

On Baum's Public Claim That He Has No Significant Private Events

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Baum (2011) grudgingly concedes that Skinner got a few things about private events right but represents Skinner's account of them as "a misguided effort to render behaviorism acceptable to laypeople by suggesting that they offer an account of mental life" (p. 186). Baum eschews attempts to analyze or interpret the histories leading to private talk, arguing that, viewed on a molar scale, such details become irrelevant. His opinion is that molar accounts of behavior are all we need to know; we should ignore the private parts.

Let us start with Baum's abstract, where he begins, "Viewing the science of behavior (behavior analysis) to be a natural science, radical behaviorism rejects any form of dualism, including subjective-objective or inner-outer dualism" (p. 185). He pairs *subjective-objective* with *inner-outer* as his examples of dualisms, which he says radical behaviorism has rejected. Later he will agree with Skinner that the skin is not that important as a boundary, but saying that the world is made of one kind of stuff and thereby rejecting the mental-physical dualism implicit in *subjective-objective* is far different from saying that some parts of the world can be separated by boundaries from other parts of the world, as when *inner* and *outer* are on different sides of an organism's skin. By treating in parallel "The radical behaviorists' denial of mental inner space" and "The rejection [by radical behaviorists] of this fundamental inner-outer dualism" (p. 186), Baum equates these

two dualisms as if one were as likely as the other to lead to conceptual difficulties.

Treating an argument against dualism as comparable to discussing private events is to make a category error. One is concerned with the characteristics of a natural science, and the other is concerned with the origins of particular kinds of verbal behavior within a natural science. Just as biologists reject vitalism while they work out what goes on within organisms and within their cells, behavior analysts can reject mentalism while they look within. Sometimes treating the skin as a boundary is useful and sometimes not, but the dichotomy respected in those cases in which it is treated as a boundary does not entail dualism of the mental-physical or subjective-objective sort.

Things get more interesting in Baum's second sentence: "Yet radical behaviorists often claim that treating private events as covert behavior and internal stimuli is necessary and important to behavior analysis" (p. 185). Here again radical behaviorists are the target. Baum does not explicitly tell us who they are, but it is easy to figure out: either those who have advocated the work of B. F. Skinner, or Skinner himself. So let us rewrite this sentence as Baum should have written it: "Yet Skinner often claimed that treating private events as covert behavior and internal stimuli is necessary and important to behavior analysis." Baum, a stealth critic, has taken on Skinner, although only implicitly.

Now there is nothing wrong with taking on Skinner. When I was a graduate student, most of us sought

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to catch Skinner wrong in something he had said (Catania, 2002). In his doctoral dissertation, for example, Lane (1961) brought the chirping of chicks under the control of reinforcement schedules, in part inspired by a section in *Verbal Behavior* in which Skinner argued that animal cries are mainly elicited rather than operant (Skinner, 1957, pp. 462–470). Skinner respected data and accepted Lane's findings and conclusions. But, unlike Baum's, those were data-based critiques of issues that were subject to experiment. What Baum offers here is simply an opinion.

In his third sentence, Baum continues, "To the contrary, this paper argues that, compared with the rejection of dualism, private events constitute a trivial idea and are irrelevant to accounts of behavior" (p. 185). This claim ignores an extensive history that led Skinner to write his crucial paper on operationism, "The Operational Analysis of Psychological Terms" (Skinner, 1945). This paper was a renunciation of operationism that presented in its place an early version of Skinner's operant analysis of verbal behavior. Much later Skinner incorporated the expression *operant analysis*, not yet well established in 1945, into an article that addressed issues of verbal governance in ways that paralleled his treatment of the language of private events in his 1945 paper. That was of course "An Operant Analysis of Problem Solving" (Skinner, 1969). The distinction between *verbally governed* and *contingency shaped* is relevant here, because Baum advocates rules for doing science rather than discussing the contingencies that operate on scientific behavior (cf. Skinner, 1956). To follow Baum's reasoning here is to conclude that Skinner's 1945 paper was a mistake.

The next sentence of the abstract is a truism: "Viewed in the framework of evolutionary theory or for any practical purpose, behavior is commerce with the environment" (p. 185).

