A general overview

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Summary

I provide an overview of the subject within which the other contributions to this special issue can be placed. The approach is descriptive rather than phenomenological, and my own view is that the descriptive psychopathology in this area is a muddle. Linguists have made most progress so far, which is why I have emphasised their contribution. My further view is that the subject is in urgent need of a new approach, and the phenomenological studies in this special issue are thus very timely.

Key words

Formal thought disorder • Aphasia • Non-aphasic misnaming • Schizophrenia

Introduction

If spoken language is a species of signs, we can first divide the psychopathological material into disordered sign systems of all sorts, including disordered spoken language. The other sign systems for which there is a psychopathological literature are written language, music, numbers and sign language for the deaf, each with their corresponding expressive and receptive disorders (not considered further here).

Within the confines of spoken language disorder, we can follow Saussure [1] and distinguish *la langue* (the structure of language) from *la parole* (speech). This gives two major classes of language disorder – *disordered language structure* and *speech disorder*. Within each of these there are various subclasses.

The subclassification of speech disorder adopted is arbitrary, but it should be uncontroversial because there are no serious problematical issues to consider. However, the subclassification of disordered language needs some discussion, because the three major traditional varieties – *aphasia, non-aphasic misnaming* and *formal thought disorder* – overlap with respect to the pattern of linguistic breakdown, and the third of these was called such because the person who named it [2] did not believe that *it* was a language disorder at all.

The reasons for all this muddle are as follows. Each of the varieties was described and named by virtue of their link with some purported cause.

Aphasia was the first specific mental disorder of any sort to be attributed, by Broca [3], to a lesion of a specific area of the brain. Although the area of the brain where damage could cause a language disorder was subsequently widened to include Wernicke's area, and the area in between this and Broca's area), it was still a very small part of the overall brain.

When language disorders were subsequently encountered in patients with damage outside this classic region, it was considered that some other name should be given to these – hence non-aphasic misnaming – even though it was acknowledged that some aphasic patients with a lesion within the classic zone could have purely misnaming problems, a condition which was called *nominal aphasia*.

The paradoxical use of the term formal thought disorder to refer to a disorder of language arose because Bleuler [4] considered thought disorder to be the primary and fundamental deficit in schizophrenia, a view with which Schilder concurred. But whereas Bleuler believed that delusions as well as peculiarities of speech stemmed from thought disorder, Schilder considered that some distinction should be made in the two cases. He thought that a disorder of the form of thought was to blame in the latter case – hence *formal* thought disorder – but that a disorder of content of thought was evident in the former.

Two further issues can be briefly mentioned. One is the duplication of terms for the same psychopathological entity. This is due to the independent description of a suggested entity by neurologists and psychiatrists. We encounter this problem throughout the whole realm of psychopathology.

A second is a further multiplication of terms for the same psychopathological entity owing to disputes about what modality of the human state is involved. There are a multitude of psychological terms for what is essential the same

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sort of thing: schizophasia (neurological orientation), formal thought disorder (cognitive orientation), 'crazy talk' (behaviourist orientation), communication disorder (social orientation) and pragmatic language disorder (linguistic analysis). There is also plethora of clinical terms for the same manner of speaking: knight's move thinking, derailment, tangentiality, loosening of associations and loss of goal.
Despite all these problems, the tripartite division into aphasia, non-aphasic misnaming and formal thought disorder will be adhered to here because, as I shall show, there are linguistic distinctions to be found to support the otherwise dubious nosological considerations.

Varieties of speech disorder

Altered amount of speech

Pressure of speech is a morbid speeding up of the rate of otherwise normal speech. It is characteristic of mania. *Logorrhoea* refers to the same entity, although in a neurological context – epilepsy, focal brain damage [5]. Fisher [6] coined another term for the same sort of thing, in a neurological context, except that the content was nonsensical – *nonsense speech amphigory*.
Anarthria, literally 'lack of speech', is used for the markedly reduced output of speech accompanying the early stages of a brain lesion inside the classical language area. This tends to move on to a severe expressive aphasia. *Mutism* is the equivalent psychiatric term.
Poverty of speech is inappropriately laconic speech, and, although no different from anarthria, is the term used in the context of schizophrenia.

