Voices that are not: The Problems of the Pseudohallucination Concept

Alvaro Cavieres Fernández[1] Pablo López-Silva[2]

The term pseudohallucination was originally introduced to characterize hallucinatory phenomena not exhibiting the paradigmatic features of hallucinations. In our context, and directly following Jaspers' description, the term has been used to characterize a specific type of auditory hallucination in schizophrenic patients i.e. the so-called voices. However, this formation is not shared in other contexts. This paper suggests that Jaspers' formulation is inexact and problematic when trying to describe the semiology, philosophical foundations, and aetiology of the phenomenon. In addition, we claim that this lack of etiological and nosological clarity lead to serious doubts about the real utility of the use of the term within current descriptive psychopathology. We conclude by proposing two potential alternatives that the use of the term might have within the field.

Keywords: *Hallucinations; Pseudohallucinations; Jaspers; Voices; Schizophrenia*

Pseudohallucination: A Problematic Tradition

A review of the current situation of descriptive psychopathology reveals that: (i) many terms historically coined by it are not longer in use, (ii) other terms, although in use, reproduce philosophical, empirical and phenomenological problems, and, finally, (iii) few new concepts have been clearly incorporated into the field. All this inevitably leads us to ask ourselves about the real usefulness of current descriptive psychopathology, understood as a kind of language and as a tool in the diagnosis and treatment of clinical entities.

As pointed out by Berrios and Olivares[1], to acquire a comprehensive understanding of psychopathological phenomena, professionals in the area need to understand "Why the symptoms were defined in a particular way." Thus, the authors ask, "[were] they dictated by the inevitable reality of the phenomenon?" or "Were they the result of a theoretical commitment that is no longer relevant to us?" (p.153). Thus, recalibrating descriptive psychopathology requires considering the history of the terms it uses to designate brain symptoms, behaviors, and disorders, and then an in-depth discussion of the theoretical concepts underlying the field; all this accompanied by careful clinical observation of the phenomenon sought to be understood[2,3,4,5].

(i) For an excellent introduction to this type of problem, see: Bentall (2003) and Cooper (2005)
(ii) According to the use of Hagen, pseudo-hallucinations would become a dimension of the hallucinatory phenomenon.
(iii) Main difference with the use of Hagen. See note ii.

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1 Psychiatrist, School of Medicine, Universidad de Valparaíso, Chile
2 Psychologist, School of Psychology, Faculty of Medicine, Universidad de Valparaíso, Chile

The term pseudohallucination was originally introduced to designate any hallucinatory phenomenon present in the subject's field of consciousness that did not exhibit all the paradigmatic characteristics of hallucinations. Among other aspects, hallucinations with sensory richness, insight or projection in the subjective internal space were included in this category [6,7,8.] As Berrios[2]indicates, the use of the term historically emerges as a succession of dichotomous questions: perception or imagination?, voluntary or involuntary?, internal or external space?, a sensory or multiple modality?, continuous or discontinuous with normality?, mild or intense?, with or without insight?, among others.

Now, in our field, and directly following the description of Jaspers[9], the term pseudohallucination has been used to refer to a specific type of auditory hallucinations present in people with schizophrenia: the voices, assigning it a special semiological value[10]. However, this diagnostic tradition is not shared by other contexts. For example, the term is completely absent in the CIE-10[11] and the DSM-5[12]. Indeed, the latter describes the voices simply as hallucinations, that is, "experiences similar in strength and impact to perception, but without external stimuli."

Towards a History of Pseudohallucinations

Friedrich Hagen[13] used the term pseudohallucination for the first time to refer to the hallucinations that occur in undiagnosed subjects who remain aware of their abnormality . Nevertheless, the same author acknowledges that he is continuing a debate of the French School starring, among others, Esquirol, Baillager and Michéa[2]. Later, the concept is used by Kandisky[14], who, based on his own psychotic experiences, describes a pathological manifestation of memory and fantasy with full sensory richness, intrusive and received with a feeling of passivity, thus differentiating it from true hallucinations.

