sup>st</sup> Viscount Molesworth) who privately wrote that the pretenders to such stories should be immediately taken up and whipped at a cart's tail (one might have thought this was simply an expression of the gentleman's sense of humor had he shown the slightest sign of possessing one). As for the gradual encroachment of certain skeptical arguments—particularly ones concerning witchcraft—into the thinking of the orthodox, Hunter goes into the question in far greater detail than I can possibly encompass here. Publications by Deists and freethinkers grew more frequent toward the end of the seventeenth century and into the eighteenth, though Hunter produces evidence that arguments



on such matters remained most likely to be exchanged (or laughed over) face-to-face between coffeehouse wits than earnestly debated through the printed word. His most interesting (though certainly not his only) sources for saying this are the diary and correspondence of the Leeds antiquary, and orthodox Christian, Ralph Thoresby, coupled with the correspondence and notebooks of the delightfully named Obadiah Oddy, a classical scholar and freethinker whom Thoresby had encountered in a coffee shop or shops during a visit to London, and the correspondence of the arch-Deist John Toland with whom Thoresby had exchanged letters.

There is also further relevant correspondence between Oddy and an Oxford scholar and diary writer named Thomas Hearne, who described him as “an irreligious Latitudinarian.” It is apparent that Thoresby was greatly shocked by the (to his mind) sacrilegious conversations he heard and overheard in the coffeehouses. In fact, he was so alarmed by their tenor and possible long-term influence that he started his own substantial collection of cases on the Glanvill and More model. (The collection no longer exists, though it might be possible to reconstruct its outlines from information still in existence.) An observer could have felt that it would be only a matter of time before the orthodox began to see and respond to the apparent incompatibility of certain of their beliefs with the skeptical views that were gaining ground. And this did indeed happen, a central figure in the change being the aforementioned Francis Hutchinson, D.D. Hutchinson (1660–1739) may first have become interested in questions of witch trials and their reliability when in 1691 he became perpetual curate of St. James’s, Bury St. Edmunds. In decades gone by, Bury had been at the sitting for two appalling witch trials, about which he may well have heard a good deal. Hunter has evidence that Hutchinson was planning a book on witch trials for more than ten years before he eventually produced his *Historical Essay*, inspired, some think, by the narrow escape in 1712 of an old and impoverished woman, Jane Wenham, from an execution decreed by uneducated jurors but averted through the action of the trial judge. (This has been claimed by some to have been the last trial for witchcraft held in England.)

Hutchinson’s book might be described as well-organized, though its format as a dialogue between a clergyman (i.e. Hutchinson), a Scottish

Advocate, and an English juryman can become a little tedious. He provides a chronological list of relevant cases, from which he derives some of the characteristics of those ages and nations in which supposed cases of witchcraft have or have not been particularly numerous. These in turn led him to remark that in regard to penal laws wise men have thought it necessary to



Figure 3. Francis Hutchinson.

be “wonderfully cautious” as to laws that involve their neighbor’s blood or reputation. He therefore suggests the adoption of such principles as that witches should not be convicted upon the tricks of swimming or scratching, or upon confessions extracted by torture or enforced wakefulness. He adds that things ‘odd and unaccountable’ should be ‘respited’ until we understand them, and that where there is no known rule to decide by, no judgment should be made. Furthermore, we should show our faith in God by leaving doubtful cases to his Providence, which is powerfully active in the world.

After this, Hutchinson devotes a series of chapters to notorious witchcraft trials, in the majority of which the accused (often quite a few of them) were executed, and which, he makes clear by rational analysis of the evidence, involved serious miscarriages of justice. It seems to me that even three hundred years ago no one of a balanced mind could fail to recognize that such miscarriages had taken place on a considerable scale, and that the substantial influence that his book had is quite understandable. Hunter’s view (p. 65) is that the most significant thing about the *Historical Essay* is the extent to which Hutchinson felt that he was negotiating a route between an Atheistical Sadducism on one hand, and a timorous Enthusiastical Credulity on the other. There is clearly truth in this, and Hutchinson makes it obvious that he does

not want to appear, and probably was not, hostile to the Christian Faith. His demonstration that religion and rational thought were not incompatible, together, just possibly, with his appointment in 1721 as Bishop of Down and Connor, were probably central to his and his book's subsequent influence.

Hunter's third chapter has the title **The Ambivalence of the Early Royal Society**. The Royal Society of London was founded in 1663 out of a slightly earlier association of 'natural philosophers' (as scientists were then termed). It has more than once been suggested that it was principally the growth of science as exemplified by the Royal Society that brought about the decline of belief in witchcraft. Hunter, however, who has gone into the history of the Royal Society in some detail, thinks otherwise, but into such detail we cannot go. Obviously, the Royal Society did have a key role in defining the boundaries of the studies that came to be regarded as within the remit of science, but these boundaries, as Hunter remarks, cannot be delineated by counting the early eclectic interests of the Fellows of the Society, but has to be assessed by the contents of its published *Proceedings* and the records of its meetings. A number of the Fellows (quite apart from More, Glanvill, and Boyle) had interests in topics that might have been classified as 'magical', but excursions into such arcane matters are exceedingly rare in the *Proceedings*, and a couple of very influential members, Henry Oldenburg, the Society's first secretary, and its curator of experiments, Robert Hooke, were much opposed to anything of the kind. Internal arguments within the Society could have broken out, and there was also "a particularly potent body of public opinion" among the London intelligentsia (or those who fancied themselves as such) represented by the coffeehouse and playhouse wits, engagement with whom might have injured the Society's public image at a time when it was still fragile enough to be damaged by mockery. Some Fellows could have recognized that there were good reasons for the Society to refrain from linking the study of natural philosophy with 'magical' phenomena. Indeed, Hunter proposes, with evidence (p. 79), that by the eighteenth century this attitude had been institutionalized. . . . Even if not intentionally, "by thus ostracizing [magic] from science, the early Royal Society did play a significant role in the decline of magic."