Altered fluency of speech

Stuttering (stammering) can be defined as 'silent or audible involuntary repetition or prolongation of an utterance of a sound' or 'a sound improperly patterned in time and the speaker's reaction to it' [7]. It can be developmental or acquired. The acquired form is usually a consequence of multiple bilateral cerebrovascular lesions or, if unilateral, left-sided lesions [8]. Joseph [9] observed it in two cases of depressive illness.
Palilalia is the 'compulsive repetition of a phrase or word which the patient reiterates with increasing rapidity and with a decrescendo of voice volume' [11]. It is involuntary and could be classified in the next section, but the 'increasing speed and decreasing distinctiveness' of the utterance is its most striking characteristic [10].

Involuntary speech

Echolalia is the involuntary repetition of someone else's speech. It may be developmental or acquired. The developmental variety is usually part of infantile autism; it is not an exact replica of what is heard, in that the pronouns are reversed, and it is delayed. The acquired variety [12] has been reported in Gilles de Ia Tourette syndrome [13].
Speech automatisms may take the form of either stereotyped utterances during an epileptic discharge [14] or 'intrusive inner speech vocalizations… natterings' [15] in the context of focal brain damage.

Altered prosody

Aprosody and *dysprosody* are synonymous terms for a disorder of what Monrad-Krohn [16], who first described it, referred to as the 'melody of language'. Prosody is now regarded as separable into two components: the stress and rhythm with which a subject pronounces each phoneme, which make up his or her regional and individual accent – usually referred to as stress prosody (sometimes as linguistic or propositional prosody); and the emotional valence in the subject's speech – usually referred to as affective or emotional prosody. Each of these components can be disordered in the expressive or receptive mode, giving rise to four types of aprosody: expressive stress aprosody; receptive stress aprosody; expressive emotional aprosody; and receptive emotional aprosody. Monrad-Krohn [17] also referred to hyperprosody – an exaggeration of all prosodic components – which he believed could occur in mania.
Expressive stress aprosody is the cause of the 'foreign accent syndrome' [18], where the patient speaks with an accent resembling that of a native of another country. Monrad-Krohn's [16] first patient was a Norwegian who began speaking like a German, which was acutely embarrassing for her because this happened during the German occupation of Norway and she was branded a collaborator. Both expressive stress aprosody and receptive stress aprosody are associated with left hemisphere damage [19].
Expressive and receptive varieties of emotional aprosody are associated with right- hemisphere damage [20] or schizophrenia [21]. Subjects cannot express emotion in their voice such that normal raters can determine which of a number of standard emotions they are supposed to be expressing, nor distinguish a designated standard emotion in someone else's voice.

Varieties of Language Disorder

Aphasia

General considerations. *Broca's aphasia* (expressive aphasia, motor aphasia) is a severe breakdown in the structure of the language required for expression. At the outset there may be no speech at all (anarthria). Later, the pattern is predominantly one of phonemic and syntactical errors.

Conduction aphasia is a condition where the repetition of speech is disproportionately affected relative to other speech performance [22]. The other structural components are usually abnormal, but the problem with repetition is an over-riding defining feature. *Transcortical motor aphasia* and *transcortical sensory aphasia* are conditions in which the repetition of speech is relatively well preserved compared with spontaneous expression in the former and comprehension in the latter.

Wernicke's aphasia (receptive aphasia, sensory aphasia) is a severe breakdown in the structure of language required for comprehension of speech.

Jargon aphasia refers to any variety of aphasia where the speech output is full of paraphasias (see below). The paraphasias may originate from a breakdown at the phonemic or semantic level.

Linguistic considerations. A *phonemic breakdown* occurs in *phonetic disintegration* [23]: the individual phonemes cannot be pronounced correctly because the vocal apparatus is not able to construct the necessary distinctive features. In *phonemic jargon aphasia* [24] the individual phonemes are correctly pronounced, but are then strung together almost at random so that non-words (jargon) emerge.

At the receptive end, *pure word deafness* [25] may occur, where phoneme decoding is primarily at fault and hence speech comprehension is impossible.

A *syntactic breakdown* – agrammatism – is characteristic of Broca's aphasia [26]. Inflections, plurals prepositions, and personal pronouns are particularly affected, rendering speech like the contents of a telegram.

A semantic breakdown is seen in two varieties of aphasia: nominal aphasia [27] and semantic aphasia [28]. These are, respectively, those cases where a naming problem is the most outstanding feature, and those where a subject is unable to 'grasp the ultimate meaning' [28] of a sentence.

