

## UNDERSTANDING THE TYPES OF LANGUAGE IN BEHAVIOURAL SCIENCE: REPLY TO PHIL REED ON THE WORK OF ULLIN T. PLACE.

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**ABSTRACT:** Reed (2022) states that according to Ullin Place's latest view, intensional statements are not necessarily connected with mentalist language and explanations, and intensionality is the mark of the conversational. This is false. Place's view is that intensionality is the mark of a quotation. Quotations are sentences that express the content of propositional attitudes. They are characterised by what Frege called 'indirect reference' and Quine 'referential opacity'. Intensionality is nothing more than this. Intensional statements stating propositional attitudes are at the heart of the mentalist language.

Propositional attitudes are dispositions. Dispositions are the nature of things and are at the core of all sciences. The *doings* of a person are the active manifestations of dispositions. Place defines mentalism at the level of the person, which is also the level of behaviourism. This contrasts with a standard definition of mentalism at the sub-personal level, also known as centrism. Doing or behaving is interacting with the environment. This is common to the scientific approaches at the level of the person. Articulating the same conceptual foundation and language and each approach having its dialect must be possible. This is "relevan[t] for understanding the types of language that could be used in explanations given by behavioural science" (Reed, 2022).

*Keywords:* behaviourism, explanation, intensionality, mentalism, quotation, psychological languages, Ullin Place

Phil Reed (2022) must be applauded for drawing attention to a less-known part of the work of Ullin T. Place. Place is well known for his highly cited 1956 article *Is Consciousness a Brain Process?* The relevance of his work for the philosophical foundation of the behavioural sciences and of behaviourism, in particular, is underlined by the fact that he published thirteen times in this journal and its predecessor, *Behaviorism*, and that two special issues of this journal edited by Reed were dedicated to the memory of Place. However, Place wrote about the theme for which Reed asks attention, mainly in other journals. A better understanding of intensionality-with-an-s based on what Place has written should be relevant for the readers of this journal.

Despite knowing Place's work rather well (a few years ago, I started the website <https://utplace.uk> to make the complete work of Place available online), I have difficulties relating Reed's article to the views of Place. Let me explain.

Overviewing Place's work, Reed comes to this conclusion:

Ultimately, Place suggested that 'intensional' statements are not necessarily connected with 'mentalist' language, nor with 'mentalist' explanations. Rather, Place came to the view that intensionality should be taken to be the mark of the 'conversational' – that is, it is a property of verbal behaviour that characterises non-scientific everyday discourse. This view has relevance to furthering the understanding of Place's work regarding intensionality, and also relevance for understanding the types of language that could be used in explanations given by behavioural science. (Reed, 2022, abstract)

However, Place's last view on intensionality is that it is the mark of a quotation and not of the conversational, as suggested by Reed. Quotations (in indirect speech) are used to express the content of propositional attitudes like beliefs, intentions, and desires. A quotation embedded in a sentence expressing a propositional attitude is characterised by what Frege (1892) called 'indirect reference' and

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Quine (1953) ‘referential opacity.’ For Place, intensionality is nothing more than this characteristic. A statement with this characteristic is intensional, which means, because of its referential opacity, that its truth value can change when a name or an expression is substituted by another with the same reference, e.g., Peter believes that the magpie is an intelligent bird, but it may be false that he believes that the Pica pica is an intelligent bird, although Pica pica is the scientific name of the magpie. Place defends his view of intensionality as the mark of a quotation in three papers (Place, 1996g, 1999f and 1999g). In the last one, which he wrote in April 1999, 8 or 9 months before he died and was never published, he draws three conclusions, of which the third is:

We need to distinguish intentionality, as described by Brentano, Anscombe and Searle’s “intentionality-with-a-t” which is the mark of the dispositional from Frege’s “indirect reference”, Quine’s “referential opacity”, Geach’s “non-Shakespearianity” and Searle’s “intensionality-with-a-s” which is the mark of a quotation. (Place, 1999g, abstract)

Contrary to what Reed claims, for Place, intensional statements are at the heart of the mentalist language. (I will use the adjectives ‘mentalist’ instead of ‘mentalistic’ and ‘behaviourist’ instead of ‘behaviouristic.’) The prototypical mentalist explanation refers to the beliefs and desires of a person to explain their behaviour. I agree with Reed that understanding the types of language that could be used in explanations given by behavioural science is a relevant issue. I devote Part I of this paper to describing Place’s view. In Part II, I will further discuss Reed’s paper.

### **Part I: Psychological Languages, Explanation and Mentalism**

Place’s view on psychological languages and the explanations that these languages make possible remains somewhat underexposed by Reed. This will be the subject of the present section. I will focus on why “mentalistic language [is] unacceptable in a scientific psychology” (see the quote of Place (1999) by Reed on p. 26); what are the objections to mentalism? We will see that Place is critical of mentalism but is not an anti-mentalist.

