## Psychedelic and traumatic experiences as pivotal mental states and transformative experiences

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## Speaker

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## Psychedelic and traumatic experiences

Psychedelic experience = state caused by ingestion of psychoactive doses of classic psychedelics

Traumatic experience = state caused by "[e]xposure to an event or situation ... of an extremely threatening or horrific nature" [1]

### Traumatic and psychedelic experiences

Traumatic experiences are horrific, unwanted events that are forced on people and often lead to deteriorations in mental health and wellbeing

Psychedelic experiences are actively sought out by many people, and are sometimes reported to lead to improvements in wellbeing

But: They appear to share some features

## TRAUMATIC PSYCHEDELIC EXPERIENCES?

## TRAUMATIC AND PSYCHEDELIC EXPERIENCES

## PIVOTAL STATES?

## MESSAGE

## Traumatic psychedelic experiences?

- Sometimes, psychedelic experiences do appear to be frankly traumatic [2,3]
  - Can involve experiences of (psychological) death, threat to psychological coherence and wholeness, horrific visual scenes, fear and anxiety, violence, abuse
  - Can lead to symptoms of PTSD or ASD
- Some, though not all, descriptions of later re-experiencing of effects and "flashbacks" are also quite similar to trauma-related re-experiencing [3,4]
  - E.g., re-experiencing altered state of consciousness that occurred at time of trauma / psychedelic experience, sensory re-experiencing
  - Depersonalization/derealization as negative re-experiencing type consequences of both experiences
  - May be largely explainable through similar mechanisms
  - But: Not all re-experiencing of psychedelic effects is perceived as negative [5]

## Traumatic psychedelic experiences?

- Many more psychedelic experiences have some elements of struggle, suffering, hardship, fear, or change over their course from terrible to glowing
  - But most bad trips, challenging experiences do not end up traumatizing people
  - Some afterglow and therapeutic effects may even be attributable to overcoming them, surviving, making it through, persevering, "glad it's over"
- People may also recall and "re-experience" earlier traumatic events under psychedelics [6]
  - This, however, is not traumatic per se, and can apparently also be healing

## TRAUMATIC PSYCHEDELIC EXPERIENCES?

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### Involve significant acute alterations to cognitive processes and subjective experience

- Altered attention and memory, thought process
- Typically heightened but sometimes blunted emotions
- Feelings of unreality or dream-likeness, altered sense of time and space
- Alterations in sense of self, depersonalisation
- Nature of acute experience important for enduring effects
  - Nature of subjective psychedelic experience matters for wellbeing effects [7-8]
  - Peritraumatic state not been well characterized due to obvious ethical and practical reasons
    - But its features, especially dissociation and suppression of affect have implications for later symptoms [9-11]
- → Approaching and assessing the peritraumatic state (as an altered state of consciousness) in more detail could be useful for both clinical and scientific purposes

### • Often evaluated as highly central / meaningful experiences

- High centrality of traumatic events problematic and predictive of symptoms: maladaptively viewed as reference point, anchor of narrative, typical example [12]
- Psychedelic experiences sometimes considered among the most meaningful and significant experiences of people's lives [13-14], though *centrality* is typically not studied
- Can be transformative, e.g. in L. A. Paul's [15] sense of being both
  - *epistemically transformative:* impossible to fully imagine beforehand and thus difficult to explain to others, understandable only by experiencing them, and
  - *personally transformative*: changes in personality observed both after psychedelic [13, 16] and traumatic [17-19] experiences; both may change perspectives, priorities, core values [20-21]
  - Notably, values, perspectives and personality may also change "for the better" after trauma, as in posttraumatic growth [18, 21]
    - Similar growth recently reported after ayahuasca use as well [6]

### • May lead to rapid, substantial changes in beliefs and world view

- In PTSD, problematic/maladaptive trauma-related beliefs and appraisals, typically related to self, others, and the world, are key to symptoms and recovery from them [22-24]
- Posttraumatic cognitions often reported by adolescents exposed to repeated violent trauma:
  - "I have permanently changed for the worse", "I must be vigilant at all times", "I cannot handle it when things get tough"; "I can never stop bad things from happening", "Life is not fair", I cannot trust people" [25]
- But belief changes also feature in posttraumatic growth, e.g., highly endorsed items among war refugees:
  - "I discovered I am stronger than I thought I was", "Knowing I can handle difficulties, "I have a stronger religious faith" [26]

- A central theory of the mechanisms of action of psychedelics suggests they make beliefs more revisable, relax beliefs [REBUS]
- After psychedelic experiences, world-view/metaphysical belief changes are reported
  - Increased dualistic beliefs, belief in non-human consciousness, paranormal beliefs, spiritualism after psilocybin use [13]
  - Increased religious belief after DMT [28]
  - Past use of psychedelics associating with endorsement of idealism [29]
  - Shifts towards pan-psychism, fatalism, and dualism in surveys, ceremonies and clinical trials [30]
- More "mundane" belief changes have not been explored much quantitatively
  - Focus instead on related topics like insights, feelings of connectedness, openness, relaxed rigidity of beliefs, attitudes about self
  - But: psilocybin decreased confidence in (self-selected) negative self-beliefs [31]

 $\rightarrow$  Worth applying existing measures of (psychopathology-related) cognitive change to psychedelics

- Put another way, occasions of potentially intense learning and adaptation, for better or worse
  - Learning in traumatic experiences also adaptive for enhancing survival but often problematic in our current circumstances
  - Psychedelics appear to enhance both fear acquisition and extinction [32] and increase suggestibility the direction of changes is highly context-dependent
  - Increased (cortical) neuroplasticity well-demonstrated for psychedelics [33]
  - Plasticity during traumatic experiences not, to my knowledge, directly measured, but acute stress is generally pro-neuroplastic [32,34]

BUT: Plasticity is a double-edged sword!