Nominal aphasia is then subdivided into cases where the naming problem is relatively specific to one modality – for example optic aphasia [29] where subjects can name things from description or when palpated, but not when presented visually – and those where the naming problem is relatively specific to one category of knowledge – for example, colour anomia [30].

The problem with this analysis of aphasia is that a semantic breakdown also occurs in the other two main nosological varieties of linguistic breakdown – non-aphasic misnaming and formal thought disorder. The practice until now has generally been to call the semantic anomaly by a different name depending on which nosological variety it is associated with, which does not solve anything: paraphasia in the context of aphasia, and neologism or word approximation in the context of formal thought disorder. Even this practice is variable. For example, Ardila and Rosselli [31] define a neologism as a word which cannot be traced back to any extant dictionary word, whereas they regard a word like 'summerly' as a paraphasia because it appears to derive from summer. In my view, the solution to all this is to retain the single term paraphasia for all inaccurate word selections, regardless of purported cause and regardless of whether the result sounds like a genuine word in the subject's lexicon or not. The next step is to analyse the linguistic reasons for the faulty 'word' choice. Ardila and Rosselli [31] did just this in the case of aphasia, and distinguished the following:

1. articulatory paraphasias (phonetic disintegration at the speaker's end, causing the 'd' of dog to sound like a 'b'– hence bog);
2. literal paraphasias (phonemic substitution at speaker's end, causing a true 'b' to be uttered instead of a 'd'– hence bog for dog);
3. morphemic verbal paraphasias (syllable substitution at the speaker's end, for example friendlish for friendly);
4. semantic verbal paraphasias (whole-word substitution at the speaker's end, for example chair for table).

The step after this is to compare the pattern of such anomalous words between the nosological categories. Ardila and Rosselli [31] also did this in the case of various sorts of aphasia – Broca's aphasia, Wernicke's aphasia, transcortical motor aphasia, conduction aphasia, and nominal aphasia. Lecours and Vanier-Clément [32] did it in the case of schizophrenic formal thought disorder, Broca's aphasia, and Wernicke's aphasia. Chaika [33] did *it* for schizophrenic formal thought disorder alone. Unfortunately, no-one has analysed the errors of non-aphasic misnaming in this way.

Taking the three studies together, the critical results were as follows. In transcortical motor aphasia there were virtually no paraphasias. In Broca's aphasia and conduction aphasia literal paraphasias abounded (predominantly phonemic breakdown). In Wernicke's aphasia there were equal numbers of literal and verbal paraphasias (indicating both a phonemic and a semantic breakdown). In nominal aphasia there were only verbal paraphasic errors (semantic breakdown only). Articulatory and literal paraphasias do not occur in schizophrenia. What do occur are morphemic verbal paraphasias; these, unlike the ones generated by Wernicke's and nominal aphasics, are composed of 'antonymic contrasts' [32], a 'preoccupation with too many of the semantic features of a word in discourse' [33], 'inappropriate noting of phonological features of words in discourse' [33], and 'production of sentences according to phonological and semantic features of previously uttered words, rather than according to a topic' [33]. In other words, Broca's aphasics may utter apparent new words because they mispronounce or substitute phonemes (e.g. pog). Wernicke's aphasics may utter new

words through sheer non-rule-governed (random) fabrications at the phoneme, subword or word level; for example, when asked to name a handkerchief a patient of Perecman and Brown [24] said, 'Well this is a lady's line, and this is no longer what he wants. He is now leaving their mellonpush'. Schizophrenics manufacture new words by means of rule-governed selections at the subword and word levels – see below.

As for a *pragmatic breakdown* in aphasia the linguistic levels primarily affected here are the phonemic, syntactic, and semantic. Any pragmatic consequences are secondary. In fact, in Broca's aphasia, the subject can develop a remarkable repertoire of communication with the few words and non-words at their disposal.

Non-aphasic misnaming

General considerations. The term was introduced by Weinstein and Kahn [34] for paraphasias occurring in subjects with generalized cerebral dysfunction. They claimed that the misnaming was rule-governed, and that the things misnamed were objects, people, and places connected with the subject's illness. They later claimed [35] that this theme-governed misnaming occurred in its purest form in subjects with right-sided lesions, less so in those with diffuse lesions, and not at all in those with left-sided lesions. Others, although not remarking on this precise theme-governed pattern, have noted that non-aphasic misnaming is the most striking disorder of language, if one occurs, in diverse examples of brain damage not confined to the classic language zones: alcohol intoxication [36], Korsakoff's syndrome [37], and head injury [38]. Another frequent comment is that the choice of phrase, even if there are no actual paraphasic words, is 'out of focus' [frontal leucotomy [39]] or indicates a 'laziness' [frontal leucotomy [40]]. For example, one of Tow's subjects defined a lecture as a 'talk generally given by doctors to enable other men to get on in the world'.