Hunter's Chapter Four, **The Drummer of Tedworth. Competing**

**Interpretations and the Problem of Fraud**, is the longest chapter, and since the Tedworth (now Tidworth) case is—despite being well over three hundred years old—still perhaps the best-known of all British poltergeist cases, I will not go into detail. It took place in the home of John Mompesson, a well-connected Wiltshire landowner, from April 1662 until some uncertain time toward the end of 1663. The phenomena were attributed, at least by Mompesson and most of his neighbors, to the malign activities of a traveling drummer and dancer, William Drury, of somewhat nefarious reputation which included or soon came to include involvement with witchcraft. Mompesson had him arrested and his drum confiscated—it ended up in Mompesson's house, at which point the odd phenomena began there, and, it should be noted, subsequently went on for months while Drury remained in prison.

The phenomena naturally began with sounds of a drum being quite skilfully beaten (even after the drum itself had been destroyed), and subsequently there were sounds as of a drum being imitated by human fingers on wooden surfaces such as wainscoting and possibly external weather boards. (Mompesson was aware of the possibility that servants, secure in being irreplaceable, could have been playing tricks.) Other phenomena included responsive knocking, chairs 'walking about', objects being thrown, people being lifted up in or with their beds, bedclothes being tugged, scratching as of talons on floors, mattresses, etc. Over appreciable periods of time a number of these events were recorded by eyewitnesses fairly soon after their occurrence; a number of the relevant documents, or copies of them, still survive, for instance Mompesson's letters to his Oxford friend William Creed, a sort of diary of the phenomena kept by Mompesson from the 10th to the 21st of January 1663, and Glanvill's notes of his experiences at Tedworth in the same month. There is a good deal else besides—Hunter's account of the case; it should be emphasized, it is so far as I know the richest in such details that we so far have. But even setting aside the plenitude of detail, there are some points that are worth noting.

At the start of this case, Mompesson's neighbors and contacts seem in general to have accepted the reality of the odd happenings that were taking place in his house, and even the possibility that witchcraft and the drummer might be responsible. Mompesson—a deeply religious man—believed in witchcraft, and probably took the view that reasons

for believing in it were also on biblical grounds reasons for believing in the truths of Christianity. But as word about the alleged Tedworth phenomena began to spread rather widely, curious persons started to turn up at Mompesson's house, invited or uninvited, or sometimes as aristocratic representatives of even more aristocratic or sometimes royal patrons. At first these visitors seem to have been relatively polite whether or not they had witnessed any phenomena for themselves (as some did and others did not), but over time they became less polite and more and more demanding and more and more annoying to Mompesson. Before long the coffeehouse wits (whom we have met before) realized there was amusement to be derived not so much from inflicting themselves on Mompesson as from vying with each other in mockery from afar. Notable among them was the Earl of Rochester (1647–1680), rake, libertine, and writer of verses sometimes bawdy but rarely dull. Tall tales found their way into circulation, no doubt invented by the aforementioned 'wits', for instance that Mompesson had confessed it had all been his own juggling, and even that he had admitted the same during a supposed interview with the King, which Mompesson strongly denied in a letter to Glanvill. Still worse was the report that Glanvill himself no longer believed in the veracity of the affair, of which Hunter remarks (p. 109) "there is not the slightest evidence that Glanvill ever had any such doubts."

More serious arguments continued for the rest of the seventeenth century, and into the next, and Hunter suggests (p. 117) that by 1716 (the date of Addison's play *The Drummer or the Haunted House*) skepticism had indeed become the order of the day, which was certainly the case so far as witches and witchcraft in general were concerned. He adds, however, the caveat that "the invocation of fraud in this case [Tedworth] was by no means as straightforward as might be expected." It seems unlikely, he goes on, that the invocation of fraud by itself "made many converts to the skeptical cause of people who had reasons to believe in the reality of the phenomena in question." An obvious counterargument to accusations of fraud was that many of these accusations were produced by "pressure on those of lower status" of which apparent examples could likewise be proffered. He therefore concludes (p. 120) "that the fundamental point about the Tedworth case [was] that the accusation of fraud was not really decisive at all" and that it was a predisposition to

believe or to disbelieve rather than any decisive piece of evidence “that was fundamental in dictating people’s response to what had occurred.”

Hunter adds a little to his account of the Tedworth case in his Appendix I (pp. 181–184). Here he goes into further details concerning relevant Mompesson documents, and their locations, and accuses me of omitting significant passages from several when I reproduced them myself in Gauld and Cornell (1979). These omissions ran to a total that he puts at 70 lines plus a few stray sentences. I did indeed omit the passages, simply to save space. I regarded them as adding little to the overall significance of the documents, and indicated the omissions in the text. Clearly opinions differ! He also accuses me of omitting a whole document, a letter from Sir Thomas Mompesson, which he regards as of some importance. However, so far as I can discover no copy of this letter ever reached me, presumably because being unaware of its existence I never asked for it.