Have behavior analysts argued otherwise? But mention evolutionary theory and of course you invoke Darwin, even though he is not cited here. Baum will later offer a superficial treatment of evolutionary theory covering genetic material and reproductive success, but does not consider the interaction of evolutionary and operant contingencies (e.g., Skinner, 1966, 1975; the term *contingency* appears nowhere in Baum's article except within a Skinner citation) or recent accounts of the interactions between evolution and development (e.g., West-Eberhart, 2003).

To invoke commerce with the environment is in effect to define behavior, but whether at the phylogenetic or ontogenic levels, that commerce lies in selection. In arguing that our field was in the midst of a paradigm shift toward molar accounts of behavior, Baum (2002, p. 98) wrote that "reinforcement consists of selection" and continued by writing that "Possibly Ashby (1954) was the first to recognize the parallel between reinforcement and natural selection." He identified some others with the idea and then went on to write that "Skinner (1981) himself proposed it eventually." Eventually? Baum missed nearly three decades. Skinner first clearly spelled out the parallel between Darwinian selection and operant selection not in 1981 but at least as early as 1953 in *Science and Human Behavior* (Skinner, 1953, p. 90). Here and elsewhere, the support that Baum's citations offer for his claims needs to be carefully scrutinized.

The significance of Baum's reference to natural selection comes up later when he argues that, "Natural selection cannot affect inner events, whether they are labeled mind, psychology, philosophy, thinking, or feeling, but natural selection can favor advantageous behavioral tendencies and patterns, as long as they are influenced to some extent by genes" (p. 197). Some constraints

implicit in his speculations become evident if we rework his assertion so that it applies to physiological processes: "Natural selection cannot affect inner events—whether they are labeled thermoregulation, immune reactions, metabolism, or neural activity—but natural selection can favor advantageous physiological tendencies and patterns, as long as they are influenced to some extent by genes." What would be the status of a physiology that studied ambient temperatures and allergens and other environmental conditions but regarded their private correlates as irrelevant? Yes, of course Baum could reply that all of those processes eventually manifest themselves in behavior, but this hardly justifies an exhortation to avoid their study because they might lead to a dualistic biology.

The next three sentences of Baum's abstract introduce his molar view of private events: "By its very nature, behavior is extended in time. The temptation to posit private events arises when an activity is viewed in too small a time frame, obscuring what the activity does. When activities are viewed in an appropriately extended time frame, private events become irrelevant to the account" (p. 185). Here again Baum begins with a truism. No matter how it is measured, behavior takes place in time. Rates of responding, interresponse distributions, and other aggregate measures are determined only over extended times. Furthermore, Skinner's operant classes readily accommodate temporally extended sequences. Following from the generic nature of stimuli and responses (Skinner, 1935), individual instances cannot usefully be treated as behavioral units. Later, in his book on verbal behavior, Skinner (1957) dealt with operant classes nested one within another, as in the relations among letters and words and sentences and paragraphs and books. Baum's insistence that we not yield to the

temptation of positing private events can perhaps best be translated as an injunction to attend only to higher order operant classes and to ignore the parts, sometimes private, of which they may be constituted. Baum's criterion for extending his time frames is not the orderliness of data but rather the purging of details.

Behavior analysis has a long history in which attention to detail has paid large dividends. Given its neglect of the details, one could easily interpret Baum's molar position as hostile to experimental analysis (cf. Catania, 1981; Skinner, 1959). The trouble with his molar emphasis on explanations in terms of final causes at the expense of those in terms of other kinds of causes is that, as Skinner (1963) eloquently pointed out with regard to other distractions from behavior analysis, they tend to discourage further inquiry. In fact, something like that may indeed have already happened in what Baum claimed was a paradigm shift, when quantifications of derived molar properties of complex behavior, such as the generalized matching law, took priority over the detailed analysis of reinforcement contingencies (Catania, 2005, 2011). This consequence of his molar perspective is indeed ironic, because Baum argues that it is mainly the dualistic stance that leads to this sort of problem.

In this context, the next sentence of Baum's abstract comes as something of a non sequitur: "This insight provides the answer to many philosophical questions about thinking, sensing, and feeling" (p. 185). For the philosophical questions he poses in his article, Baum has provided no satisfactory answers. For example, when he concludes that privately enjoying music is to "concede the mentalists' point by referring to a hidden mental criterion" (p. 195), he does not recognize the difference between saying someone is enjoying the music privately and saying someone is privately behaving musically.

