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What Conceptual Metaphors Appear in Texts on Psychedelics and Medicine? Corpus-Based Cognitive Study

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Abstract: This paper aims to present conceptual metaphors employed to discuss psychedelics in texts published online by organizations popularizing knowledge about psychedelic substances. The foundation of this investigation comprises Cognitive Grammar, Conceptual Metaphor Theory, and Corpus Linguistics. A corpus of 160 texts on medical research, mental health, and therapy published in 2020 is built to enable quantitative and qualitative analysis. The investigation reveals the existence of the conceptual metaphors: psychedelic experience is a trip (a single experience that requires return and may involve adventurous, sacred, challenging aspects), psychedelic experience is a journey (a set of experiences (trips), integration process, and development, may involve healing), psychedelic substance is a tool / bridge / vehicle / agent providing access. The study of collocates of the word “psychedelic” also suggests the conceptualization of the psychedelic substances and/or experience as medicine in the analyzed corpus.

Keywords: conceptual metaphor, collocation, corpus linguistics, psychedelics.

Introduction

The aim of the following article is to present selected conceptual metaphors found in the popularizers’ discourse on psychedelic substances (DMT, LSD, psilocybin) in online texts. To investigate this, the area of research comprised of articles published on websites by organizations that popularize knowledge about psychedelics is chosen. The stated area is of particular interest to this paper because of the lack of linguistic studies of the discourse of this community. Therefore, a corpus of 160 texts published in 2020 is built to enable a quantitative and qualitative analysis to search for conceptual metaphors. Based on the research, conclusions will be formed on how these psychoactive drugs are perceived or represented in the selected subculture.

Before discussing this topic further, it is crucial to define “psychedelics”. Nichols & Barker (2016, p. 264) provide the following definition: “psychedelics (serotonergic hallucinogens) are powerful psychoactive substances that alter perception and mood and affect numerous cognitive processes. They are generally considered physiologically safe and do not lead to dependence or addiction.” Different terms have been used to name these types of substances: *psychomimetic*, *hallucinogens*, and *entheogens*, but *psychedelics* (of Greek

origin: psyche meaning “mind/soul” and delos – “manifest/reveal”) is the term that has gained popularity not only among users of these substances but also in scientific publications.

There is scarce research on press coverage of psychedelics, for example, a journalist’s study on how they were portrayed between 1958 and 1965 (Siff, 2008) and the prevailing narrative regarding psychedelics in media in the four states of the Visegrad Alliance (Feher, 2018). Another study was carried out by a group of psychologists (Bienemann et al. 2020), who analyzed the language used to describe bad trips (unpleasant or frightening experiences) on a web forum. This topic is also analyzed from literary (Dickens, 2012; Green, 2013; Slattery, 2008) and anthropology (Letcher, 2008) perspectives.

Another reason to conduct a linguistic analysis on the topic of perceiving or creating the perception of psychedelics is the current state of scientific findings, which suggests that psychedelics may constitute a breakthrough therapy for many mental health problems, including the treatment of depression, anxiety, obsessive-compulsive disorder, and post-traumatic stress disorder (Kyzar et al., 2017; Vollenweider, Komater, 2010), and may also be a treatment for alcohol dependence (Bogenschutz et al., 2015; Tófoli, de Araujo, 2016) and cigarettes (Johnson et al., 2017).

Considering the range of research to date, a particular focus will be on the verbalization of insights about psychedelics in articles dealing with ongoing medical research, mental health, psychological therapy, and psychiatric treatment. This area is of interest because of the universal nature of medical research, as opposed to religion or the legal and social situation in different countries.

A distinctive feature of selected organizations popularizing knowledge about psychedelics is the inclusion of specialists from various fields and, thus, the interdisciplinary character of published texts. This community does not represent a hermetic science but a hybrid approach to the topic of psychedelics. These organizations publish texts by both academics and activists or enthusiasts. Therefore, they have the potential to influence readers from different social and cultural backgrounds.

