

Thought Disorders (TD) — Causes and Treatment

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Formal thought disorder, or disorganized thinking, refers to a disturbance in the coherence of a person's oral communication. There are many types ranging from low content of speech to excessive tendency to go off topic to coining new words or using existing ones in a highly unusual way. Formal thought disorder is particularly associated with the psychotic spectrum of diseases (typically, schizophrenia), but some types can be seen in some mood disorders as well as non-psychiatric etiologies. It may be accompanied by delusions and/or hallucinations, which are useful in narrowing down a diagnosis. In this article, common types of thought disorders, its epidemiology, etiopathology, diagnosis, and treatment will be discussed.



Definitions of Thought Disorders (Formal Thought Disorder)

Thought disorder refers to the disorganized thinking as evidence by disorganized speech. The cause of formal thought disorder is not established. Research has implicated abnormalities in the semantic system in patients with [schizophrenia](#). Formal thought disorder can be manifested in several ways.

The following are the common types or descriptors of formal thought disorder:

- **Poverty of speech:** The total quantity of speech is limited, resulting in short responses without details.
- **The poverty of content** (also known as alogia): The quantity of speech is normal, but it is vague and with high levels of abstraction (conveys little information). As a result, hardly any relevant information is obtained from the patient.
- **Pressure of speech:** The quantity of speech is high, and so is the rate, with possible increase in volume as well. It may be difficult to interrupt.
- **Distractible speech:** Maintaining a topic is difficult because of easy distractibility with any stimuli, such as objects on the table or wall, or even the interviewer's clothes.
- **Tangentiality:** Partially or completely irrelevant or unrelated responses to a given question.
- **Derailment** (also known as loosening of association or asyndesis): The speech gets frequently and perhaps progressively "derailed" from the main topic of discussion.
- **Incoherence** (also known as word salad or schizophasia): There is a major problem in the forming of sentences, with no cohesion: the normal syntax and/or semantics (i.e., rules of the language) are severely impaired. Example: "Tree way of nothing house".
- **Illogicality:** The sequence of thoughts that the person follows in arriving at the point may be completely impaired (although it may make sense to the person).
- **Clanging:** It is the association of words based on sounds without any apparent conceptual or logical connection between words, often manifesting as inappropriate and excessive rhyming or alliteration, etc. Example: "I fell down the well sell bell."
- **Neologism:** "New words" are created and used in place of and/or in addition to existing words.
- **Word approximations:** Using (old, existing) words in new or unconventional ways.
- **Circumstantiality:** The speech is long and includes many words and (irrelevant) details; the person takes quite long to get to the point. This differs from tangentiality in which the person never gets to the point.
- **Loss of goal:** There is difficulty in maintaining the point of the answer.
- **Perseveration:** The speech is characterized by excessive repetition of words/phrases or ideas.
- **Echolalia:** There is immediate or delayed repetition (parroting) of the words and phrases, usually those of the interviewer.
- **Thought blocking:** The speech flow gets suddenly interrupted due to a block in the thought (may last for few seconds to few minutes), and a completely new thought may then begin.
- **Stilted speech:** The speech is characterized by a very unusual tone of language and vocabulary, e.g., excessively formal tone or use of archaic words, etc.
- **Self-reference:** The speech is characterized by repeated referencing of the person to him- or herself.

While the aforementioned classification is from the point of view of the speech of the person (also known as disorganized speech), another classification attempts to **categorize these conditions based on the process of thought and of speech**

separately.

Psychiatrists consider formal thought disorder as being of two major categories, either involving the “content of the thoughts” or the “form of the thoughts”.

Disorders of content and control of thought vs. disorders of stream of thought

Disorders of thought are divided into disorders of content, form, and control of thought (e.g., delusions, hallucinations, paranoia, etc.) and disorders of stream of thought (equivalent to formal thought disorders).

The latter are sub-grouped into **disorders of thought of tempo** (flight of ideas/tangentiality, inhibition/poverty of speech, circumstantiality, etc.) and **disorders of continuity of thinking** (perseveration, thought blocking, etc.). The remaining are clubbed under disorders of speech (neologism, schizophasia, etc.).