It is really rather unfortunate that the Tedworth case achieved so much prominence and with it undeserved notoriety and argument, not just at the time, but over subsequent years and indeed down the centuries to the present. A different case, of course carefully observed and promptly recorded, but also much less publicized, especially among persons of limited intellects and strong preconceived opinions, might have been far more helpful to future understanding of such things. I think, as an approximation, of a case published in 1682 by Henry More as editor of the second edition of *Saducismus Triumphatus*. This is Case Five of those he called ‘A Continuation of the Collection’. It is the second of two from the Parish of Lessingham (now Leasingham) near Sleaford in Lincolnshire, both written up by William Wyche, a resident of that Parish. The facts come from the principal but by no means the only witness, Sir William York(e) (c. 1646–1702), also of that Parish. He must, I think, have communicated them directly to Wyche, a recent graduate of Emmanuel College, Cambridge University, who was ordained in 1680–1681 and in the following year became vicar of New Sleaford. From 1683 he was headmaster of Carre’s Grammar School in Sleaford (still in existence today). Wyche sent his account to John Richardson, a fellow of Emmanuel from 1674 to 1685; who in turn passed it to More. More sent various questions back through Richardson and received answers from ‘a very certain hand’ (whose it was is not stated).



The phenomena lasted from about May to mid-October 1679, by which date they were already weakening. They ceased completely on October 16th, when York, who had recently been elected a Member of Parliament, had to head for London. It could hardly be alleged that those principally involved in the case were all uneducated liars and tricksters. The phenomena reported have some overlap, far from complete, with those said to have occurred at Tedworth. York's house seems to have been fairly substantial, and like Mompesson's, to have had a fair amount of wood in its construction. The events included very noisy lifting up and down of the latch of the outmost door, chairs found moved when no one could have moved them, loud knockings on doors as with a hefty stick, sometimes as if with a plank of wood, and so violent that carpenters working in the house declared that the doors would have been broken, sounds as of a man walking or running, or someone in stilts knocking on the ceiling, sounds like a plumber putting up lead, and knocking with a hammer, sometimes like the chopping of wood in the yard, or like knocking at the doors of outhouses, or of the wash house, brew house, or stable doors, three or four nights a week, of someone running up and down stairs, of knocking on the wood of windows from inside or outside. Once, at night, the sounds moved outside the house to come from a sundial in the garden (Sir William followed them out). Sir William, who did not want to be thought a believer in such things, repeatedly organized stratagems to catch whoever might be causing these happenings by normal means, or to prevent any fraud from occurring, as by locking the doors of targeted rooms, but he discovered nothing and nobody.

Chapter Five is called **The Enlightenment Rejection of Magic: Mid-Century Scepticism and Its Milieu**, and in light of its title the actual contents seem a trifle out of balance. Much of them have to do with the views on magical matters from the late seventeenth century until well on into the eighteenth century of various well-known medical men. This may be of passing interest in the history of medicine, but is surely somewhat peripheral to the decline of belief in magic, except insofar as we are concerned only with the beliefs of a smallish number of quite intellectual people. The beliefs of the doctors themselves, however, are not without interest. They are presented by Hunter in his usual knowledgeable detail, and tend, as one might expect, toward



reductionism and naturalism. Some were much influenced by the rapidly growing ideal of Newtonian physics, which might have inspired the thought that there should be laws to guide the practice of medicine as exact as those of geometry or physical science—if one could only agree on what such laws could be. Some doctors certainly thought that the (presumably delusory) magical beliefs cherished by numbers of their patients were due to some underlying physiologically based condition such as melancholia, and could be dispelled accordingly. Thus, we find doctors setting out to treat such conditions by physical treatments. The trouble with their approach (not I think recognized at the time) was that even if one could treat a liability to delusions and hallucinations on such assumptions, it still leaves some main problems of ‘magic’ as defined above largely untouched. It does not deal, for instance, with fulfilled prophecies, with ‘veridical’ apparitions as now defined (e.g., ones that coincide or cohere with events distant in space or time, including the experiences of other persons, in ways for which no ordinary explanation could or can be as yet found), or with possession, clairvoyance, and thought-reading, or hauntings and poltergeists. It seems that one must either accept some implausible ad hoc solution to these problems, or admit defeat.

At the end of the chapter, Hunter again draws attention to the fact that the voice of the more skeptical of medical men on magical questions resonated with some of the radical ideas emanating from the more liberated clerical circles. Indeed, we find members of both sides privately mixing rather than pursuing differences all the time. As one of his examples, Hunter points out that Conyers Middleton (1683–1750), a notoriously, sometimes savagely, argumentative clerical academic, went as a patient to Sir Hans Sloane (1660–1753), a well-known physician who was among the foremost of the medical skeptics.

Chapter 6, on **Second Sight in Scotland**, is an interesting treatment of a relatively unusual topic, and has the advantage of recapitulating in short order some of the leading kinds of issues that have arisen in previous chapters in somewhat different contexts. The chapter is divided into three fairly clearly demarcated sections, the first of which tackles writers from the later seventeenth century until well into the eighteenth who thought that cases of apparent second sight might be worthy of investigation and study, the second gives the views

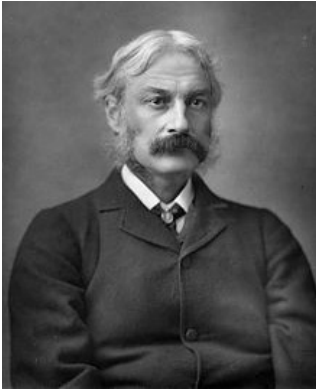


Figure 4. Andrew Lang.

of ‘enlightened’ skeptics from (roughly) the mid-eighteenth century until well into the nineteenth, and the third presents Hunter’s own thoughts on the topics.