In the first article of his series on Skinner’s *Verbal Behavior*, Place distinguishes between molar and molecular explanations of behaviour:

A molar explanation [...] is one in which the behaviour of [an] entity is explained by reference to the *dispositional* properties of the entity itself considered as a whole, in contrast to a molecular explanation in which the behaviour of an entity is explained in terms of the properties of its constituent parts. It is in this sense that an explanation of behaviour in terms of the supposed or known properties of the neural mechanisms involved is a molecular explanation, whereas both the standard intensional explanation of human behaviour in terms of what the agent believes, wants and intends, and Skinner’s explanation in terms of the control of behaviour by its environmental antecedents and consequences are molar explanation. (Place, 1981a, p. 21; italics added)

In this quotation, Place writes ‘intensional explanation’ whereas, in other publications, he uses the expression ‘mentalist’ or ‘mentalistic explanation,’ which he contrasts with (radical) behaviourist explanations. These explanations at the molar level of the person or organism are dispositional. Not only mentalist explanations that use mental concepts like belief, desire, and intention but also behaviourist explanations that refer to antecedent conditions and response probabilities are, according to Place (1987a), dispositional. An organism with a probability  $p$  of emitting a response when antecedent conditions (an establishing condition or motivational state and a discriminative stimulus) occur is in a dispositional state; this disposition is a propensity to emit the response with a chance  $p$  in the given antecedent conditions.

The third kind of explanation that Place distinguishes is the molecular explanation that reduces psychological phenomena to underlying (sub-personal) mechanisms. These mechanisms can be described functionally by an information-processing model. Ultimately, the intention is that this model gets a neurophysiological interpretation. Place (2000a) developed a molecular explanation for consciousness in a chapter called *Consciousness and the “Zombie-Within:” A Functional Analyses of the Blindsight Evidence*. In this chapter, the modules of two systems—Consciousness, and the Unconscious Automatic Pilot or the Zombie-Within—and their interactions are first described by Place

in functional terms. Next, he proposes the locations of the modules within the brain. In this way, Place develops a neuropsychological theory of consciousness.

For scientific purposes, Place prefers the language and explanations of behaviourism over those of mentalism at the molar, personal level. However, what are his reasons for this? It cannot be because mentalist explanations use dispositions; as we have seen, the same applies to the explanations of the behaviourist. There is a fundamental reason for the use of dispositions which has to do with the fact that any science is studying causation – “the causal action of one thing on another” (Place, 1996j, p. 136). Underlying causality, there are laws. Place distinguishes three kinds of law statements:

Individual law statements that describe the dispositional properties of particular individuals ...;  
universal law statements that describe the dispositional properties of things of a kind ...; [and]  
scientific law statements that describe in quantitative terms the relation between the dispositional  
properties of things of a kind and the effect they produce. (Place, 1996j, p. 137)

All these laws are laws of nature. In the case of a particular thing “the *dispositional* properties ... are substantive laws of the *nature* of the property bearer” (Place, 2000d, p. 40; italics added). So, dispositions are the nature of things; they are the way things behave, and therefore all empirical sciences are the study of behaviour (Place, 1996j, p. 136).

However, what makes mentalism not fit for the scientific study of behaviour? Place points to dispositional statements with *quotations* of what someone has said or might say as the grammatical object of the verb. A quotation is typically in *oratio obliqua* or indirect reported speech and expresses what Geach (1957, p. 9) has called the “gist or upshot” of what is said or might be said (Place, 1981a, p. 6). Examples of sentence frames of dispositional statements that take a quotation as the object of the verb are ‘*S* believes that *p*,’ ‘*S* knows that *p*,’ and ‘*S* wishes that *p*.’ Replacing *S* with a personal pronoun, a person’s name, or a description of a person and *p* with a sentence expressing a proposition transforms the sentence frames into sentences. *p* is a quotation of what *S* said or could say and is thus a linguistic entity in the language spoken by *S*. Because only humans have language, *S* must refer to a human being that acquired a language and not to an animal or a prelinguistic child that has no language (yet). ‘*S* believes that,’ ‘*S* knows that,’ and ‘*S* wishes that’ are so-called *intensional contexts* within which the embedded sentence *p* is *referentially opaque* (Quine, 1953). This means that a descriptive expression within *p* cannot be replaced by another expression that refers to the same object or person without changing the sentence’s truth value; substituting an expression by a co-referring expression is not *salva veritate*; this phenomenon is, as we already saw, known as *indirect reference* (Frege, 1892) or *referential opacity* (Quine, 1953). To give an (adapted) example by Place (1981a), in “Jones knows that Skinner wrote *Verbal Behavior*,” we cannot replace “*Verbal Behavior*” with “the book that Chomsky reviewed in 1959” because “Jones knows that Skinner wrote *Verbal Behavior*” can be true without “Jones knows that Skinner wrote the book that Chomsky reviewed in 1959” being true. Reed’s example of what he calls the non-substitutability in intensional contexts is unfortunate: “If it is said that: ‘Jones believes the singer with Blondie is Debbie Harry,’ and it is said also that: ‘Jones believes the singer with Blondie is excellent’, it *does necessarily* mean that: ‘Jones believes Debbie Harry is excellent’” (Reed, 2022, p. 25; italics added). However, in this case, the substitution of ‘the singer with Blondie’ by ‘Debby Harry’ is allowed. Usually, however, this substitution is not permitted in an intensional context because, as Reed writes directly after this example: “In an intensional context, whatever is true of [an object or person] (i.e., the singer with Blondie) under one description of that [object or person], *does not necessarily* apply to it under any other description” (Reed, 2022, p 25; italics added; the text between square brackets replaces ‘a term’ resp. ‘term’ to make the statement correct). A slightly different example is that from “Jones wants to smoke pot” and “Smoking pot is a criminal offence,” we cannot infer “Jones wants to commit a criminal offence” (Place, 1981a, p. 5). It is clear that ‘smoking pot’ cannot be substituted by ‘committing a criminal offence’ unless Jones intended to commit a criminal offence by smoking pot. This is an example of *referential opacity*. However, it is not directly evident that there is a quotation involved. This becomes clear when asked what Jones said or could have said: “I want to smoke pot.” The intensional sentence that reports this quotation is “Jones says he wants to smoke pot.” An animal or a prelinguistic child could not have said this. From a third-person perspective, it is possible to attribute wants to an animal and a young child. In that case, the sentence expressing the

want is *referentially transparent* (not opaque), as was noticed by Davidson (1982); quotation as a linguistic device to express the want of an animal is not applicable:

Take, for example, the case where a dog wants its master to throw a stick and the stick is four foot long. We can still say that it wants its master to throw a four foot long stick. This would seem to confirm the view that failure of substitutivity *salva veritate* occurs only where a possible misquotation is involved. (Footnote added in 1999 to Place, 1981a)

According to this quotational account, mental dispositions like beliefs, desires and intentions can only be attributed to skilled language users.

But for theoretical and scientific purposes where accuracy, precision and the avoidance of misleading implications are important, we cannot justifiably condone the circularity involved in describing and explaining the linguistic skills of the language user in a molar language which presupposes that the language user already possesses those skills whose possession by the language user is to be described and explained. (Place, 1981a, p. 22-23)

This looks like a convincing argument against using mentalist language for the scientific study of the verbal skills of humans. However, it is not an argument against mentalist explanations of other kinds of behaviour. Place (1998d) notices the objection behaviourists traditionally make “to the use of what have been called ‘*mentalistic explanations*.’” However, he adds that it has never been made entirely clear “[e]xactly what kinds of explanation qualify as ‘*mentalistic*’ and why they are objectionable” (Place, 1998d, p. 27). He takes it that a mentalist explanation uses a language that talks about mental *processes*, instantaneous mental *events*, and ongoing mental dispositional *states*, with which we are all familiar as the psychological language of common sense. Place (1999a) explains that dispositions are states which persist unchanged over a period of time, processes are also extended over time but with continuous change, and instantaneous events (stops and starts) are not extended over time but occur at moments of time and are the endings of a process or state where another process or state begins. Later, we will say more about Place’s classification of mental properties in terms of process, event, and state.

We have seen that mental dispositions like beliefs, desires, and intentions imply linguistic competence. However, there are mental dispositional states, especially emotional states like being pleased, excited, angry, frustrated, afraid, depressed, and relieved, that do not suppose linguistic competence and which can be shared with animals; see Place (1982, p. 126) for an interpretation of emotions in operant language. Also, active mental processes like paying attention, looking for/at, listening and savouring, and passive mental processes such as experiences, feelings and sensations are present in animals.

Mentalism is the psychological language of common sense; it is folk psychology. Place claims that

folk psychology ... is a linguistic universal. In every natural language which is currently spoken, in every ancient language and culture of which we have decipherable records, the same basic concepts, the same explanatory scheme, are deployed in the accounts that are given of the actions both of the speaker/writer and of other human beings. (Place, 1996l, p. 264)

Folk psychology is used in all cultures in the same way “to predict and manage interpersonal relations” (Place, 1996l, p. 265). The common sense knowledge about this interpersonal environment is shaped by the actual causal relations between behaviour and its consequences. These causal relations are, however, seen from the perspective of a human agent trying to master his environment, and this is an anthropocentric perspective that is difficult to reconcile with the scientific goals of objectivity and unbiasedness. Moreover, as we have seen, many mentalist explanations presuppose a linguistically competent organism, and when applied to animals, the perspective becomes anthropomorphic. According to Place,

the principle of the unity of science requires a theory that will apply to all forms of human and animal behaviour. Consequently, a form of explanation which is restricted in its scope to those aspects of human behaviour which are indeed controlled by linguistic formulations of the contingencies involved is unacceptable for the purposes of scientific theory; though equally unacceptable is a theory

which cannot accommodate the phenomenon whereby a great deal of human behaviour is controlled in this way. (Place, 1998d, p. 27)

Nearly twenty years earlier, Place (1981a, p. 9-10) mentions a similar argument by behaviourists in the tradition of Skinner. A sharp division between the behavioural capacities of humans and animals is claimed to be incompatible with Darwin's Theory of Evolution. A scientific theory is therefore required that uses the same concepts for talking about the behaviour of humans and the behaviour of animals. Place finds this argument not convincing. Perhaps we must accept that there is "a radical difference of kind between human and animal behaviour and the fact that humans talk whereas animals do not is a reflection of precisely this difference" (Place, 1981a, p. 10). This illustrates Place's (1998d) observation that it is never made entirely clear why mentalist explanations are (in all circumstances) objectionable.

Not in all circumstances is explaining behaviour by quoting what an agent said or thought (said to herself) objectionable. Place has widely written about Skinner's distinction between rule-governed and contingency-shaped behaviour and the verbal stimulus as specifying a contingency by which the behaviour of an agent is (verbally) controlled. This relates to what he called "behavioural contingency semantics," introduced in his fourth article on Skinner's *Verbal Behavior* (Place, 1983d, pp. 173-175). Later he preferred to call the theory 'contingency semantics.'