Lugaro[15] states that pseudohallucinations are pure and egodistonic representations present in chronic psychotic states such as schizophrenia and that they can cause secondary delusions . Furthermore, it suggests that, unlike hallucinations --which would result from irritation of perceptual centers --pseudohallucinations would originate in associative centers. Apparently, Lugaro was trying to reach a clearer delimitation of the concept of psychic hallucinations, previously introduced by Baillarge[16]. The latter distinguished between psychosensory hallucinations (produced by the involuntary activation of the imagination and memory, the suppression of external sensations and the internal arousal of the senses), and psychic hallucinations (in which the sensoriality was weak or non-existent, since it did not there was participation of the sensory apparatus).

All these proposals place the explanatory emphasis on the sensory aspects of the phenomenon. Breaking this trend, Seglas[17] tries to explain pseudohallucinations as the exacerbation of the internal verbalization of thought (internal language) or hyperendophasia, which, having clarity and sensory precision, becomes unknown to the subject, although lacking external projection. Seglas calls these internal voices verbal pseudohallucinations due to their origin, in which different degrees of motor activation can be found in addition to the auditory component.

One of the greatest milestones in the history of the concept occurs when Jaspers --in his General Psychopathology[9] --establishes a sharp separation between hallucinations and pseudohallucinations. While hallucinations are disturbances of the perception of external objective reality, pseudohallucinations are special forms of imagination or representations (p. 89). From this, it follows that hallucinations are corporeal, objective, and projected in external space, while the latter are imaginary, subjective, and appear in the internal field. Furthermore, perceptions are complete, sensory rich, easily retained, and independent of the subject's will. However, it is important to point out that, according to Jaspers, what separates perception of representation "always without transition... through an abyss," are the corporeality and exteriority of the former, "representations can successively acquire all the other characters that have been attributed to perceptions."

Jaspers' description will be incorporated in the most important psychopathology texts in our environment[10], where it is given a funda-

mental semiological importance, since it is stated that "there is no perception of voices inside the head" and then "most of the sensory-perceptual disorders of psychiatric patients correspond to pseudohallucinations, and only a tiny minority present true hallucinations" (p. 56). Now, despite the historical weight that this use has in local descriptive psychopathology, here we want to suggest that the term does not offer any guidance regarding the origin of the voices in schizophrenia, ,nor, as we will see below, does it fit all the clinical descriptions of the phenomenon.

The Semiology of Voices: Phenomenology and Progression

It is essential to point out that our questioning originates from trying to establish whether the voices heard by people with schizophrenia are hallucinations or pseudohallucinations. In this sense, the discussion is diagnostic and refers to the way in which psychiatrists use phenomenological keys to classify the phenomenon into clinical categories that will guide its diagnosis and treatment. During this section, we will review the most relevant aspects of the voices reported by patients.

Direct clinical observation shows that the voices heard by the patients do not easily fit in the descriptions provided by Jaspers. The phenomenology of voices suggests that they are perceived with different degrees of sensory freshness, objectivity, internal or external projection, and insight[18]. A fundamental observation, generally ignored, is that, in the same subject, voices can change according to their clinical state .

Possibly, one of the best description of the voices is offered by Kraepelin[19], who in addition to pointing out their characteristics, registers their changes during the evolution of early dementia. Thus, at the beginning of the disease, patients tend to hear "simple noises, cracking, buzzing, ringing in the ears, ringing of bells, blows, table shifts, crackling whips, trumpets, Tyrolean songs, other songs, cries of children, bird whistles, explosions, chirps" (p. 33). Later, when the condition progresses:

The symptom peculiar to early dementia--namely, hearing voices---develops gradually or suddenly. Sometimes, they are whispers. Sometimes, they are loud or suppressed. It is not uncommon for illusions to be connected with real noises: the clock speaks, the running of the water is transformed into words. Voices are often related to hearing: voices entered through one ear and exited through the other. But it is especially characteristic of early dementia that the patient's own thoughts appear to him spoken aloud. (p.33-34)

Also Jaspers[9] records the presence in acute psychosis of "melodies, noises and machine grinding […]" and "both here, and in chronic psychoses, voices, the invisible ones that often shout to patients as much as possible" appear (p. 95). But in turn, he warns that, "it is necessary to distinguish the pseudohallucinations from the authentic voices" (p. 96) and gives a description in which both would be present in the same subject when he points out that:

A chronic paranoid distinguished a direct speaking of voices from outside by walls and tubes, from direct speaking in which his pursuers forced him to hear something internally, but in which those internal voices were not located outside nor were they corporeal (p.96).

Recent studies reflect a wide heterogeneity in the descriptions of voices made by patients, questioning the conditions offered by Jaspers to distinguish between hallucinations and pseudohallucinations. While some refer to a clarity similar to a conversation with another person[20]others report it as ideas or 'silent sensations'[21,22]. The majority can differentiate them from their own[20,23] thoughts and, generally, have a normal volume. Whispers and screams are less frequent, and in general, the voices are referred to as both inside and outside the head[21,22]. Although many patients hear more than one voice, most report a middle-aged male voice that gives orders or insults, but can also make positive comments[24].

Through an statistical analysis, Stephane et al[25], conclude that voices in people with schizophrenia can be organized in two clusters: (i) the first, with low linguistic complexity, repetitive content, attributed to itself, located in the external objective space and associated with control strategies, and (ii) a second one, with high linguistic complexity, systematized content, multiple voices, attributed to others, and

located in the internal subjective space.

McCarty-Jones and their collaborators[26] built another classification system consisting of four groups: (i) voices as such, constant comments and orders, repetitive, in the first or third person, and internal, (ii) own thinking, in the first person that do not address the subject, and with characteristics similar to memory, (iii) non-verbal hallucinations, described as meaningless noises, and (iv) reproductions, or phenomena identical to the memory of someone speaking.

Finally, another study describes the evolution of hallucinatory symptoms, in a population of subjects at high risk of psychosis[27]. The contents become progressively clearer and more persecutory, and in turn, the feeling of listening to your own thoughts decreases and the feeling of listening to the voices of others increases, and along with this, progressively less insight and internal projection. In this context, it is reasonable to think that these changes are related to the progression of the neurobiological alteration, or that the voices interact with other subjective dimensions, which ultimately influences the way the experience is reported.

The Neurobiology of the Voices Phenomenon

Although there is not yet sufficient scientific evidence to link phenomenological characteristics with the causes of voices, at least five types of disturbances that could be present in such cases have been proposed: (i) hypervigilance, (ii) memory disorder, (iii) disorders in the internal thought control mechanisms, (iv) epilepsy, and (v) deference[28,29,26]

The use of functional techniques shows that, in people with schizophrenia who report that they are listening to voices, there is an activation of the inferior frontal cortex and temporoparietal corresponding to the zones of production and understanding of language, respectively[30]. Likewise, the loss of the functional integrity of the fibers that connect the language areas of the frontal and temporoparietal lobes (arcuate fascicle) is associated with the presence of auditory hallucinations[31]. For its part, electro-physiology shows that, along with the decrease in fronto-temporo-parietal connectivity, there is hyperconnectivity in the areas of language perception, which could imply a lowering of the threshold for the perception of spontaneous activity generated in this area and/or of that which comes from the frontal lobe[32].

What is important to understand is that, even when schizophrenia is characterized by a diffuse alteration of neuronal connectivity[33] the activation of the primary auditory cortex appears to be an essential component of hallucinations, similar to what occurs in auditory hallucinations in epilepsy[34] and in the normal perception of external stimuli.