First, however, we need to ask what exactly can be meant by the still current, if somewhat rarely used, term ‘second sight.’ A helpful digest is provided by the Scottish folklorist and historian Andrew Lang, whose chapter on second sight (Lang, 1896, pp. 217–228) is still one of the best short introductions to the subject:

In second sight the percipient beholds events occurring at a distance, sees people whom he never saw with the bodily eye, and who afterwards arrive in his neighbourhood; or foresees events approaching but still remote in time. The chief peculiarity of second sight is that the visions often, though not always, are of a symbolical character. A shroud is observed around the living man who is doomed; boding animals, mostly black dogs, vex the seer; funerals are witnessed before they occur, and ‘corpse candles’ . . . are watched flitting above the road whereby a funeral is to take its way. (Lang, 1896, pp. 217–218)

Different cultures may have comparable phenomena but different symbolisms—however, we are talking here principally of Scotland and the Isle of Man. When second sight is imminent the seer or seeress may pass into a detached state and become unaware of his or her surroundings. This can tell knowing observers what is happening. Many seers would rather it didn’t happen at all, let alone be guessed at by others. In later times the problem might be simply to avoid embarrassment, but the first recorded cases come from the early seventeenth century when the seers could be burnt at the stake as witches on the assumption (vigorously advocated by Presbyterian clergymen) that they must be in league with the devil, or be controlled by fairies (which more or less amounted to the same thing)—unless, of course, the seers happened to be clergymen themselves, in which case their remarkable gifts were taken as indicative of holiness.

Hunter, however, is more concerned with the situation toward the end of the seventeenth century and on into the eighteenth, by which time the frightful risk of incineration had receded (much to the regret of certain Scottish clergymen) and English and Scottish savants had begun to be curious about the actual nature of the supposed phenomena. He attributes the effective start of this wider inquisitiveness no doubt correctly to Robert Boyle, about whom (as mentioned before) he has written a biography.



Figure 5. Robert Boyle.

Boyle's interest was aroused in 1678 by the Scot Lord Tarbat who gave him information on the subject both in conversation and by correspondence. A letter from Tarbat to Boyle, though not published until much later, seems to have circulated and occasioned a wider interest. Boyle, as a dedicated disciple of Francis Bacon, began to collect as much factual information on the subject as he could, regarding this as an essential preliminary to reaching a proper understanding of any kind of natural occurrence. Among other well-known Englishmen who became interested in 'Scottish second sight' and its possible implications, and collected accounts of it, were John Aubrey (1626–1697), probably best remembered for his often-humorous *Brief Lives*, Samuel Pepys (1633–1703), the diarist and subsequently a President of the Royal Society, and Dr. Samuel Johnson (1709–1784), lexicographer. The Scottish believers are on the whole rather less well-known—Robert Kirk (d. 1692), a highly educated Scottish cleric, author of a work that despite its title *The Secret Commonwealth of Elves and Fairies* contains a good deal about second sight, and John Fraser, Dean of the Isles, another such well-educated individual, and author of *Deuteroskopia: Or a Brief Discourse of the Second Sight* (1707). Hunter goes on with further believers and debunkers, continuing from the middle eighteenth into the early nineteenth centuries, making it quite clear that among the educated of the Age of Enlightenment the debunkers (who could have

traced their forebears back to the much older Deists and freethinkers, had they known about them) were by far the dominant party. I have to confess that on the whole I find the believers more impressive than the skeptics. The believers at least provide a fair number of rather odd cases supplied by witnesses who might be regarded as credible. What is lacking is examples of cases in which what the seers saw (or thought they had seen) remained unconfirmed by events, thus making it difficult to assess how many 'hits' might simply have been due to happenstance. The skeptics, however, tend to rely in one form or another on the even less satisfactory tactic of simply assuming that those who can believe such absurd stories must be credulous idiots, probably ill-educated, and very likely mentally disturbed. At best they were likely to be vivid dreamers, in thrall to local superstitions. Often confident in the widespread assumption that natural phenomena, even when as yet not fully understood, were ultimately to be explained in terms of neo-Newtonian mathematical laws, the skeptics were rather too ready to accept that any sort of explanation seemingly incompatible with the Newtonian assumption could be instantly set aside.

In the final section of the chapter, headed 'The Realm of the Imagination', Hunter takes up the idea that although the skeptics had pretty much knocked such 'magical' ideas out of the ring, the notion of second sight was able to take on a new lease in life in the realm of poetical or fictional fantasy. Thus,

we now enter the era when second sight became part of the culture of Romanticism, and a typically Romantic blending of fact and fiction created a powerful image that was elaborated during the Victorian period and that continues to have resonances today. (Hunter, p. 166)

This is all very well when taken in a context of the history of literature, but of little relevance as regards the stated purpose of this book, which is ostensibly (p. 2) to demonstrate and understand the changing attitudes toward 'magical' beliefs, such as the sorts of beliefs listed at the beginning of this review, between (in practice) the mid-seventeenth century and the early part of the nineteenth, thus comfortably covering the period often termed the Age of Enlightenment. But the relevant

questions with regard to the general waning or otherwise of 'magical' beliefs (as distinct from the romantic appeal of magical ideas to readers and writers of poetry or fiction) are factual ones as to the causes of such waxing or waning—the forcefulness of the various arguments for and against these beliefs, the strength and dissemination of the evidence on each side, the intelligence and education of those presenting and those assessing that evidence, their open-mindedness and prejudices, and so on.