The theoretical basis for the following discussion is conceptual metaphor theory (Lakoff, Johnson, 1980). As a tool for quantitative research, the Lancsbox program (Brezina, Weill-Tessier, McEnery, 2020) is used to structure the material and find collocations with selected keywords. By employing these methods, the formulation of conclusions about the perception of psychedelic agents will be scientifically relevant.

1. Methodology

The theoretical foundation of the study consists of Cognitive Grammar¹ (Langacker, 1987), Conceptual Metaphor Theory, hereafter: CMT (Lakoff, Johnson, 1980; Kövecses, 2002, 2010; Grady, 2007), and Corpus Linguistics (McEnery, Wilson, 2001; McEnery, Hardie, 2011).

Lakoff and Johnson (1980) revolutionized the term metaphor. Prior to their studies, metaphors were a matter of literary investigation. The linguists (1980, pp. 5–9) state that “the essence of metaphor is understanding one kind of thing in terms of another”. They stress that linguistic expressions mirror mental processes, but the conceptualization does not have to be the same in every society or culture.

Kövecses (2002, p. 327) claims that “conceptual metaphors are characterized by a set of conceptual correspondences between elements of the source and target domains. These correspondences are technically called ‘mappings.’” These mappings occur at the conceptual level and are expressed in metaphorical linguistic expressions. The relation between CMT and culture, or more specifically, the discourse of a specific sociolect, must not be overlooked, as Kövecses (2010, p. 209) explains:

We know from work in sociology, anthropology, sociolinguistics, etc. that languages are not monolithic but come in varieties reflecting divergences in human experience. It makes sense to expect metaphor variation in the varieties of language most commonly identified by these researchers. I will present evidence that, I believe, supports the idea that metaphors vary not only cross-culturally but also within cultures. This variation can occur along a number of dimensions including the social, regional, ethnic, style, subcultural, diachronic, and individual dimensions. I conceive of this approach to metaphor variation as the cognitive dimension of social-cultural diversity.

The topic chosen for this paper is the conceptualization of psychedelics (mainly: DMT, LSD, psilocybin) in texts published online by organizations popularizing knowledge about psychedelic substances; therefore, Kövecses’ (2010) reflections on the cultural and social impact on the variation of conceptual metaphors is crucial in investigating a specific sociolect, such as one linked to the psychedelic community. Since the experiences under the influence of such drugs seem to be non-concrete, far from everyday reality, it is expected that to make them more comprehensible, people interested in psychedelics might communicate about them in metaphorical terms. Consequently, CMT provides a theoretical background for this investigation.

Corpus Linguistics contributes a parallel and correlated with CMT methodology, which allows researchers to describe linguistic phenomena and test theories. Large amounts of data reveal tendencies, and computer programs are much quicker and more accurate than humans. In the search for conceptual metaphors, mainly two tools supplied by the Lancsbox program, Key Work in Context (KWIC)² and Graphcoll, are used. The Graphcoll feature is described below.

The process by which collocates are identified is as follows. A collocation search is performed in the corpus for the given node. This computes all word frequencies within the collocation window for the specified node. Then, a statistical comparison is run between the frequencies of words within the collocation window and those outside of the window. Each point (‘vertex’) in the graph (displayed as a circle) represents a word type in the corpus. Lines (‘edges’) run from the node to its collocates, their length representing the strength of the collocation. Shorter lines indicate higher values of the association measure, and thus stronger collocational bonds. The spatial arrangement of the individual

collocates and their relative position in the graph is motivated solely by the clarity of display and does not have implications for the analysis of the collocational relationship. Collocates and connecting lines are only added to the graph if the statistical comparison reads above a user-defined threshold. (Brezina et al., 2015, p. 149)

Since psychedelics have not been widely discussed in mass media, the number of occurrences of the word *psychedelic* is relatively low in the largest (yet not specified) corpora such as the British National Corpus or the Corpus of Contemporary American English, therefore building a representative, balanced, and unbiased corpus for the investigation of discourse on psychedelics was crucial. The corpus analyzed for this paper consists of 160 texts, 212 639 tokens (single, particular instances of an individual word in a corpus); 15 055 types (a single particular word form; any difference of form (e.g. spelling) makes a word a different type; all tokens comprising the same characters are considered to be examples of the same type). Type-token ratio³ equals 0.07, which validates the choice of texts included in the corpus and suggests the potential reoccurrence of conceptual metaphors.