According to this theory, a sentence acquires the property of orientating the behavior of the listener towards the impending presence of a contingency of a particular kind by virtue of an *isomorphism* between the structure and content of the sentence and the structure and content of one or more of the *situations* of which the contingency consists. (Place, 1996j, pp. 128)

An even grander project is "linguistic behaviourism as a philosophy of empirical science" (Place, 1996j). When behaviour is rule-governed in Skinner's sense, there is room for mentalist explanations in terms of beliefs and desires. However, these explanations suppose that the agent is behaving rationally or, in other words, that there is "a consistent rational and causal connection between what is said and what is otherwise done" (Place, 1978a, 1981a, 1984a, 1984c, 1987a) and this is not always the case. The agent's explanation of her behaviour is after the fact, which can make it unreliable and even be just a rationalisation of her behaviour. If the assumption of rationality fails, there is no place for a mentalist explanation. Moreover, the phenomenon of rational behaviour has to be explained, and a mentalist explanation will not do because of the circularity involved. (Reed does not discuss the assumption of rationality, but it is mentioned in a quotation by Reed from Place (1981a, p. 13); see Reed (2022, p. 31).)

Mentalism seems to be mainly a problem for authors with sympathy for behaviourism. B. F. Skinner is the most prominent example of someone who raised objections to mentalism. Burgos & Killeen (2019) recently wrote about the *war* between anti-mentalists and mentalists, which they want to bring to rest. Burgos & Killeen try especially to convince the anti-mentalists. However, according to Burgos & Killeen, the mentalism that is the "enemy" of the anti-mentalists is not the mentalism with which Place was struggling. Although mentalism is not one well-defined view, the key to all forms of mentalism is, according to Burgos & Killeen (2019, pp. 245; italics added), "*the view of mental inner causation of behavior.*" Zilio (2016) appropriately called this *centrism*.

I define *centrism* as any kind of organism-centred explanation of behavior; in other words, it is the practice of providing explanations of behavior solely in terms of internal/intermediate events, whether purely conceptual (e.g., mind/cognition) or real (e.g., brain). That is the main characteristic of mentalistic explanations of behavior ... (Zilio, 2016, p. 205)

The mentalist explanation in terms of beliefs and desires, according to Place, prototypical of mentalism, is not mentioned once by Burgos & Killeen, and this might explain why Burgos & Killeen do not discuss intensionality (nor intentionality) as a potential problem of mentalism. Beliefs and desires are dispositions and are not mental inner causes of behaviour. Attributing dispositions to a person characterises how the person behaves or will behave in certain situations. Furthermore, we have seen that this is no different for the behaviourist, although she will use other dispositional concepts than the mentalist. Place is strongly influenced by Ryle (1949), who tried to develop a dispositional theory of mental concepts in which there is little or no place for internal, private mental occurrences. However, as indicated earlier, the language of mentalism also talks about mental

*processes* and instantaneous mental *events* and not only about ongoing mental dispositional *states*. Mental processes are (mainly) internal and, as such, seem more in line with Burgos & Killeen's view on mentalism as the thesis that the mind is causal and internal.

In one of his latest articles, which appeared after he died in 2000, Place (2000d) defended a two-factor view of the mind that goes back to his first publications in the fifties of the last century. The mind, or perhaps better the mental, consists of, on the one hand, the mental processes and events that can be identified with brain processes (Place, 1956) and, on the other hand, the dispositional states of the organism/person as a whole that cannot be reduced to states of the brain although they are causally related. Place (1954) argued against Ryle that an important category of mental concepts refers to internal mental processes that relate to consciousness and attention. In a follow-up paper, Place (1956) defended the possibility that these conscious processes are identical to brain processes. For now, we abstract from the relationship between the mind and the brain and focus on the conceptual categories of the mentalist language.

Place makes an essential distinction within the category of mental processes between *mental activities* (active mental processes) and *experiences* (passive mental processes). I summarised Place's classification of mental concepts as follows:

The classification makes a distinction between what we mentally do (mental activities), what we achieve when a mental activity leads to a new or changed mental disposition (mental acts), what we experience or passively undergo (experiences), what we know, believe or think, intend and want (specific mental states or dispositions), and the emotional states of mind we can be in. (Place, 2021)

Knowing, believing, thinking (as a disposition, not as an activity), intending, and wanting are active dispositional states in contrast with the emotional states of mind, which are passive mental dispositions. Mental activities and active mental dispositions are active in different ways. Mental activities are things you can do and over which you have a certain amount of control. It is meaningful to talk about starting and stopping a mental activity at will. (Starting and stopping a mental activity are mental acts.) Although we can use the active verb 'to believe' in the case of beliefs, you do not have the same active control over your beliefs (or expectations, wishes, needs) as you have over mental activities like listening, looking, thinking, calculating, or paying attention. You can be engaged (involved, occupied) in an activity but not in a mental disposition. Everything you actively do, whether it is a mental activity or overt behaviour, is a manifestation of mental or behavioural dispositions. For example, I believe that my watch is in the living room; therefore, I look in the living room and not somewhere else for the watch. I like arithmetic; therefore, I do calculations (in my head). There seems to be no fundamental distinction between mental activities and overt behaviour. Both are active doings of a person. In the behaviourist tradition, behaviour is external, overt, and public. Initially, Place was of the opinion that mental activities are (mainly) internal, covert, and private. However, Place (1985c) treats mental activities as behaviour and, more particularly, as (in part) operants. He talks about "semi-covert behaviour" and distinguishes three varieties: 1. attending behaviour, 2. emotional reactions, and 3. self-directed verbal behaviour or thinking. Emotional reactions are not relevant to our discussion of mental activities because they are passive, and in the terminology of Skinner, they are respondents. Attending and thinking are semi-covert because although they are predominantly covert, they also have overt manifestations, e.g., moving the body and the head to focus attention and thinking aloud. However, if mental activities are behaviour in the sense of doing something, there is no need for the "semi" in semi-covert. There is just behaviour, and that can be overt or covert. Notice Skinner's (1938, p. 6) definition that "Behavior is what an organism is doing." Later, Skinner wrote "The mind is what the *body* does. It is what the person does. In other words, it is behavior" (Skinner, 1987, p. 784; as cited by Zilio, 2016, p. 207).