Paradoxically, Baum's next sentence is confusing: "Confusion about private events arises in large part from failure to appreciate fully the radical implications of replacing mentalistic ideas about language with the concept of verbal behavior" (p. 185). Whose confusion and whose failure? Presumably Baum's "mentalistic ideas about language" correspond to the traditional formulations in the opening chapter of *Verbal Behavior* (Skinner, 1957) and "the concept of verbal behavior" is some kind of shorthand for Skinner's new operant formulation. It is strange, however, to see them characterized in such dualistic terms as *idea* and *concept*. I could guess at coherent sentences that Baum might find acceptable paraphrases. But it would be as inappropriate from a radical behavioral perspective to speculate about the ideas Baum was trying to express (see Skinner, 1957, pp. 5–7, on the expression of ideas) as it would be to speculate from Baum's own perspective about the private parts of his thinking that came together to make his sentence public.

The final two sentences of the abstract, appealing to natural causes and to common treatments of nonverbal and verbal behavior and of humans and nonhumans, are restatements of well-established positions of radical behaviorism: "Like other operant behavior, verbal behavior involves no agent and no hidden causes; like all natural events, it is caused by other natural events. In a science of behavior grounded in evolutionary theory, the same set of principles applies to verbal and nonverbal behavior and to human and nonhuman organisms" (p. 185). The appeal to evolutionary theory is gratuitous, in that the same position could have been taken even if Darwin's theory had not been available. Radical behaviorists would presumably find little to disagree with here, and might even argue that these points are so fundamental that they could have gone without saying.

So much for the abstract, with Baum's invocation of the perils of dualism, especially with regard to the irrelevancy of Skinner's treatment of private events in his rejection of dualism, and his case for the priority of a molar science of behavior. It is not feasible to consider exhaustively several other substantive and historical issues in Baum's article that his abstract fails to touch on, but a few quotations provide examples that particularly warrant commentary:

1. With regard to radical behaviorism: "If explanations are sought in public events and all privacy is assumed to be accidental ... then the position is the same as that of Watson" (p. 193). In his behaviorist manifesto, Watson implicitly acknowledged the *subjective* when he wrote that "Psychology as the behaviorist views it is a purely *objective* [italics added] experimental branch of natural science" (Watson, 1913, p. 158). Later in the manifesto he wrote of consciousness:

The separate observation of "states of consciousness" is, on this assumption, no more a part of the task of the psychologist than of the physicist. ... In this sense consciousness may be said to be the instrument or tool with which all scientists work. (p. 176)

According to Watson, consciousness existed but was not the business of the behaviorist (cf. Catania, 1993b; Woodworth, 1948, p. 85). He regarded private events as inaccessible and, for the purposes of his methodological behaviorism, verbal reports were not potential indices of those events. He had conceded the territory of the private to others, later to be reclaimed by Skinner. No dualism was implied when Skinner (1957) wrote that, "It is only through the gradual growth of a verbal community that the individual becomes 'conscious'" (p. 140).

Baum presumably gets this, citing Skinner as criticizing Watson for preserving mental-physical dualism. Yet he goes on to say, "If explana-

tions are sought in public events and all privacy is assumed to be accidental ... then the position is the same as that of Watson" (p. 193). The only implication I can draw from these passages taken together is that Baum believes Skinner was wrong to claim his radical behaviorism was different from Watson's methodological behaviorism. Yet for Watson these inaccessible events were beyond the reach of science, whereas for Skinner these inaccessible events might be approached if they had public correlates allowing a verbal community to teach appropriate discriminations.

Baum even gives a dualistic gloss to Skinner when he writes, "Introspection, however, is notoriously unreliable; that is why Watson (1913) rejected introspection as a method. Skinner presumably would agree, but in the preceding quote he seems to credit introspection with some degree of accuracy" (pp. 189–190). Presumably Baum is searching for a way to establish Skinner's fallibility, but here he makes the elementary error of mixing up reliability and validity.

Skinner was concerned that his behaviorism was too often confused with Watson's. These passages of Baum's confirm that his concern was justified. Baum does not help when, in the context of discussing radical behaviorism, he writes that, "Many different types of private events occur within the skin: neural events, events in the retina, events in the inner ear, subvocal speech (i.e., thinking)" (p. 186). Here he equates thinking with subvocal speech, but that is a Watsonian view. Anyone who has read the chapter on thinking in *Verbal Behavior* (Skinner, 1957) knows that Skinner's treatment is far richer and is not limited to verbal thinking.