The analysis included: investigating keywords (target domain) +(BE)/ +(MODAL), rereading in search for conceptual metaphors and examining collocations using the Graphcoll tool. The study resulted in finding the following conceptual metaphors: psychedelic experience is a trip / journey, psychedelic substance is a tool / medicine, body/mind is a container, seeing is understanding, existence is a plant. These findings were examined using reverse search (source domain) in order to enable further analysis. Conceptual metaphors: psychedelic experience is a trip/ journey and psychedelic substance is a tool/medicine are studied in this paper.

A preliminary study involved the search of keywords (psychedelic substances: ayahuasca, cannabis, DMT, MDMA, LSD, mescaline, psilocybin, ketamine) and their collocations using the Graphcoll feature. Data obtained with Graphcoll did not demonstrate pervasive conceptual metaphors; however, it indicated the need for a study of keywords followed by copular verbs and modal verbs engaging the Key Word In Context tool. Rereading 271 extracts containing 62 words each (context: 30 left, node: keyword +(BE)/ +(MODAL), 30 right) resulted in the identification of common metaphorical expressions discussed below.

In the researched corpus, instances of conceptualizing psychedelic experience as a trip or a journey can be found 70 times (each). Since these lexemes are partly synonymous, a thorough analysis of dictionary definitions of *trip* and *journey* is needed to establish domains of meanings covered by these words.

Comparison of *trip* and *journey* domains based on multiple dictionary entries (Merriam-Webster, Collins Dictionary, Longman English Dictionary, Oxford English Dictionary, Cambridge Dictionary) can be summarized as follows. The term *trip* implies a short time, while *journey* – long. Distance is profiled only by the lexeme *journey*. Phrases *business trip*, *school trip*, *shopping trip*, etc. refer to PURPOSE domain of trip. Both *trip*

and *journey* imply DESTINATION, but solely *trip* includes RETURN or PLEASURE. What is especially interesting for this investigation is the fact that all respectable dictionaries mention the meaning of *trip* as “an intense visionary experience undergone by a person who has taken a psychedelic drug (such as LSD); *informal* the strange mental experiences someone has when they take a drug such as LSD *a bad trip*”. On the other hand, the meaning of *journey* is related to development: “A long and often difficult process of personal change and development; the *journey* from youth to maturity”. The mentioned differences suggest investigating conceptual metaphors psychedelic experience is a trip and psychedelic experience is a journey as separate seems worthwhile.

In the following part of this chapter, the most prominent examples of the conceptual metaphors psychedelic experience is a trip, and psychedelic experience is a journey are provided. The metaphorical expressions are in bold in order to draw readers’ attention.

As can be noticed, not all excerpts contain the lexemes *trip* or *journey* since they are not necessary to constitute the conceptual metaphors. However, these expressions: *blast*, *peak*, *launch*, *bridge*, and *explore*, appear in the semantic fields of *trip* and *journey*.

In the first citation, psychedelic experience (lasting a short amount of time) is conceptualized as a trip, which can be noticed due to the occurrence of the phrases: *blast*, *peak of the trip*. The usage of the noun *blast* (Merriam-Webster: a violent gust of wind; to remove, open, or form by or as if by an explosive; to proceed rapidly or aggressively) refers to the method of consuming DMT – inhaling, as well as the quickly experienced changes in perception. There is a metaphorical connection between the *peak* and the most far-off experience in comparison to reality.