The final chapter (unnumbered), **The Decline of Magic Reconsidered**, is an overview of the conclusions that the author thinks he can draw from the preceding chapters (there is another, more concise, overview at the beginning of the Preface). A prime message that emerges seems to be how it gradually became apparent that the once-standard arguments deployed against belief in 'magic' were untenable or impossible to decide about. For instance, the argument that all these supposedly 'magical' phenomena were fraudulent raised the question of how so many people could be so gullible as to take them seriously in the first place, which led to the further proposal that these dupes were for the most part stupid, ignorant, or psychologically vulnerable, an assumption that is not exactly well-supported by independent evidence. Or again, consider the 'priestcraft' argument popular with Deists such as Conyers Middleton, that magical and related beliefs were deliberately fostered by fraudulent priests to increase their power or for pecuniary gain. As a general hypothesis, this was monstrously implausible, and devoid of any extensive evidence.

Following the publication of Newton's *Principia* in 1687, a new picture of nature and nature's laws (no longer 'hid in night') became dominant, at least among the sufficiently educated. According to this view (mentioned briefly above), natural laws, even where not yet discovered, were bound to be of a Newtonian kind, mathematical and leading to precise predictions. If one encountered alleged phenomena that were obviously never going to be susceptible to such treatment, one could dismiss them out of hand. Hunter (p. 161) quotes Sir Walter Scott: "if force of evidence could authorise us to believe facts inconsistent with the general laws of nature, enough might be produced in favour of the existence of the Second Sight." Skepticism with regard to inconvenient phenomena had never seemed easier or more cut and

dried. Such an attitude lingered into the nineteenth century, where we find it exploited not just by Scott, about whose 'real' views I share Andrew Lang's doubts, but by two well-known medical men (John Ferriar, 1765–1815, and Samuel Hibbert, 1782–1848) who each wrote a well-received book attempting to demolish the belief in apparitions, second sight, etc., by such standard explanations as illusions based on memory and psychophysiological problems of various kinds, and by deliberately selecting outdated and unconvincing cases to demolish, for which Hibbert was in turn demolished by Andrew Lang (1996, pp. 188–193). They were not the last such skeptics, but signs of coming change were not far off.

Overall, I hope I have made it clear how very informative and sensibly critical this not overlong and not overpriced book is. And it forcefully and rather worryingly brings out how much there is in common between on the one hand the sometimes ferocious and nearly always pointless disputes conducted in the seventeenth and eighteenth centuries between believers in what is here called 'magic' and the skeptical Deists and freethinkers who strongly opposed them, and on the other hand the present disputes between parapsychologists and materialistic proponents of 'scientism'. There is often the same tetchiness and the same failure even to look at the other fellow's case. Though the ill-temper may be a little bit less, the warning about engrained narrow-mindedness is still salutary.

Hunter is free of such prejudices, but his book runs into certain problems. Most of them arise from the overly wide definition of 'magic' that it took to begin with. The central thread of the first four chapters relates to traditional witchcraft beliefs (evil witches, mainly female, covens, worship of the devil, a reward of magic powers from him, flight through the air to gatherings where unseemly rites and activities took place). Beliefs in all this was largely gone from Britain by the end of the second quarter of the eighteenth century, certainly among persons who had power to prosecute and sentence offenders, and though the concept of witchcraft still lingers on, it is just for purposes of dressing up for parties or having fun at Halloween. Of course, village 'white witches', the so-called 'cunning men' and 'cunning women', despite certain problems, were still going strong during the nineteenth century, as witness the once-famous 'Cunning Murrell'. Indeed, they went on

into the early parts of the twentieth century (I myself knew an elderly gentleman, an expert, among other things, on folklore, who told me about being advised to visit ‘her at the end of the village’ bringing sugar or tea, before setting out to fish or shoot.) But that was, I think, long past the end in Britain of anything that could be called witchcraft in the traditional sense, though some villagers probably suspected cunning persons of knowing a spell or two.

However, other sorts of magic mentioned in the loose and incoherent definition of the subject with which we started, have lingered on varyingly as objects of belief among some people. These beliefs may be more or less linked to each other or largely independent of each other and may wax and wane in synchrony or otherwise. For instance, stories of apparitions and haunted houses may be linked, and apparitions may be recognized or unrecognized and unshared or (more rarely) shared. They went on, whether or not much reduced under pressure from conventionally well-educated disbelievers we can hardly tell, but they did not wholly cease. Though the educated ceased to bother with cases of apparitions, one can certainly find examples through the eighteenth century, not least ones recorded by respectable Methodist pastors, as in the diaries of John Wesley or among the popular religiosities of John Tregortha’s *News of the Invisible World* (new edition, 1827). Poltergeists were reported from time to time, though not often properly investigated. Sometimes, there was overlap with hauntings, but the classic, young person-centered poltergeist rarely has any attached apparitions. Then how about prevision? Scottish second sight might be thought of as a peculiar, symbolic, version of it. It certainly didn’t wholly disappear in the second quarter of the eighteenth century. In fact, belief that it still goes on has survived in more remote regions of Scotland until quite recently, indeed may well still survive as evinced by the very interesting and relatively recent work of Shari A. Cohn, which Hunter mentions but does not pursue.