A special case of behaviour is *holding still*. It is also "something we do, but obviously without moving—if we move, we stop or fail to hold still" (Myin, 2015). Holding still is an effort not to move. Without an effort, it would not be holding still but doing anything. All doings, mental activities, and overt behaviour involve effort to start, continue, and end the process.

Now we can return to the experiences and feelings categorised as passive mental processes. They are not what we (including animals) actively do but what we passively undergo. They can be the result of what we actively do, but the resulting feelings of touch, the having of pain, the having of headache,

or the having of a thought themselves are what we undergo. Critical is the starting and stopping of the activities. If a person or an organism can start and stop an activity, it is a doing, or I would say it is behaviour. However, if a person or an organism cannot control the starting and stopping of a process, then this is something that it undergoes (see also Place, 2021).

Of the mental categories distinguished by Place, only the passive mental processes, i.e., the (conscious) experiences and feelings, are essentially internal and private. Mental activities are primarily internal and private, but not necessarily so; they can also be overt. Mental dispositions are neither internal nor external. They manifest themselves in behaviour only in the right conditions; a mental or physical disposition is not observable outside these conditions. That a glass is fragile, to use a physical example, is shown as it is smashed and breaks; but if no force is exerted on the glass, the fragility cannot be observed. So too, we can conclude that the mental is, in most cases, not publicly observable. In this respect, Place would agree with Burgos & Killeen. He would also support their argument that public non-observability of the mind is not a valid objection to mentalism.

The research of Daniel Kahneman is said by Burgos & Killeen to be conducted under a mentalist framework (Burgos & Killeen, 2019, p. 250). I restrict myself to the work that Kahneman did in collaboration with Amos Tversky and that he described in his book, "Thinking, Fast and Slow" (Kahneman, 2011). The title of the book is very apt for describing their work. It is about *thinking*. As explicated by Place, thinking is a mental activity in the mentalist language. However, mental activity is not a cause of behaviour, but a form of behaviour, in the sense of something we do. So, to say that thinking is an internal cause of behaviour, the key feature of mentalism, according to Burgos & Killeen, is at least a different way of conceptualising thinking. For Burgos & Killeen, a mentalist explanation refers to something mental that occurs in the person or organism that mediates between the environment and public observable behaviour. However, this makes a mentalist explanation a molecular explanation, as described earlier. For Place, mentalist explanations are molar; they are at the level of the person or the organism. And this is also the level of the research of Kahneman and Tversky. Even though Kahneman (2011) introduces two (interacting) systems, System 1 and System 2, which suggests that his theory is molecular, this is, in fact, another way of saying that there are two ways of thinking: *fast* thinking when the thinker does not take the time to consider different options or solutions and *slow* thinking when the thinker takes his time. Kahneman is the first to consent that System 1 and System 2 are *fictions* that "do not really exist in the brain or anywhere else" (Kahneman, 2011, p. 415; see also p. 28 ff.). It is a powerful "thinking" tool that helps Kahneman add new concepts to the mentalist terminology to explain what happens in fast and slow thinking. It helps the reader better understand what happens when we think fast and slow. "You will be invited to think of the two systems as agents with their individual abilities, limitations, and functions" (Kahneman, 2011, p. 21).

Instead of dividing the person or organism into subsystems, as is done in molecular explanations, you can analyse the behaviour or activity of a person in sub-activities. This happens when Kahneman notices that paying attention is a necessary component of slow, deliberate thinking (Kahneman, 2011, p. 23 and chapter 2). Also, in slow thinking, a person has to remember ("store") intermediate results and make them available when needed in a subsequent step (a good strategy is to write intermediate results down on a piece of paper). Intermediate results can also be the result of fast thinking. Thus, fast thinking can influence slow thinking. It is an example of the interaction between System 1 and System 2, but only in a metaphorical way.

This all is on the molar level of the person. We go down to a lower molecular level when an attention system and a memory system, e.g., a memory store, are postulated because we are interested in the underlying (cognitive) mechanism. However, this is not what Kahneman is doing. Especially for fast thinking, Kahneman and Tversky introduced new terminology to *describe* and explain what is happening. They introduced heuristics and biases that characterise how people come to a judgement or a decision. Their work is more descriptive than explanatory; their interest is to know how people think in solving a task or a problem. With their new terminology, better descriptions of what is happening can be made. This terminology must be seen as an addition to the mentalist language as described by Place. Adding to the mentalist language is also seen in social psychology; an early example is the concept of cognitive dissonance, as Festinger (1957) introduced.