In the second excerpt, the conceptualization of the first stages of the DMT experience is employed by the phrase *launch into*, which implies the domain of a vehicle. The first three citations name the DESTINATION (another dimension/realms of universal consciousness), but the domain of RETURN is overtly expressed in (2) by “**trip from** couch to cosmic consciousness **and back**”. The third citation also engages the other aspect of a trip – the possibility of meeting someone, “God or aliens”.

The authors of (1) and (2) conceptualize DMT as an agent providing access while (3) as a bridge. Interestingly, the last citation (4) incorporates the author’s explanation of the difference between *trip* and *journey* in regard to the psychedelic experience. The differentiation is provided by a psychotherapist who uses psychedelics in couples therapy. The metaphorical expression *trip* is preceded by an adjective *single*, which emphasizes the therapist’s view on the most prominent contrast, i.e. duration of the experience/process. Another discrepancy pointed out relates to the perception that the *trip* tends to be pleasurable, while journeys require work, mindfulness, and development. The author clashes psychedelic therapy with “popping a pill”, which must be taken into account in the latter part of this chapter involving the analysis of the conceptual metaphor psychedelic substance is a medicine. The excerpts are followed by comparing mappings of conceptual metaphors

psychedelic experience is a trip, and psychedelic experience is a journey and a further analysis of the investigated examples.

1) Offering a quick blast into another dimension, DMT is known to occasion among the most profound trips of any psychedelic. Although its effects last only about 30 minutes, the peak of a DMT trip happens almost instantaneously, within about the first 10 minutes (McClure, 2020).

2) DMT grants access to otherwise invisible realms of universal consciousness, where extraterrestrial communication and confrontations with death commonly occur. When taken properly, the user launches into an ethereal journey of disembodiment, on a hyperdimensional round trip from couch to cosmic consciousness and back, all in less than 20 minutes (Glynos, 2020).

3) Strassman administered over four hundred doses of DMT to volunteers at the University of New Mexico, leading him to famously coin DMT as the “Spirit Molecule.” This label suggested that DMT may represent a bridge between subjective and objective realities—an explanatory biological framework for the subjective effects during phenomenal experiences like death, near death experiences (NDEs), or states of religious or transcendental mysticism (Glynos, 2020).

4) For some couples, psychedelics offer a chance to examine the entirety of the relationship without judgment. In a single trip, couples may explore what they’ve created together, and recreated, for better or worse, through the passage of time. Growing or repairing your relationship, however, isn’t as simple as popping a pill, or going on a trip. It takes work, both during the psychedelic experience, and more importantly, the integration period afterward. (...) It’s wonderful to feel deeply compassionate to yourself during a trip, but speaking therapeutically, it doesn’t matter much if that feeling isn’t harnessed, nor those lessons maintained. If proper integration is not done mindfully, it will just be a trip and the journey aspect of it will be lost, Renye says. It is a journey from feeling broken to experiencing one’s self as whole (Hodges, 2020).

The excerpts above illustrate the occurrence of conceptual metaphors psychedelic experience is a trip and psychedelic experience is a journey. The mappings of these metaphors may seemingly be similar; however, the differences between the notions of *trip* and *journey* studied previously must be taken into consideration.

Table 1
The comparison of mappings of conceptual metaphors psychedelic experience is a trip and psychedelic experience is a journey

TARGET DOMAIN	SOURCE DOMAIN TRIP	SOURCE DOMAIN JOURNEY
person under influence of a Psychedelic substance (<i>Psychonaut</i>)	traveler	voyager
person taking care of the one under influence	Guide	Guide
psychedelic substance	bridge /agent providing access	bridge /agent providing access
the state of consciousness	peak	peak
the purpose of the psychedelic experience	discovery	exploration
the effect of the psychedelic experience	fun / pleasure / lack of pleasure and return	development

Table 1 demonstrates the essential aspects of metaphorical expressions in the chosen corpus. As presented in this table, the most significant discrepancies involve mapping the purpose and the effect of the psychedelic experience. To *discover*, defined in Merriam-Webster as “to obtain sight or knowledge of for the first time”, relates to the purpose of a (short) TRIP while *exploration* (from Merriam Webster: explore – “to investigate, study, or analyze: look into, to become familiar with by testing or experimenting, to examine especially for diagnostic purposes”) corresponds to the meaning of *journey*: “a long and often difficult process of personal change and development”. The mappings of the effects differ tremendously; the source domain TRIP implies fun and returns, while in the source domain JOURNEY the focus is put on the development.