In a 1994 article, Cohn reports a questionnaire survey of 615 people randomly selected from four Scottish regions. Questions included whether the respondents themselves had had a second sight experience, whether a relative had, and whether a person known to them had. The response rate (39%) was “reasonably good,” and of these respondents (put at 235 after certain adjustments) 37, or 15.7%, reported

second-sight experiences in which they were themselves the experiencers. Subsequently, Cohn has published several further and more extensive investigations which confirm her earlier findings that second sight has continued, with women on the whole being rather more gifted than men. Of particular interest has been her 1999 investigation of the often-heard suggestion that second sight runs in families. She was able to construct and study the history of 130 families through questionnaires and interviews with 70 individual members. Her conclusion was that second sight may be linked to a single abnormal (or shall we say unusual) gene from either parent. This is a line of work that could merit further investigation. It would indeed be rash to maintain that second sight or a good many of the other types of 'magical' phenomena that Hunter discusses have permanently declined in Britain let alone may forever go away.

Investigating the very variable 'decline' of 'magic', when magic was defined in such wide and woolly and multifaceted terms, was surely a task impossible from its beginnings, but this is not to say that one does not meet with some very interesting issues in Hunter's learned pursuit of it.

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## BOOK REVIEW

**Dangerous Pursuits: Mediumship, Mind, and Music** by Stephen E. Braude. Anomalist Books, 2020. ISBN: 978-1-949501-15-5.

**REVIEWED BY HOYT EDGE**

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Stephen Braude is the most prolific of the late 20th- and early 21st-century philosophers writing about parapsychology, and his work in the philosophical aspects of parapsychology has been the most influential in this field for the past several decades. This book encompasses both philosophical issues in parapsychology, as well as studies in spontaneous and mediumistic investigations, and this collection spans the spectrum of his interests, including jazz.

His title is an apt warning about the dangers to academics pursuing work in parapsychology; however, some suspicion toward those of us in the field can be mitigated if one produces excellent work in the field of one's doctorate before tenure decisions, as Braude did.

*Dangerous Pursuits* is composed of previously published articles or book chapters, but they are usually substantially rewritten in a way that makes these chapters accessible to a wide range of people, not only academics. Although the book is not divided into sections, the chapters are nevertheless arranged skillfully to focus, after an opening chapter on the fear of psi, a topic that Braude returns to throughout the book, on physical mediumship, then more generally on mediumship, and finally on more theoretical topics, with a coda on jazz.

The great pragmatist William James suggested that studying the more unusual human experiences might give us a better, and certainly a more expanded, view of humans, and *Dangerous Pursuits* gives us a good taste of some of these experiences. How we react to

them, however, is another matter, based on what Braude calls one's "boggle threshold." Braude is an extraordinarily careful thinker, and he bases his own boggle threshold on his examination of the evidence, as well as, perhaps, on the college experience he had with table tipping. Many parapsychologists have become interested in the field through their own psi experiences. I have not. I have not witnessed any physical mediumship manifestations that I considered genuine and have witnessed some that were clearly the result of sleight of hand. I experienced initially the best subject, in my first experiment, engaged in fraud, and I routinely gave "displays" of ESP and PK in my first classes in my parapsychology courses having worked up these magic tricks with very little practice, yet students were taken in; perhaps these events have given me a lower boggle threshold than Braude. None of this, of course, undercuts his carefully made arguments. It simply means that all of us who read the book may come away with differing conclusions.

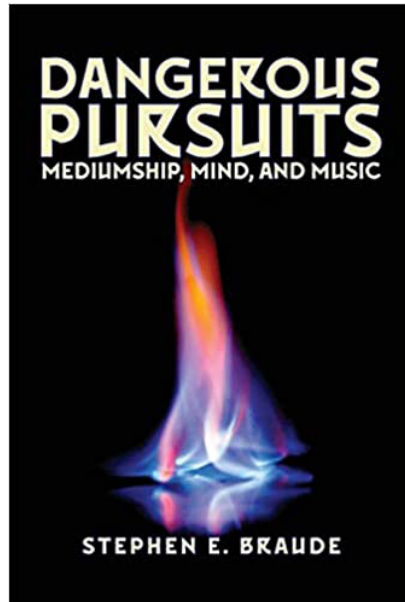
Let me describe some major arguments in the chapters, but, needless to say, these chapters contain a great deal of subtlety that deserves closer inspection, and I recommend that you confront the entire set of arguments.

His topic in Chapter 1, the fear of psi, has been discussed for a good while in parapsychology, especially by Charles Tart, but Braude's approach differs in that he pushes us to consider not simply the possibility of expanded psi in the lab but in mediumistic sessions, particularly examining the phenomena produced by D. D. Home, and especially the accordion playing during some of Home's sessions, a feat that Braude says occurred under excellently controlled conditions. The chapter serves as an appropriate argument for seriously considering all of the mediumistic sessions described in the following chapters, so this chapter is pivotal for the rest of the book.

The next two chapters comprise almost 30 percent of the book and are dedicated to his field investigation of The Felix Experimental Group (FEG) beginning in 2010 with an informal cabinet session with few controls. Over the course of several years, Braude was able to introduce stricter controls within the sessions, which he describes in detail along with the disappointments in his not being fully successful in introducing more controls. Indeed, at the end of this chapter,

Braude comes to a semi-skeptical conclusion and hopes for better controlled experiments.