According to Von Holst and Mittelstedt[35] and Sperry[36], motor acts are accompanied by an efferent copy, which produces an inhibitory corollary discharge in the sensory zone of the cerebral cortex. The result of this mechanism is the attenuation of the perception of self-generated actions and an automatic discrimination of internal and external stimuli. In the case of speech, the frontal lobe sends an inhibitory signal to the auditory cortex, minimizing the perception of the speech itself[37]. This mechanism is deficient in schizophrenia, specifically for auditory stimuli[38,39], without depending on the individual's expectation or sense of agency[40]. Similar findings have been reported in people with bipolar disorder and psychotic symptoms, but not in first-degree relatives of people with schizophrenia[41].

The above-referenced data are consistent with hypotheses regarding the perception of internal thought, such as the origin of the voices. Basically, some content of automatic or pre-reflective internal thought, considered as a basic motor act[42,43]could be made perceptible to the subject, by an increased activity of the arcuate fasciculus and a failure in the corollary dis-

(iv) In this way, Lugaro manages to connect perceptual mechanisms with those mechanisms that, in altered states, would be responsible for the creation of delusions. This idea will be fundamental for the development of the current dominant neuropsychiatric theory of delusions (Coltheart & Davies, 2000; Coltheart, 2015).

(v) In this context, it is not clear whether the phenomenology of voices itself varies (that is, their phenomenal content) or simply the way in which such experiences are communicated in light of the availability of more informed and rationalized explanatory hypotheses within the explanatory repertoire of the patient. Although the way of reporting an experience can vary, its phenomenal content a posteriori and the clarification of the relationship between these two dimensions of the psychopathological phenomenon remains open to debate.

charge, experiencing themselves as strangers, arising spontaneously, and without control, in the flow of consciousness[44]. At least some of the phenomenological characteristics of hallucinations, such as voices in dialogue, commentary on acts, imposition of orders, non-repetitive content related to the current circumstances of the patients, could be compatible with this origin[45].

Abnormalities in fronto-temporal connectivity and corollary discharge could give rise to the voices heard by people with schizophrenia, who would not be able to suppress the sensory stimuli associated with their own thinking. This model does not offer a possibility of distinction between perceptions and representations; however, the neuronal alterations described can be quantitative, which allows phenomenological differences to be assumed. In this regard, it is important to note that most of the works do not use instruments to assess the severity or semiological characteristics of the voices.

What to do with the Concept of Pseudohallucinations?

In light of our analysis, the used of the term pseudohallucinations, to refer to voices in schizophrenia presents several problems. First, the current biological understanding of the phenomenon does not allow distinguishing between hallucinations and pseudohallucinations as two separate phenomena, so the use of the term pseudohallucination could be considered unnecessary from a purely naturalistic point of view.

A second problem is that the distinction raised by Jaspers does not seem to apply clearly to voices reported in the first person. In this sense, we believe that any nosological category should respect the way in which the experience is communicated, so that its phenomenological characteristics serve as the main guide for establishing diagnostic distinctions[4]. Here, the main issue is that the attributes of the voices phenomenon are gradual and do not make it possible to establish a clear and unambiguous parameter to distinguish hallucinations from pseudohallucinations, so that distinctions, in this sense, would be arbitrary, or worse still, capricious.

On the other hand, on a theoretical and practical level, a sharp separation between representation and perception does not seem sustainable. Such a distinction would imply that pseudohallucinations, as representational states, would be purely cognitive episodes (such as beliefs or judgements), which is not consistent with the phenomenological descriptions of the patients. In other words, where could his sensoriality come from, rather than from a perceptual act, even if it is abnormal.

Jaspers also notes that while hallucinations arise as disturbances in the perception of the external world, pseudohallucinations emerge as special forms of imagination or representation. In addition to the fact that purely cognitive states do not possess the sensory quality reported by patients, there is at least one other problem with this idea, given by the sense of voluntariness i.e. the experience of agency and control regarding the production of certain contents in the mind of a subject.