Linguistic considerations. It is not entirely clear whether non-aphasic misnaming is linguistically homogeneous, whether it is linguistically distinct from all varieties of aphasia, particularly nominal aphasia, or whether it differs from the semantic breakdown encountered in formal thought disorder. What is needed is a detailed linguistic analysis of the structure of the paraphasic responses such as that applied to formal thought disorder by Lecours and Vanier-Clément [32] and Chaika [33]. However, there are sufficient examples in Weinstein's writings on the topic [particularly Weinstein and Kahn [41]] to give a substantial clue to its nature.

Weinstein and Kahn distinguished three aspects of language use by their subjects.

1. There was 'paraphasic misnaming', where the name, the authors argued, was related to 'the object in terms of certain aspects of its function or structure… [and] misnaming was most frequently obtained with objects that bore a relation to the patients' personal problems mainly those of illness'. In fact, the examples given bear testimony to there being a problem of individual instance selection within a category, but no more. For example, one subject called a wheelchair a chaise longue, then a Morris chair and then an easy chair. Another subject called a radiator a stove; yet another called a bed a studio-couch. Weinstein's claim that the word choice was motivated by a desire to reduce the emotive impact of the things in the patients' surroundings may be true, but he presents no convincing evidence to this effect. What does emerge is a mistaken instantiation within a correct category.
2. There was inappropriate 'use of the second and third person'. Subjects would refer to their disabled limb as 'He's very limpy' or say 'There there don't worry you'll be alright', or generalize matters, 'I'm completely tired; I'm not the only one, everyone in my department is tired'. The only other situations in which such third-party references replace the self are the auditory hallucinations of schizophrenics, and the philosopher Wittgenstein's musings on the attraction of behaviourism [42].
3. Speech is 'stilted, ornate and pedantic'. Asked to give reasons for going to a doctor, one subject replied 'Lack of precision in dealing with my friends'. Another, asked to identify other patients on the ward, replied, 'Patients trying to get back to themselves from the normal standpoint of view'.

Therefore it would seem that non-aphasic misnaming is a form of *semantic-pragmatic disorder* [43]. For example, Cummings et al. [44] noted that, in their case of 'toxic encaphalopathy', as well as paraphasias, there were 'exaggerated stress prosody', 'loquaciousness' and 'poverty of content' in explaining a simple story.

Formal thought disorder

General considerations. The most outstanding feature of formal thought disorder, which, as we saw above, is the term used interchangeably for schizophrenic language disorder, is its contrast with aphasia.

In aphasia, it is the intrinsic structure of language which falls apart: the phonemic level is the most devastated, followed by the syntactical level, followed by the semantic level; the pragmatic level is only secondarily affected or is not affected at all. Moreover, the anomalies generally stem from random substitutions at the three bottom levels. In short, the Saussurian edifice is rotten to the core. Its foundations are crumbling from within.

In schizophrenia it is the pragmatic level which bears the brunt of the assault, the semantic level is next affected, the syntactic level hardly at all, and the phonemic level

not at all. Moreover, the changes in the semantic and syntactic components are not random but rule-governed, and are driven by top-down considerations (e.g. paraphasias at the semantic level exemplifying, as Lecours and Vanier-Clément [32] put it 'preoccupations of a more abstract order in which affectivity does not play a predominant role'). In short, the Saussurian edifice is not only intact, but working overtime ['inappropriate noting of phonological features of words in discourse… preoccupation with too many of the semantic features of a word in discourse' [33]]. Any deviance of the semantic and syntactical levels derives either from this autonomous self-referential overdrive, or from what Lecours and Vanier-Clément [32] referred to as 'unusual word choices… testifying to lexical wealth... adapted to the speaker's ideation' (in other words, not adapted to the listener).

Linguistic considerations. Pragmatic deviance is shown in the opaqueness of formal thought disorder with respect to communication of meaning. This is apparent in two major ways.