Here, it is useful to point out a recurring difficulty: If the medium asserts, as in this case and many others, that belief in her abilities on the part of all participants is a necessary condition for the phenomena to appear, a tension is introduced when the experimenter demands a more controlled experiment. Even if the experimenter does not lack belief, at least the medium may think that he does precisely because of the importance the experimenter places on strict controls.



The third chapter chronicles additional sessions with FEG, here finally attempting to get good video evidence of the purported phenomena, including table levitation, unusual rappings and noises, and ectoplasm. Braude examines and rejects arguments that these were done through sleight of hand, and he has a photo of purported ectoplasm in the book, although Braude admits that the ectoplasm disappeared while the medium was in his cabinet, thus reducing its evidential value. Further, in these sessions, they never got good video evidence of any of the best table levitations, although through enough good sightings by Braude and his experimenters, as well as a GoPro video, he believes that he can confirm that this phenomenon occurred. Braude is always level-headed in his examination of the evidence, becoming convinced that at least on some occasions, the medium used a magician's device to produce strange lights. In my reading of anthropological reports about healing as well as in the history of mediumship, it seems that many of the best subjects revert to sleight of hand on some occasion, and it is an interesting question whether that should automatically disqualify them or cause one to reject outright all of the phenomena; I side with Braude that these events call for even

more careful controls but do not automatically move to a fully skeptical conclusion.

Chapter 4 is an examination of the mediumship of the Brazilian medium Carlos Mirabelli. It strikes me as a kind of Gestalt test of mediumship, whether the observer sees sleight of hand or the genuine article; was Mirabelli genuine or was he a fake? Rather than sessions observed by Braude (since the medium died in 1951), Braude is in “conversation” mainly with Eric Dingwall and Guy Playfair in their analyses of Mirabelli’s phenomena. Braude argues that at best it is a case of “mixed mediumship” where the medium definitely committed fraud on some occasions but appears to have at other times displayed genuine phenomena. The best case for Mirabelli was the materializations in bright light, in front of a large number of people, and under good controls, which, Braude concludes, resist easy skeptical dismissal.

The shoddy skepticism that Braude discusses in Chapter 5 is found in Trevor Hall’s book on D. D. Home, whom Braude thinks is the best example of a successful, carefully vetted medium. After spending time criticizing Hall’s “dishonest skepticism,” Braude turns to examine Home’s best evidence as opposed to Hall’s criticism of Home’s weakest evidence. He points out that Home displayed large-scale phenomena under controlled situations in places he had never been, and he was never caught in fraud in his 25 years.

Having given nodding approval to Home’s amazing phenomena, Braude rightly (and with his first chapter on the fear of psi in mind) turns now to the question of super psi. What are the limits, if any, to psi, even given the astronomical effects found in meta-analyses of quantitative studies (which Braude downplays, calling them “marginally compelling”); why is our boggle threshold so low, Braude wonders, for mediumistic phenomena? Why are we willing to use the super psi hypothesis so readily to deny the possibility of postmortem survival based on mediumistic evidence by asserting that it can be a form of super psi on the part of the living?

The first problem Braude considers is whether there is even a good definition of super psi, denying it and saying it roughly refers to psi that is not seen in quantitative studies. But is there any good reason to doubt that psi phenomena can manifest beyond what is found in quantitative studies, besides simply saying that one has a low boggle

threshold? No, says Braude; psi may, for instance, function below the surface in everyday life. He says, “at our current level of understanding, super psi is as viable as puny psi.” Rejecting arguments against super psi, he asserts that we have to decide whether we take seriously super psi as opposed to rejecting it, both sides being “weakly unfalsifiable,” and so we have to turn to pragmatic criteria as well as to better studies of the use of psi unknowingly in everyday life. However, because of the lack of a clear standard of what makes a particular event super, we should abandon the phrase “super psi.”

This chapter is a nice segue to the next, dealing with mental mediumship in the context of a careful examination of the factors involved in postmortem survival; in particular he focuses on the problem of personal identity as a way to examine the viability of personal survival. For instance, can a person (in the sense that we understand the term) exist without a body? In a careful examination of our use of “person,” he points out that because of cultural variability, for instance, we can’t say that our ordinary use of the term picks out a “natural kind” (i.e. a piece of ontological furniture), and we are left with Ducasse’s pragmatic solution as to how we would use the term. Say you received a call from a friend whom you had heard had died in a plane crash. If she is able to tell you of events and information that only you and she are privy to, wouldn’t you say with justification that you are talking to that person? But isn’t this what happens in the best cases of mental mediumship?

Having established that it is appropriate to refer to a postmortem person (i.e. it is not illogical), Braude turns to a focused examination of super psi (or Living Agent Psi, or LAP, a better term according to Braude). He is not impressed with much of the discussion of survival and argues that LAP is a plausible explanation for the cases presented in the literature. On the other hand, rather than being satisfied with this conclusion, he offers what would be an ideal case of mental mediumship, in which case it would be “irrational” in some sense not to conclude that communication is from postmortem survival; unfortunately, we have no case that fulfills this ideal case. So, postmortem survival is possible, but we do not yet have a case that would fully justify us drawing that conclusion.