2. "Whorf's (1956) point about the need to 'speak in another language' is well illustrated by the concept of *verbal behavior*, which amounts to speaking about lay concepts like language, reference, and meaning in an entirely different vocabulary"

(pp. 197–198). But the reader who turns to Skinner's work will search there in vain for an account of verbal behavior appealing to "speaking about lay concepts in different vocabularies," or even separately just to "speaking about" or just to "lay concepts." Baum seems to think the point of Skinner's account of verbal behavior was to create substitutes for mentalist language. Skinner often paraphrased quotidian locutions in behavioral terms for purposes of illustration, but his objectives were quite different. His account was dedicated to generating plausible interpretations of the social contingencies that underlie verbal behavior, whether that verbal behavior might be labeled mentalistic or behavioral.

It is ironic that Baum uses Whorf to argue against dualism; Whorf's legacy is in his arguments about how language influences thought. Whorf's work thus implicitly invoked the very dualism about which Baum is so exercised and against which Skinner warned when discussing traditional views of verbal behavior. It is a further irony that much of what was assumed to be the data on which Whorf built his case was instead based on progressive exaggerations in repeated citations of the secondary literature rather than on what had been presented in Whorf's own work (Pillum, 1991).

3. "Whatever its disadvantages, the notion that private events are public in principle remains the only tenable position for radical behaviorism" (p. 188). Aside from Baum's odd claim that "Skinner apparently recognized this," the issues here concern private in principle versus private in practice. Given that Skinner's approach emphasized only the latter, it is not obvious why Baum spends so much time on the former. Skinner was not concerned with private events "in principle" in his account of the origins of the language of private events and took the position that Baum regards as untenable.

When Baum gets to private events in practice, he stresses that this “use of *private* makes it purely a practical affair” (p. 188). He then argues that “thoughts and feelings are public in principle, if only we are able to invent apparatus to observe them,” and posits a brain-scanning technology set up so that “if the person thinks “Who am I?,” the words *Who am I?* appear on the screen” (p. 188). Recognizing that such an antiprivacy machine is not likely ever to exist, he nevertheless identifies problems with it, one of which is that “the machine would always be subordinate to the testimony of the person being interrogated” (p. 190). Baum here allows the very kind of consciousness that Watson acknowledged. There is no private part of the environment against which that testimony can be tested. The point of a verbal analysis or interpretation of private terms is not to get at private stimuli through verbal means, but rather to deal with the private terms as verbal responses shaped by a verbal community that had only indirect though necessarily public access to some of the stimuli by which they were occasioned. Whether an antiprivacy machine can be invented is beside the point.

The “Who am I?” example reveals yet another misunderstanding, in implying that some formal correspondence must hold between the person’s private verbal behavior and the words on the screen. Skinner provided a totally different kind of solution with regard both to the toothache, widely recognized as a philosophical conundrum in the decades leading up to his 1945 paper, and to an analogous case involving a sighted person and a sightless person teaching each other the names for geometric solids (cf. Catania, 1992, p. 1526). A diseased tooth is a discriminable physical event, but when called on to treat it, the dentist probes with instruments or takes X-rays and therefore has different

access to it than does the patient. There is no more correspondence between how the patient makes contact with the carious tooth and how the dentist does so than there is between how the sightless person makes tactile contact with the held pyramid and the sighted person across the table makes visual contact with it. The question whether the tooth is the same for patient and dentist or the pyramid is the same for the sightless and the sighted can be used to create philosophical mischief, but these are the stimuli that occasion verbal responses and not, as Baum would have it, some sensations or perceptions that are their derivatives. The issues are not whether stimuli can be observed by multiple individuals but rather how one observer teaches an appropriate vocabulary to another. These issues are the same for teaching the tacting of toothaches as for teaching the tacting of pyramids (see Horne & Lowe, 1996, on the relation between tacting and naming). Baum wants to get at the stimulus that controls the speaker’s verbal behavior, but Skinner’s listener needs access only to some event correlated with that stimulus. That is because the vocabulary of private events is taught through extension from tacts based on events to which the verbal community has access.