Epidemiology and Etiopathology of Thought Disorders

Although a very large-sample study on the frequency of various types of formal thought disorders is lacking in patients with schizophrenia, the following is generally observed: **the most common types of formal thought disorder (among the aforementioned eighteen) are derailment, loss of goal, poverty of content, and tangentiality.** This is followed by poverty of speech, pressure of speech, illogicality, perseveration, self-reference, and incoherence, all of which are moderately common. The remaining thought-disorder symptoms are not common.

Formal thought disorder descriptors:

1. Poverty of speech: Restricted quantity of speech; brief, unelaborated responses.
2. Poverty of content of speech: Adequate speech quantity with prominent vagueness and inappropriate level of abstraction.
3. Distractible speech: Topic maintenance difficulties due to distraction by nearby stimulus.
4. Tangentially: Replies to questions are off-point or totally irrelevant.
5. Illogicality: Marked errors in inferential logic.
6. Word approximations: Unconventional and idiosyncratic word use.
7. Self-reference: The patient is liable to refer to the subject of conversation back to him/herself.
8. Paraphasic error (phonemic): Word mispronunciation, slip of the tongue.

The etiology of formal thought disorder has not been established. Formal thought disorder is a disorder of the executive function, due to impairment in the syntax-semantic system required for cohesive and coherent speech, and there is some loss of access to the lexicon as well.

Diagnosis of Thought Disorders

As per DSM-5, formal thought disorder is one of the essential criteria (Criterion A) for diagnosis of brief psychotic disorder, schizophrenia, and schizophreniform disorder. Derailment and tangentiality are seen in schizoaffective disorder.

Symptoms of thought disorders

Formal thought disorder is **typically associated with the psychotic range of diseases, particularly schizophrenia**; however, some types are found more commonly in other (mood spectrum) diseases such as mania (especially clanging) and depression (especially the negative speech symptoms such as poverty of speech, blocking, derailment, and loss of goal).

Other conditions, such as delirium and autism spectrum disorder, may also present with a formal thought disorder. **Circumstantiality can occur in individuals with a learning disability**, as well as those with obsessive personalities. Perseveration is common in individuals with organic disorders of the brain.

Note: Schizoid personality disorder and schizotypal personality disorder are marked by an absence of formal thought disorders.

Whether the etiology is primarily psychiatric or secondary to an underlying medical disorder can be partly discerned from certain points during history taking. **Patients with a medical disorder tend to be older and have an acute onset of the psychotic symptoms.** The presence of auditory hallucinations is strongly indicative of a primary psychiatric disorder.

There are different types of thought disorders. A flight of ideas refers to language that may be difficult to understand because it switches quickly from one unrelated idea to other. Circumstantiality refers to language that may be difficult to understand, because it is long-winded and convoluted in reaching its goal. Word salad refers to words that are inappropriately strung together, resulting in gibberish.

	Brief psychotic disorder	Schizophreniform disorder	Schizophrenia	Schizoaffective disorder	Psychotic mood disorder
Duration	1 day to 1 month	1–6 months	> 6 months (with at least 1 month of active phase symptoms)	> 6 months (accompanied by mood symptoms or > 2 weeks of psychotic symptoms without a manic or depressive episode)	Symptoms occur only during periods of mood symptoms
Negative symptoms	No	No	Yes	Yes	-
Positive symptoms	Yes	Yes	Yes	Yes	Yes
Presence of mood disorder	Yes	-	-	Yes	Yes, predominantly

Severity

Mere disorganized speech should not be considered as a thought disorder, as mild abnormalities are not uncommon. The symptoms must be severe enough to affect fluid communication. The severity of each symptom (including delusional and hallucinatory symptoms) can be evaluated by rating it on a 5-point Likert scale, ranging from 0 (not present) to 4 (severe); however, rating is not essential for the diagnosis of the disorder.

In addition, **recording of a sample of speech is a good strategy for both diagnosis and assessment** of disease progression or treatment efficacy. While assessing thought disorder symptoms, differences arising from different language backgrounds of the patient and physician, as well as from the patient’s exhaustion and other mild illness, must be kept in mind.

Laboratory tests

Laboratory investigations are not required for the diagnosis of psychiatric diseases; however, they **should be performed to rule out common medical and drug-induced causes** (see Differential Diagnoses section for details). The common tests done include complete blood count, kidney, and liver function tests, thyroid assessment, tests

for alcohol and other drugs such as cocaine, blood and urine cultures for infections, vitamin levels, electrolyte abnormalities, and glucose levels. Brain imaging, electroencephalogram, or other investigations are indicated if other secondary causes (e.g., demyelinating disorders) are suspected.