The way mentalism is defined can lead to different evaluations of mentalist theorising. On page 261, Burgos & Killeen mention the positive influence of behavioural analysis on mentalistic,

associationist theorising by citing work of Dickinson and Rescorla in which reinforcer devaluation is used as a research procedure. Place (1991f) is critical of the mentalist interpretation by Dickinson of the reinforcer devaluations experiments, while he supports the mentalist interpretation by Rescorla. This is the way Place introduces the theories of Dickinson and Rescorla:

[I]n order to account for the results of the reinforcer-devaluation experiment, we are confronted with a choice between Tony Dickinson's theory which holds that what the animal *learns* in an instrumental/operant learning situation is to *believe that* pressing the lever will result in the delivery of a particular foodstuff and that what it *does* depends on whether it *wants* or *does not want* that foodstuff, and Bob Rescorla's theory which holds that what the animal learns is the same as that in classical/respondent conditioning, namely to *expect, anticipate, or predict*, a succession of stimulus events in the order of the three term-contingency *stimulus - response* (or rather, stimulus feedback from the emission of the response) and *outcome* or *consequence*. (Place, 1991f)

In the abstract of his paper, we read Place's evaluation of these theories:

Since the grammatical object of the verbs 'know,' 'believe,' and 'think,' as they occur in belief/desire explanations, takes the form of an embedded indicative sentence in *oratio obliqua* or indirect reported speech, Dickinson's explanation of instrumental/operant learning in animals involves the scientifically unacceptable metaphor of linguistic initiation and control. Rescorla's theory, on the other hand, requires nothing more than that the organism learn to 'expect' or 'anticipate' an event (the *outcome*), given the combination of an antecedent discriminative *stimulus* and the stimulus constituted by the incipient emission of the *response* which it evokes. (Place, 1992j, from the Abstract)

Knowing, believing, thinking, expecting, and anticipating are dispositional states of which the first three suppose a linguistic competence and cannot be used in theorising about learning by animals as is done by Dickinson. Again, Place is most critical of mentalism when language proficiency is falsely assumed. This criticism is not available to Burgos & Killeen because they use a different definition of mentalism. Place has no objections to the use of mentalist notions of expectation and anticipation by Rescorla. Objecting would also make him incredible because Place uses the notion of expectation in his neuropsychological theory of consciousness, which we referred to above, as an example of a molecular explanation. According to Place (2000a), consciousness has the function of dealing with inputs that are problematic because they are either *unexpected* or motivationally significant.

Overseeing Place's publications, I conclude that his attitude towards mentalism is somewhat ambivalent. Sometimes he writes firmly about the behaviourist repudiation of mentalism, but other times his words are more carefully chosen. Because he relates mentalism to folk psychology and folk psychology has other purposes than being a science, there are the dangers of mentalism as the language of folk psychology leading us astray when used in a scientific context. Place (1996l) discusses six dangers of using folk psychological language in science:

1. the creation of bogus abstract entities by the process of "nominalizing" predicates and other non-substantival parts of speech,
2. the persistent use of adjectives with evaluative (good/bad) connotations,
3. the systematic evaluation of the content of other people's cognitive attitudes and judgments from the standpoint of the speaker,
4. the distortion of causal accounts of human action by the demand for a single scapegoat on whom to pin the blame when things go wrong,
5. the use of the metaphor of linguistic control when explaining behavior that is not subject to that type of control,
6. the unavoidable use of simile when describing private experience. (Place, 1996l, p. 264)

However, if we are aware of these dangers, mentalism can be used as a scientific psychological language, although Place would prefer behaviourism where possible. Place (1978a), a licensed clinical psychologist, argues that mentalism is unavoidable in clinical practice, especially when a client's behaviour must be modified by changing the individual's self-directed verbal behaviour; in the end, mentalism is the client's language.

As we have seen, according to Place, mentalism is the explanation of human behaviour with the help of the psychological language of common sense. Trained in Oxford in the ordinary language philosophy tradition, Place systematised the psychological language of everyday life using conceptual



analysis. This resulted in the classification of mental concepts as discussed above. In this way, he made explicit the conceptual foundation that is used by mentalist theories in psychology. These theories operate at the molar level of the person, which is the same level of behaviour analysis as discussed earlier. It is the level at which the person or an organism actively interacts with its environment. Skinner said: “Behavior is that part of the functioning of an organism which is engaged in acting upon or having commerce with the outside world” (1938, p. 6). Earlier, we mentioned Place’s view that dispositions are the nature of things; they are the way things behave, and we should add: they are the way things behave in interaction with their environment because there is no behaviour without environment. Approaches that operate at the same molar level of the person as behaviourism and mentalism are, e.g., ecological psychology as inspired by J. J. Gibson, ethology, behavioural economics, 4E approaches to cognition and radical enactivism. It must be possible to articulate a common conceptual foundation: one language, each with its dialect, to describe, understand, and explain the doings of humans and other animals in relation to their environment. This is “relevant for understanding the types of language that could be used in explanations given by behavioural science” (Reed, 2022, p. 20).