Firstly, there is contravention of the normal rules of discourse, through which, by means of cohesive ties between the current and the previous clause or sentence, the sense of what is meant to be expressed is made clear. A series of clinical terms – loss of goal, tangentiality, derailment, knight's move thinking, loosening of associations – attest to this deviance, although between them they neither identify essentially different problems nor throw any light on the cause of the deviance.

Secondly, the number of words per meaningful remark is disproportionately large relative to a normal person. A further series of clinical terms – circumstantiality, poverty of content of speech, poverty of thought, empty speech, verbigeration – attest to this aspect of their verbal output, and these too, between them, are virtually synonymous and neutral as to cause.

More detailed analyses of the pragmatic deficit in linguistic terms are scarce because the field of pragmatic language is still being developed. However, whenever one of the key concepts in the area (e.g. cohesion, reference, relevance) has been studied in the context of formal thought disorder, marked abnormalities have been found, for example cohesion and reference [45] and cohesion [46].

At the *semantic* level, the deviance is quite marked, a fact well recognised by Bleuler [4] and Freud [47]. Bleuler thought that he could discern some of the rules which make up the deviance, for example, that the least essential element of something was taken to represent the whole (e.g. shoe designating dance), a practice which is referred to as metonymy. Freud remarked:

If we ask ourselves what *it* is that gives the character of strangeness to the substitutive formation and the symptoms in schizophrenia, we eventually come to realise that it is the predominance of what has to do with words over what has to do with things.

Chaika [33], Kwapil et al. [48] and Spitzer et al. [49] all demonstrated that schizophrenics were more influenced than normal subjects by phonological and semantic elements in earlier parts of their own speech.

My mother's name was Bill and coo. St. Valentine's day is the starting season of breeding for birds. I had a little goldfish too, like a clown happy Halloween down [33].

Another well-attested rule is their tendency to select literal as opposed to figurative meanings. (Note that schizophrenics are not more concrete as opposed to abstract. This mistaken view of Goldstein [50] is still held to this day, despite numerous rebuttals). What schizophrenics do have is a predilection for abstract against metaphorical meanings.

In essence, the most parsimonious account of their semantic deviance is that they shift away from using language which refers to anything outside the language system itself. In this way, they are a living example of the position of the philosophers Derrida and Lacan on language as a closed self-referential system.

Altogether there is a vast literature on semantic deviance in formal thought disorder [51]. Very little of it is strictly incorrect, but much is too narrowly focused or too wedded to some out-of-date psychological model of the mind to be of much general relevance now. More seriously, almost without exception, experimenters have assumed that schizophrenics will perform badly on whatever linguistic task that they are offered. One of the most comprehensive books on schizophrenic thought disorder [52] is ruined by being based on the single premise that whatever schizophrenics do, they will do *less* efficiently than will normal subjects, until Sass [53] pointed out that the opposite was the case.

In conclusion, consider the psychopathological entity of object chaining, described by Maher [54] and Manschreck et al. [55]. This refers to a tendency to give long lists of the extension of a category: I have some beautiful things, the bust of Lincoln, the bust of Washington, the thinker, strawberry teapot and sugar bowl, some ashtrays [54].

This is none other than the lexicon running wild, with no appreciation of the communication of such a discourse.

At the *syntactical* level, the situation is still unclear. There appears to be no problem in understanding standard grammatical rules such as those required to pick up syntactical boundaries in other people's speech [56], or in using them to their advantage in remembering grammatically meaningful better than grammatically meaningless sentences [57]. But their spontaneous speech is alleged to be grammatically deviant in a number of ways [32 58-60 51].

What these last claims represent is not at all certain. Hoffman and Sledge [58], following Saussurian lines, maintained

that there were 'paragrammatisms' or paradigmatic substitutions for example 'My wife remains at *the small* (instead of *home*) to look after our daughter', and 'syntagmatic substitutions' for example 'That's why you know the fact I did there was no stigmatism attached' instead of 'There was no stigma attached to my deed'. In the first example the deviance has more of a semantic quality about it, and in the second there are both semantic and pragmatic deviant qualities. Anyway, the authors regard the problem as originating from some breakdown in prelinguistic thought'. Thomas and Leudar [61] found a tendency to make more errors than normal subjects did as the clausal complexity of what was said increased, but this was partly accounted for by impaired attention and what was the cause of any remaining deviance was not apparent.
There is no substantial evidence that the articulation and comprehension of phonemes are anything but normal. There is no *phonemic breakdown*.

Conflict of interests
None.

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