Differential Diagnoses of Thought Disorders

Many medical conditions can have symptoms in the psychotic spectrum:

- Anatomic (e.g., traumatic brain injury).
- Drug-induced and medication-induced psychiatric disorders (recreational drugs such as cocaine, phencyclidine, hallucinogens, amphetamines, alcohol, etc.; and medications such as corticosteroids, levodopa, etc.).
- Endocrine disorders (e.g., iatrogenic Cushing syndrome [hypercortisolism], hyper- [or hypo-] parathyroidism, adrenocortical insufficiency [Addison disease], thyroid diseases).
- Infectious diseases (e.g., neurosyphilis, HIV, cerebral abscess, encephalitis, influenza, Lyme disease, hepatitis C, Creutzfeldt-Jakob disease).
- Metabolic diseases (e.g., acute porphyrias, Wilson's disease).
- Vitamin deficiency (e.g., vitamin B12).
- Others (e.g., systemic lupus erythematosus, delirium, hepatic and renal encephalopathies).

Differentiating between the psychiatric conditions*:

*Careful attention should be given to the possibility that a recurrent disorder (e.g., bipolar disorder, recurrent acute exacerbations of schizophrenia) may be responsible for any recurring psychotic episodes. Treatment of Thought Disorders Treatment of the medical disorders should aim at treating the underlying cause, which will resolve the psychiatric symptoms.

Psychotic disorders can be managed using psychotherapy, family-oriented and other social-educational therapies, and pharmacotherapy. Medications used in the pharmacological treatment of psychotic disorders (schizophreniform disorder, schizophrenia, and the like) include second-generation antipsychotics such as aripiprazole, asenapine, iloperidone, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, and ziprasidone. In refractory cases, electroconvulsive therapy may be tried.

Review Questions. The answers can be found below the references.

1. Which of the following is not a type of disorganized thought disorder?

- A. Thought insertion
- B. Thought blocking
- C. Thought derailment
- D. Tangentiality
- E. Neologism

2. Which of the following type of formal thought disorder is a negative symptom?

- A. Pressure of speech
- B. Distractible speech
- C. Thought blocking

- D. Echolalia
- E. Word approximation

3. Thought blocking is not seen in patients with which of the following conditions?

- A. Anxiety
- B. Schizophrenia
- C. Brief psychotic episode
- D. Mania
- E. Schizoaffective disorder

References

[Thought Disorder](#) via Johns Hopkins Guides. Hopkinsguides.com, retrieved 1 August

Andreasen, N. C., & Grove, W. M. (1986). Thought, language, and communication in schizophrenia: Diagnosis and prognosis. *Schizophrenia Bulletin*, 12(3), 348.

Covington, M. A., He, C., Brown, C., Naçi, L., McClain, J. T., Fjordbak, B. S., & Brown, J. (2005). Schizophrenia and the structure of language: the linguist's view. *Schizophrenia research*, 77(1), 85-98.

Stern, T. A., Fava, M., Rosenbaum, J. F., & Wilens, T. E. (2015). *Massachusetts General Hospital comprehensive clinical psychiatry*. Elsevier Health Sciences. P 436-437.

Robinson, D., Woerner, M. G., Alvir, J. M. J., Bilder, R., Goldman, R., Geisler, S., & Lieberman, J. A. (1999). Predictors of relapse following response from a first episode of schizophrenia or schizoaffective disorder. *Archives of general psychiatry*, 56(3), 241-247.

Fish, F. J., Casey, P. R., & Kelly, B. (2007). *Fish's clinical psychopathology: signs and symptoms in psychiatry*. RCPsych Publications.

Andreasen N.C. (2016) Thought Disorder. In: Fatemi S., Clayton P. (eds) *The Medical Basis of Psychiatry*. Springer, New York, NY.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub. PP 94-97.

[Clinical manifestations, differential diagnosis, and initial management of psychosis in adults](#) via www.uptodate.com

[Schizoaffective Disorder Differential Diagnoses](#) via [emedicine.medscape.com](#)

[Schizophreniform Disorder Differential Diagnoses](#) via [emedicine.medscape.com](#)

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Answers: A,C,D

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