## **Part II: Comments on Reed (2022) – The concept of intensionality in the work of Ullin T. Place**

Reed’s terminology is not always in sync with Place’s. An example is the phrase ‘intensional proposition’ that Reed uses eighteen times, while Place never used it for good reasons. A proposition or a thought is expressed by a sentence. The same proposition can be expressed by “a wide variety of sentence utterances having only the same “gist or upshot” in common” (Place, 1984c). The sentences expressing the same proposition say “the same thing in the sense that all these different sentences, when uttered in the appropriate context, *have the same meaning*” and, if they are indicative sentences, the same truth conditions” (Place, 1991f, p. 273; italics added). In line with this, Place defines a proposition as an “intensional” or “modal class,” that is, a class that

comprises all possible sentence utterances in any natural language that now exists, may have existed in the past or may exist in the future whose common feature is that they are all indicative sentences, all have the same truth conditions, and all identify the objects, states of affairs or events to which they refer in the same or corresponding ways. (Place, 1991f, p. 273)

If there are *intensional propositions*, as Reed lets us think, then there are, I suppose, also *extensional propositions*. An *extensional proposition* is probably a proposition limited to all existent (in the past, now, and in the future) uttered sentences that express the proposition, excluding the possible sentences never uttered and never to be uttered in the future. However, according to Place’s definition, this is *not* a *proposition*. I think wherever Reed writes “intensional proposition,” this can be read as “intensional sentence,” “intensional utterance,” “intensional locution,” or “intensional statement” (there are subtle differences between these phrases, but I take them all to be expressions of propositions); Reed never uses the first two phrases; however, “intensional locution” is used fifteen and “intensional statement” is used even twenty-nine times by him. I take it that these are either *referential opaque* sentences (utterances, locutions, statements), that is, sentences with an intensional context, as discussed in Part I, or *modal* sentences, that is, sentences that use a modal operator, such as the adverbs ‘necessarily’ and ‘possibly’ “and their more common equivalents such as ‘must,’ ‘has to,’ ‘might,’ and ‘can’” (Place, 1981a, p. 7). So, using the phrase ‘intensional proposition’ is confusing, if not incorrect. The sentences expressing a proposition can be intensional, not the proposition.

On page 21, Reed starts a section titled ‘The potentially confusing nature of intension and intensionality.’ Indeed, intension and intensionality are complicated notions; Place’s work from the eighties also shows this. Place later found his first publication on the subject (Place, 1981a) partly outdated. The unpublished Place (1984c), heavily used by Reed, reads as a struggle with the subject. Unfortunately, Reed’s article does not clarify the issues. A fatal flaw in Reed’s article is that the noun ‘intension’ is confused with the adjective ‘intensional’ and the corresponding noun ‘intensionality.’

Reed defines intensionality by defining intension as if the two are the same thing. Reed writes on page 24:

To focus on what Place viewed as the key aspect of intensionality, as this is the central thrust of the current paper, we can turn to his article: “*On the relation between intentional-with-a-T and mental phenomena and intensional-with-an-S, mentalistic and oratio obliqua locutions*” (Place, 1984), in which he defines intensionality as follows: “...the intension of a predicate expression is used to classify members of a universe of discourse into those items to which the predicate applies and those to which it does not.” This view of the key aspects of intensionality was the one Place held across all of his writings when trying to explore the nature of [intensional] statements ...

This is an example of defining intensionality by a definition of intension. The citation is from Place (1984c). It looks like that Place is responsible for defining intensionality by defining intension. However, this is absurd. The surrounding text that Reed does not quote clarifies that Place is here not writing about intensionality and that he is not giving a definition, but is explaining how in an extensional logic, intension is used. What is said is that in extensional logic, intension determines the extension of predicates, i.e., of terms and descriptions. Note that this also applies outside an extensional logic. This is a key aspect of intensions, but *not* of intensionality, as claimed by Reed. Later, we will see what the key aspect of intensionality is according to Place.

Intension is a technical term of philosophers and logicians for the meaning of terms (words) and descriptions. In his classic paper on the meaning of words, Putnam (1975) explains the introduction of the term *intension* (and *extension*):

Since the Middle Ages at least, writers on the theory of meaning have purported to discover an ambiguity in the ordinary concept of meaning, and have introduced a pair of terms – *extension* and *intension*, or *Sinn* and *Bedeutung*, or whatever - to disambiguate the notion.

So intensional is a characteristic of (some) sentences, and (all) words have an intension that determines their extension. ‘Intension’ is a notion distinct from ‘intensional’ and ‘intensionality’ and must not be confused with each other as Reed does.

The most extensive discussion of intension by Place is in the already mentioned unpublished Place (1984c). However, the role of intensions in this paper’s main argument is marginal. In his last published articles on the subject – Place (1996g) and Place (1999f) – intension does not play any role in the argumentation. This relieves me from further reviewing the sections ‘The potentially confusing nature of intension and intensionality,’ ‘The characteristics of intensional propositions,’ ‘Extension and intension,’ and ‘Determining meaning in extensional and intensional cases’ because of Reed’s intension-intensionality confusion.

Reed introduces in four different sections *intensionality* as the mark of the mental (Reed, 2022, p. 26), of the intentional (Reed, 2022, p. 29), of the dispositional (Reed, 2020, p. 30) and of the conversational (Reed, 2022, p. 32). Place has discussed *intentionality*, *not* intensionality, as the mark of the mental and the dispositional. He concludes that intentionality is the mark of the dispositional, not the mental. This is a minority view. Most philosophers, such as Crane (1998), defend intentionality as the mark of the mental. Despite the title and the content of Crane’s paper, Reed mentions Crane as an example of a philosopher who defends intensionality, not intentionality as the mark of the mental. Crane is very explicit that intensionality is not a mark of the mental because his argument is that we should not use linguistic criteria to characterise the mental, and intensionality is such a linguistic criterion. It is incomprehensible why Reed misrepresents Crane’s position.