Given this, we must ask ourselves: what to do with the concept of pseudohallucination? We believe that considering the current problems of using the term in our environment, there are two alternatives available that could guide its reassignment. On the one hand, a radical alternative, which would imply its total abandonment; on the other, a conservative option, which considers its reinterpretation as a phenomenon belonging to a phenomenological and nosological continuum, from which to understand the phenomenon of hallucinations longitudinally.

The radical alternative is attractive, because there is no evidence that the biological alteration of schizophrenia originates differently from two separate phenomena. From this point of view, the term could be abandoned simply on the basis of its undifferentiation. Furthermore, eliminating categories that do not seem to have a well-defined organic origin avoids hindering the conceptual, empirical, and phenomenological delimitation of concepts that do possess a clearer origin, such as hallucinations(vi) . In this way, all the characteristics that seem to give

(vi) From a philosophical point of view, one could call this strategy eliminitivist, such as the one proposed by Churchland regarding the use of mental concepts

life to the concept of pseudohallucination could be integrated into the concept of hallucination, allowing a more complex characterization of this concept.

In this way, there would be no place for distinctions between pseudohallucinations and hallucinations, because there is no categorical distinction between and within individuals with schizophrenia. It would seem more plausible to converge the phenomenon, the alteration, and the terms used to refer to voices with a unique term[1].

However, radically abandoning a historically inherited category may entail losing some insights that it may contain. Even with its undifferentiation, the concept of pseudo-hallucination could capture relevant information about the phenomenon of voices. But, how to retain the term, with the diverse problems already described?

A conservative alternative offers to maintain the concept of pseudohallucination as part of a phenomenological continuum, to which hallucinations also belong. Recall that the phenomenology of voices examined above shows complexities and variations in all its characteristics. The data suggest the idea that biological causes, could have a severity scale, as evidenced by the fact that voices do not commonly disappear, but rather are modified or integrated into the subject's psyche. From this, it would be possible for hallucinatory voices and pseudo-hallucinatory voices to refer to two categories that would instantiate two evolutionary moments of a continuum.

Recurring again to Berríos[46] one of the ideas at the base of this alternative is that the biology related to voices could give rise to different conscious phenomena, depending on the way in which such a causal element is impregnated by other dimensions of the subject, such as, cultural beliefs, psychological resources, states of mind, functioning of executive functions, and prior knowledge, among many others.

Conclusions

The concept of pseudohallucination was originally introduced to designate any hallucinatory phenomenon that arose without fulfilling all the classic characteristics. After a series of conceptual swings, Jaspers introduces the idea that while hallucinations are disturbances in the perception of external objective reality, pseudohallucinations would be special forms of representations. In this way, the hallucinations would have a corporeal, objective nature and would be projected in outer space, while the latter would be imaginary, subjective and would appear in the subject's internal field. In this work, we have suggested that the use of the Jasperian formulation to call the voices of people with schizophrenia pseudo-hallucinations, is highly problematic in our environment, and that there are two alternatives that could guide the future of the term: eliminate its use, or integrate with the concept of hallucination into a phenomenological continuum.

It is important to note that both alternatives have strengths and weaknesses. Our task here has only been to point out both potential paths in order to inform future decisions and discussions regarding the use of the term. On the one hand, the radical alternative must argue that abandoning the term is better than its phenomenological and empirical study. On the other hand, the conservative alternative must justify the use of the concept through the correspondence between the expressed semiological characteristics (e.g. voices of men, one or more voices, internal or external, etc.) and basic biological disturbances, even though there is a dimensional spectrum within the phenomenon of voices. The deepening of these aspects is key to a thorough understanding of the phenomenon of voices.

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Correspondence to:
Alvaro Cavieres Fernández
9 Norte 915, Viña del Mar
cavieres.alvaro@gmail.com
32 2508550