What is also noteworthy, a psychedelic substance may be mapped in various ways depending on the author, and the particular example, personalization frequently occurs (e.g. psychedelics reveal lost memories/ provide opportunity/offer a deeper dive into feelings), therefore they can be mapped as agent providing access. As shown in excerpt 4, psychedelics are also conceptualized as a *bridge*, or less frequently *vehicle .of transformation*).

Psychedelic substance is a tool

While the previous metaphors relate mostly to the experience, the following ones are employed to conceptualize the psychedelic substance. The definitions of particular substances and the term tool must be studied to comprehend the metaphorical nature of the citations below. The eminent dictionaries: Merriam-Webster, Collins, Oxford, and Cambridge provide concise definitions of dimethyltryptamine (DMT)⁴, lysergic acid (LSD), and psilocybin. The definitions contain phrases such as: “a naturally occurring or easily synthesized hallucinogenic drug”, “a psychedelic tryptamine, neurotransmitter serotonin”, “a semisynthetic illicit organic compound, a synthetic crystalline compound”, “lysergic acid diethylamide”, “a hallucinogenic indole”, “a crystalline phosphate ester”, therefore, they tend to be focused on the chemical matter.

In some of the definitions, biological and emotional responses are also noted: “may trigger the onset of psychosis or emotional problems in predisposed individuals”, “induces extreme sensory distortions, altered perceptions of reality, and intense emotional states, that may also produce delusions or paranoia, and that may sometimes cause panic reactions in response to the effects experienced”, “causes people who use it to see the world differently from the way it really is or to see things that do not really exist”. The esteemed dictionaries note neutral or negative consequences of consuming any of these substances, while the organizations popularizing knowledge on psychedelics are inclined to mention them relatively positively.

Nevertheless, none of the dictionary entries for DMT, LSD, or psilocybin defines these substances using any terms or metaphorical

foundational, valuable, primary, promising, essential, necessary, powerful, clinical, useful, and great to emphasize a positive approach to these substances.

Psychedelic substance is medicine

The extracts below are selected to demonstrate the conceptualization of psychedelic substances as medicines. This metaphor is closely connected to the previous one, psychedelic substance is a tool, although in some occurrences, their disparateness is emphasized.

8) The ability of psychedelic mystical experiences to drastically improve or even cure depression, potentially by enhancing meaning, should be a clue that depression may have causes which are simply difficult to measure (Dinsmore, 2020).

9) Roth's interest in researching psychedelic compounds stems from promising research showing psilocybin as an effective medication for treatment-resistant depression. Reviewing findings from the Phase II clinical trial data, Roth was intrigued by the large magnitude and duration of therapeutic effect of psilocybin (Virdi, 2020).

10) Jen, a 47-year-old in the Chicago area, noticed improvement in her chronic migraines after an acid trip. (...) Caitlin Thompson, founder of the mental wellness supplement company EntheoZen, says LSD helped her manage chronic nerve and joint pain, while also alleviating her pain for weeks after each trip (Weiss, 2020).

The term *medication* in the majority of cases (52/61 occurrences) applies to pharmaceutical medications, like prescription drugs, SSRI; however, it does not underestimate the existence of the conceptual metaphor psychedelic substance is medicine since there are many more excerpts pointing to this type of conceptualization without employing the lexeme *medication* itself. As presented in the examples above, the notion of medical usage of psychedelics (psilocybin and LSD) is conveyed by verbs: *treat, cure, heal, manage pain*, etc.