Skinner is quite explicit about this issue of correspondence:

When the response is later evoked by private stimuli ... (as when a patient reports that he has a sharp pain in his side), we cannot assume that the state of affairs in his side necessarily has any of the geometrical properties of the original sharp object. It need only share some of the properties of the stimuli produced by sharp objects. We do not need to show that a sharp pain and a sharp object have anything in common. (Skinner, 1957, p. 133)

This point is particularly relevant to Baum’s misunderstanding of Skinner’s account of the tacting of painful stimuli.

4. “A more challenging example is pain, because pain is usually taken to

be the quintessential private event. As we saw earlier, Skinner considered pain to be a private stimulus" (p. 195). Baum then claims that this is an error, assuming that Skinner's account depended on "inferred inner feelings." Yet nowhere in *Verbal Behavior* (1957) does Skinner call pain a stimulus. He writes of painful events and of verbal reports of pain, and when he refers to stimuli as having the property of being painful (e.g., pp. 131–133, 214–215) this is no more problematic than saying that visual stimuli can be bright or colorful. Here is one example: "One teaches a child to say *That hurts* in accordance with the usage of the community by making reinforcement contingent upon certain public accompaniments of painful stimuli (a smart blow, damage to tissue, and so on)" (Skinner, 1957, p. 131). Skinner also writes of "the response *toothache*" but not of the toothache as a stimulus: "The response *My tooth aches* is controlled by a state of affairs with which no one but the speaker can establish a certain kind of connection," and "How, for example, is the response *toothache* appropriately reinforced if the reinforcing community has no contact with the tooth?" (Skinner, 1957, pp. 130–131).

In his example of a football player's broken rib, Baum writes,

If he is asked whether he was in pain ..., he might say he was in pain but was ignoring it. ... But, how could he know that? Even if the broken rib was affecting nerve endings that could in turn affect his brain, his nervous system was responding only to the broken rib. If he was ignoring anything, he was ignoring the broken rib ... not some inner pain *thing*, not a private stimulus. (p. 196)

The irony here is not so much that Baum recognizes that what was private was the broken rib and not the pain, but that he invokes a dualism of his own in appealing to nerve endings and brain, both here and elsewhere in his article.

Given his misreading of Skinner, the following from Baum should perhaps be no surprise:

When Skinner ... wrote famously, "my toothache is just as physical as my typewriter" ..., one wonders just what he meant. He treated the toothache as a "private stimulus," but the statement remains cryptic. Is the private stimulus the injury to the tooth? ... But he says "toothache," not "tooth" (p. 198)

Baum resolves his puzzlement by appealing to his molar view: "The private stimulus cannot be some inner pain thing. ... In the molar view, the toothache is the pain behavior ... plus the person's verbal complaints and assertions" (p. 198). He has nothing whatsoever to say, however, about the history that created that molar behavior.

5. "What is the way out? How to preserve the science of behavior and yet have the science be complete and plausible? I argue that the answer lies in adopting a molar view of behavior" (p. 193). To illustrate the molar view, Baum gives us Tom digging a ditch in a new direction:

He encountered a buried electric line and had to dig around to avoid it. We might say that Tom encountered a problem that he solved by changing direction. Whatever subvocal or overt verbal behavior may have occurred, it was part of an extended activity. ... Any private actions or stimuli were neither causal nor essential. (p. 194)

This is no more than a claim, because Baum can say nothing about the causal status of the events he ignored. Suppose Tom had measured, made some mental calculations, and then dug in a direction determined by the answer he had produced only subvocally? The public manifestation (the digging) is not the same as the earlier controlling events (the mental arithmetic). What, according to Baum, is the status of private events before they have become public, given that at that point he equates them with their public manifestations? Have they ever existed at all,

or like Schrödinger's cat (Schrödinger, 1935), is their existence determined only at the moment they become public?

In his replies to a range of commentaries on some of his articles (Catania & Harnad, 1988), Skinner was asked to respond to the following:

Saying that mental events are not causes of behavior follows simply from rejecting the physical-mental distinction, but it does not follow that *private* events cannot be causes of behavior. ... One can create discriminative stimuli that affect one's subsequent behavior (e.g., writing the intermediate products in the multiplication of large numbers). Sometimes such stimuli are accessible only to the problem solver (e.g., the intermediate products when the multiplication is mental rather than written). The public origins of such private stimuli are obvious enough. Yet if they are part of the causal chain leading to other behavior (e.g., the solution to the multiplication problem), should they not be regarded as causes of behavior?