If we can postulate that postmortem survival is a possibility, we are confronted with another problem; ordinary perception takes place from

the perspective of a physical body, but if there is no physical body, how can there be perspective in the experiences in postmortem survival? With his usual careful analysis, Braude concludes that postmortem experience can be like clairvoyance in which one can, e.g., read a page from a closed book, an example of non-perspective perception. But this gets us into another problem: If postmortem survival is like clairvoyance, then it seems to encourage us to adopt a LAP explanation for mental mediumship. This is not to deny postmortem survival, but it points out the implausibility of survivalists denying the possibility of LAP.

One thing that is clear from the detail and carefulness of Braude's arguments in the book is that he is honest, and I have to say that his characterization of the next chapter's topic, "A Grumpy Guide to Parapsychology's Terminological Blunders," is honest. It's the least satisfying of the chapters to me, not because many of his arguments are not valid, but it's just grumpy to me. And he doesn't deal with the most damning aspect of the terminology in my mind, the fact that most of it was developed in the age of Cartesian dualism (certainly Rhine's view of parapsychology fits that description). So, his conclusion that parapsychology's terminology is flawed is correct, but it is one that is generally recognized by parapsychologists.

Chapter 10 is the last chapter mainly devoted to parapsychology, and Braude has another good title, *A Peircing Examination of Parapsychology*, a chapter that deals with the contribution of the American Pragmatist Charles Sanders Peirce to parapsychology. Although Peirce's contribution is not as great as his fellow Pragmatist, William James, and although it is difficult to tease out from various comments in Peirce's work, Braude discusses the areas of mediumship and Peirce's view of fallibilism but recognizes that Peirce had not given himself over to the study of parapsychology sufficiently for Braude to say more than that Peirce had shown an approving interest in the field.

The final two chapters take us in different directions from parapsychology. Chapter 11 deals with Multiple Personality Disorder (MPD) and the Structure of the Self. Braude has published a book on issues involved with MPD, and this chapter is a revised version of one of the chapters from *First Person Plural*. A problem he deals with in the book is whether MPD shows that there is an abiding, continuous self

that underlies the many alters (alternate identities) on the one hand, or the competing view that the self must be composed simply of different selves. Braude defends the first position arguing that most MPDs occur in contexts of trauma and socially specific situations, and that the person deals with those uncomfortable events using alters as an adaptive solution but remains a unified self. Expanding this view in this chapter, Braude rejects what he calls the Principle of Compositional Reversibility, which asserts that the alters we find in MPD are clues to how the Ur-self is composed, how it is originally structured. Braude argues against several forms of the CR-principle and concludes that the divisions are creative responses to trauma and socially specific situations; thus, they are productions rather than appearances of original divisions in the self.

The final chapter might be subtitled, with due respect to Monty Python, as *And Now for Something Completely Different*. And, yet, that would not be entirely accurate. Braude is a devoted jazz pianist, and in this short chapter he promotes the analogy between jazz improvisation and ordinary conversation among friends, discussing a number of similarities and in the process displaying his knowledge of the history of jazz. But the subtitle would not be completely accurate as he suggests that just as there sometimes occur telepathic events in conversation, it would not push the analogy too far to think that the same kind of events that seem telepathic and magical occur among the players in a jazz group.

It is a great help to the field that Braude has brought together these reworked and updated chapters from diverse publications, and I wholeheartedly recommend that you proudly put this book alongside his other excellent tomes.

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The SSE has established Aspiring Explorers Awards for meritorious student research projects judged to be the most original and well-executed submissions in subject areas of interest to the SSE. A committee is in place to review all entries and determine the winners, who will receive awards of \$500 each. One award winner will have the opportunity to present a talk describing the project at the SSE Annual Meeting, for which the Society will cover their registration fee. The other award winner will have the opportunity to present a talk describing their project at the SSE Euro Meeting, for which the Society will cover their registration fee. Submissions must be made per the guidelines and deadline as stated on the SSE website “Call for Papers” for the conference you are considering attending in order to be eligible for that year’s prize for that conference.

If your paper is selected for the Aspiring Explorer Award, you will be either invited to present your talk at the meeting or able to submit your paper as a poster session. We are very excited about the recent poster sessions at annual SSE meeting, so please let your fellow student colleagues and professors know about this. <https://societyforscientificexploration.org/conferences/2020>

In addition, the SSE is also offering a 50% discount on future meeting registrations for any student member who brings one student friend to our conferences (one discount per student). We are eager to see student clubs or SSE discussion groups established at various academic institutions or in local communities. Contact us at [education@scientificexploration.org](mailto:education@scientificexploration.org) to start your own group!

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# Funding for Scientific Research 2020/2021



With the aim of encouraging the research into healthy human being's physical and mental processes, namely in fields still largely unexplored but which warrant further scientific analysis, BIAL Foundation opens now a Grants programme for Scientific Research with the following characteristics:

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**2. Addressees** - All scientific researchers will be admitted as applicants, either individually or in groups, except those working for BIAL Foundation or for any of the companies belonging to BIAL Group. The current Grant Holders of BIAL Foundation can also be admitted as applicants; however, they shall only benefit from new grants under this programme after the successful completion of the work comprised in the scope of previous awarded grants.

**3. Duration and commencement** - The total duration of the grants shall not exceed 3 years and shall commence between 1<sup>st</sup> of January and 31<sup>st</sup> of October 2021.

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The amount awarded to each Research Project shall be understood as a maximum amount, which shall be paid by BIAL Foundation upon verification of the documents of expenses submitted.

The payments shall be made annually or bi-annually. This periodicity shall be defined in accordance with the schedule of the Research Project.

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