There is an important discrepancy between the notions of a *cure* and *medicine* noted in the most eminent dictionaries: a cure provides a complete and permanent solution and makes an illness go away, while medicine may be used to prevent, alleviate, and affect well-being. In most studied citations, a *cure* is either non-existent, non-specified or referred to as penicillin. Nevertheless, the authors share an optimistic attitude towards taking psychedelics as part of medical treatment (11) (12).

11) There is still no magic pill that can cure depression. Instead, these drugs may open up a window of plasticity during which the brain the patient, really is more responsive to therapy (Calder, 2020).

12) What are the implications of this international advocacy of psilocybin therapy? For people suffering from major depressive disorder (MDD) or treatment-resistant depression, it could mean a long-awaited cure. Unlike conventional talk therapy and medication, which generally

need to be administered for years without interruption, psilocybin often requires just one or two initial sessions, plus occasional “boosts” to alleviate depression long term (Calderon, 2020).

The phrase *psychedelic medicine* is found 54 times in 160 texts, while *psychedelic medicines* 11 times, which may lead to the conclusion that the authors much more often understand therapeutic usage of psychedelic substances together with the integration process and other forms of psychotherapy as a branch of medicine rather than focus on particular substances as medicines. When referring to psychedelics, the phrase *plant medicine* is found 45 times and *plant medicines* 36 times in 160 texts. Additional interesting results are provided with the Graphcoll tool (see Brezina et al., 2015).



Fig. 1

First-order collocates: 04 MI2, R0-L1, default threshold, no filter applied

The display in Figure 1 enables noticing the relationship between the psychedelic adjective and collocates validated by the association measure. The darker and the closer the dot is to the node (psychedelic), the higher the statistical connection there is. Therefore, the connection between *psychedelic* and *medicine*, *therapy*, *integration*, *research*, and *experience* is inevitable. Yet, the existence of the conceptual metaphor *psychedelic substance is medicine* must be investigated further.

Conclusion

This paper intends to describe conceptual metaphors found in the popularizers’ discourse on psychedelic substances (DMT, LSD, psilocybin) in 160 selected texts on medical research, psychotherapy and psychiatric treatment published online in 2020. This investigation forms a fraction of studies on the Conceptual Metaphor Theory and employs corpus linguistics’ methodology. Therefore, this paper presents both quantitative and qualitative analyses. The subsequent conclusions

are formulated after examining the examples above (as well as nearly 40 more instances of metaphorical expressions among 271 studied excerpts).

In the case of the corpus containing articles on medical research, mental health, and therapy, the following conclusions are drawn. The conceptual metaphor psychedelic experience is a trip refers to a single experience, requires return and may involve adventurous, sacred, challenging aspects. The conceptual metaphor psychedelic experience is a journey refers to a set of experiences (*trips*) that requires integration and development and may involve healing. Psychedelic substances are conceptualized in a variety of ways: bridge, vehicle, agent providing access, tool, or seemingly – medicine. It is noteworthy that some of these conceptualizations may exist simultaneously or separately, but in the majority of cases, the source domain TOOL engages the semantic field of MEDICINE. These conclusions must be compared to conceptual metaphors found in other corpora in order to build a complete view of conceptualizing psychedelics by selected organizations.

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Notes

- 1 Langacker's (1987) theories regarding especially Predicate Nominative Constructions and The Auxiliary: Grounding lead the first stages of research aiming to specify and reduce the number of excerpts to analyze.
- 2 A way of displaying a node word or search term in relation to its context within a text. This usually means the node is displayed centrally in a table with context displayed in columns to its left and right. Here, 'key word' means 'search term' (McEnery, McGlashan, 2018, p. 6).

- 3 A measure of vocabulary diversity in a corpus, equal to the total number of types divided by the total number of tokens. The closer the ratio is to 1 (or 100%), the more varied the vocabulary is (McEnery, McGlashan, 2018, p. 9).
- 4 Due to the lack of dictionary entries for dimethyltryptamine or DMT provided by Longman, Cambridge, and Oxford Dictionaries, the urban dictionary has been chosen to present a comparable number of definitions.