One resolution considered was distinguishing between initiating and intermediate causes: "To the extent that private events are parts of causal chains they can be *intermediate* causes, but they cannot be *initiating* causes" (p. 717).

Skinner replied that private events

may be called causes, but not initiating causes. The only possible exceptions I can imagine would arise if ... a set of private events (serving as stimulus, response, and consequence) would resemble a public set well enough to come into existence through generalization. We do engage in productive private verbal behavior in which some initiation certainly occurs, if that term means anything, but if my analysis is correct, public versions must have been established first. In that case, the initiation passes to the environment. (p. 719)

But, unlike Skinner, Baum will have nothing to do with intermediate causes.

So what does Baum recommend? That once we see that a pigeon is foraging we should have no interest in the details of its pecking at seeds on the ground? That once we have

seen someone acting on the environment we should have no interest in the private talk that may have preceded that behavior? The issue here is not about molar accounts but rather about the nesting of phenomena at different levels of analysis. Baum's suggestion that we would otherwise run the risk of confusing lay audiences about dualism is not a persuasive rationale for preferring more over fewer molar levels.

6. "Private events may be inferred by the verbal community in everyday affairs, but inferred private events can never serve as scientific explanations of public behavior" (p. 190). There are at least two problems with this sentence: It assumes that a listener who shapes a speaker's vocabulary of private events does so on the basis of inference, and that a primary function of a science of behavior is explanation. First, what Baum wrote is irrelevant to the parent dealing with a crying child who has had a bad fall. The parent need not engage in inference. Skinner has shown how a parent can teach a child to say where it hurts even though the parent cannot feel the child's pain. Second, to assume that science is about explanation is to borrow from traditional philosophies of science that have their roots in neither methodological nor radical behaviorism. Skinner crucially supplemented Watson's criteria of prediction and control with a criterion of interpretation. Baum writes of understanding, of tracing causal chains, and of function versus mechanism. But in a behavior-analytic philosophy of science, understanding is superseded by an analysis of the verbal behavior of the scientist (Catania, 1993a; Skinner, 1957), the tracing of causal chains is tempered by the special causal characteristics of selection by consequences (Skinner, 1981), and the distinction between function and mechanism is less central than that between analysis and synthesis.

Baum writes of historical explanations in behavior analysis, so it is again ironic that his molar stance ignores history. Furthermore, to be consistent with how Mayr (1982) identifies historical sciences such as biology, Baum should discuss historical interpretations rather than historical explanations.

7. "The real solution to the problem of privacy is to see that private events are unnecessary to understanding behavior. They might or might not exist; they are irrelevant. A complete account of behavior can be had without them" (p. 197). Presumably Baum believes that he leaves nothing out, given that we know the private only by way of its public correlates. But Baum cannot erase centuries of human verbal history simply by declaring the vocabulary of private events off limits. The progress of behavior analysis cannot be directed by verbal fiat. Recent years have seen words like *reinforcement* and *consequences* infiltrating the vocabularies of reporters and politicians and the public at large, although the words do not function with consistency or precision. *Time-out* has long since migrated into the general culture, to the point at which few know its origins, and the proliferation of some autism treatments has begun to do the same with the Skinner's language of verbal behavior.

Progress will continue with the verbal shaping that occurs as behavior analysts interact with their students and their clients in myriad environments. Baum would like us to suppress our own talk of private events but offers no evidence that unless we do so a contagion of dualism will be engendered by such progress. He concludes that Skinner's treatment of private events is "a misguided effort to render behaviorism acceptable to laypeople by suggesting that they offer an account of mental life" (p. 186). But Skinner did not offer an account of mental life.

He offered an interpretation of the origins of the verbal behavior of private events.

Baum may be averse to private parts, but his verbal behavior with regard to private events is so far from Skinner's that it might be helpful to know more about the history that engendered it. What reinforcers figured in the shaping of his curious critique? What were its verbal antecedents? Perhaps he can take some comfort in knowing that the emperor who has no clothes has no private parts.

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