In the section on intensionality as the mark of the conversational (Reed, 2020, p. 32), Reed states that there are problems with the degree to which “intensional statements can be given precise meaning (see Place’s 1999f article “*Vagueness as a mark of dispositional intentionality*”), and [which] lead Place to re-evaluate, for the final time, the manner in which intensional statements should be characterised (Place, 1999f).” However, Place (1999f), from now on to be referred to as the Vagueness article, is not about intensional statements; the article is about dispositional intentionality and its relation to vagueness, see the title of the article. The adjective ‘intensional’ is only used once by Place. The Vagueness article summarises the main arguments of Place (1996g). Vagueness is already proposed in this 1996 article as one of the marks of dispositional intentionality. In the Vagueness article, there is no re-evaluation of

how intensional statements should be characterised. New in the Vagueness article is the addition of a fourth mark of dispositional intentionality without changing Place's central thesis from 1996 that intentionality is the mark of the dispositional. Vagueness is together with three other marks that define 'intentionality' according to Place the mark of the dispositional, which explains the title of the article: Vagueness as a Mark of Dispositional Intentionality [notice: *a* mark and not *the* mark].

On page 33 of the same section, Reed relates vagueness to what Geach (1957) has called the "gist or upshot" of what is reported about what a person believes, intends, desires, or knows. As we already have seen, the report is a quotation in *oratio obliqua* or indirect reported speech, but this link with a quotation is not (explicitly) made by Reed; see also below. There is an indeterminacy in how to express or report beliefs, etc. There is a choice in the words or the language to be used. This could also be called vagueness, but it is not what Place (1999f) means in his Vagueness article and to which Reed refers. In the previous paragraph, it was noted that vagueness is used as a property of dispositions. The idea of the vagueness of dispositions is not from Peter Geach (1957) but from his wife, Elizabeth Anscombe (1965). Both mental and physical dispositions are vague or indeterminate, meaning that the class of potential manifestations is open, not fixed (it is a modal class). A brittle glass can break in many ways, all being (potential) manifestations of its brittleness. The intention to put a book on the table can also be manifested in many ways; the book can be put down anywhere in particular on the table – to give an example of Anscombe. In sum, vagueness, as used by Place, has nothing to do with the vagueness of everyday conversation, as Reed wants us to believe. Vagueness is the indeterminacy of the potential manifestations of physical and mental dispositions.

Place never used "conversation\*" in any of the papers referenced by Reed. The latest publication of Place that discusses conversations is the article from 1998 titled "Behaviourism and the Evolution of Language" (Place, 1998c). Here, the role of reinforcement in the continuation of a conversation is analysed. There are also earlier papers about the analysis of conversations. However, 'conversation' and 'intensionality' are *never* connected. This is also impossible because intensionality is a property of linguistic entities (as also claimed by Crane) and, therefore, cannot be a property of something extra-linguistic like the conversational, which is a form of verbal *behaviour* (emphasis on 'behaviour'). In the same way, intensionality cannot be the mark of the mental (as discussed in a section on pp. 26ff), the intentional (as discussed in a section on pp. 29ff), and the dispositional (as discussed in a section on pp. 30). These three phenomena are non-linguistic and cannot be associated with intensionality, as done by Reed. The only linguistic phenomenon that Place links to intensionality is using quotations in psychological sentences. I already discussed the role of quotations in mentalist language. Reed never refers to Place's thesis that intensionality is the mark of a quotation. The only time the role of quotations is mentioned is when Place mentions it himself in a citation by Reed (2022, p. 26). However, outside this citation, the importance of quotations in the work of Place is never highlighted by Reed. The first time that Place writes in a published paper about the quotational theory was in Place (1981a), and the last time was in Place (1999f). As Reed notices, there is a development in Place's views concerning the topic of intensionality, but quotations have always played a role in his thinking. One can argue that Reed discusses quotations implicitly without naming them as such. Still, it remains remarkable that *quotations* are not mentioned by name and that Reed explicitly mentions conversations as the end point of Place's thinking about intensionality, which Place never discussed. This means that Reed has completely missed the point that Place wanted to make about intensionality: "Intensionality *alias* indirect reference *alias* referential opacity is the mark of a quotation" (Place, 1999f, p. 108). For these reasons, it is astonishing to read in the abstract, as quoted earlier in the introduction:

Place came to the view that intensionality should be taken to be the mark of the 'conversational' – that is, it is a property of verbal behaviour that characterises non-scientific everyday discourse. This view has relevance to furthering the understanding of Place's work regarding intensionality, and also relevance for understanding the types of language that could be used in explanations given by behavioural science. (Reed, 2022, p. 20)

The view attributed by Reed to Place was never Place's view and can also not be attributed to him because Place would be the first to notice that it is incorrect. So this view is irrelevant and will not help understand Place's work better, nor the types of language that can be used in explanations in the behavioural sciences. I am sorry; I would have liked to draw a more positive conclusion.

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Note: The lowercase letters after the publication date of the publications by U. T. Place refer to the sorting in his bibliography at <https://utplace.uk/bibliography>. The bibliography contains links to downloadable versions of Place's publications.

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