- Both present highly novel, unexpected, surprising, modelincongruent content / information
- Assimilation or (over)-accommodation of unexpected information [35] maybe a useful way of thinking about grappling with psychedelic experiences as well
- Integrating them into our life stories and worldviews by making sense of them *in their proper context* may be key for wellbeing and mental health
- The words, scripts and types of stories we have at our disposal may play a large role in how we narrate, present and integrate them

### • Psychedelics also cause states of high stress

- Increase blood pressure, heart rate, stimulate HPA axis, raise corticosterone and cortisol levels [36-37], through serotonin system
  - Cause or consequence of strange subjective experience?
- An interesting link between traumatic and psychedelic experiences may be serotonin as a "a stress detection and response system" [34]
  - Stress and uncertainty release serotonin [33]
  - Psychedelics have major effects through 5-HT<sub>2A</sub>, but acute stress also associated with increased 5-HT<sub>2A</sub> expression and function, particularly in cerebral cortex [33]
  - Both activation and upregulation of these receptors is linked to associative learning

 $\rightarrow$  Both trauma and psychedelics activating a 5-HT<sub>2A</sub>-mediated system for rapidly adjusting to changing circumstances or new threats? (This is speculative!)

 Effects of stress on attention and memory processes crucial for psychedelic experiences, too

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| oes acute stress play a role ir   | n the lasting therapeutic effects of |
| sychedelic drugs?   |                                      |
| de Wit <sup>1</sup> <sup>1 M,</sup> M. Heilig <sup>2</sup> and A. K. Bershad <sup>3</sup> |                                      |
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- Stress may contribute to the high salience / meaningfulness of the psychedelic experience and everything that is encountered in it, including memories and insights [38]
- The role of the stress response in therapeutic use of psychedelics should be explored more thoroughly [32, 38]

## TRAUMATIC PSYCHEDELIC EXPERIENCES?

## TRAUMATIC AND PSYCHEDELIC EXPERIENCES

## **PIVOTAL STATES?**

MESSAGE

## Pivotal mental states?

Carhart-Harris and Brouwer introduced

<u>pivotal mental states</u>

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Review

**Pivotal mental states** 

Ari Brouwer 🝺 and Robin Lester Carhart-Harris 🕩

as an umbrella category for

"[t]ransient, intense hyper-plastic mind and brain states, with exceptional potential for mediating psychological transformation," [33] with

- 1. Elevated cortical plasticity
- 2. An enhanced rate of associative learning
- 3. A unique capacity to mediate psychological transformation
- Crucially: Acute stress as a trigger
- Context and relational frames vital to quality and outcomes!
- Traumatic and psychedelic experiences as reliable, "automatic" strong triggers for a pivotal mental state? Samuli Kangaslampi – 2023/11/24 – Psykedeelit 2023

## TRAUMATIC PSYCHEDELIC EXPERIENCES?

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## Message and going forward

- Both traumatic and psychedelic experiences are potentially transformative events, times of rapid learning and change that are often later evaluated as highly central/meaningful
- Psychedelic experiences, too, are states of high stress, with implications for attentional and memory processes, assignment of salience and meaning, and therapeutic use
- Exploring the wider category of pivotal mental states could highlight the possibility and importance of (negative and positive) transformative experiences, and the unique characteristics of altered, intense states that involve rapid adaptation, to appreciate that

*"just as a single traumatic incident can have lasting untoward effects, so can a single propitious experience, if sufficiently profound, have lasting beneficial effects"* - Charles Savage / International Foundation for Advanced Study, 1962 [39]

## Message and going forward

- Future research on psychedelics could apply findings and tools from psychotraumatology, psychotherapy research, and clinical psychology in addition to or rather than psychedelic-specific measures, e.g.
  - Use measures of cognitive change, posttraumatic symptoms and growth, centrality of event etc.
  - Apply best practices in managing traumatic experiences to highly negative psychedelic experiences
- Studying the peritraumatic experience as an altered state of consciousness with transformative potential could be useful for psychotraumatology

## Memory effects as unexplored bridge

- Memory of the traumatic event plays a very important role in its consequences and effects and trauma-focused treatment centrally involves working with the memory
- Effects of psychedelics on remembering and memories poorly understood, e.g.

  How do psychedelics affect recall and access to autobiographical memories?
  How do memories change if recalled under psychedelics?
  What are memories of psychedelic experiences like (compared with "normal" and traumatic memories for example)?
  And how does all this relate to therapeutic effects?
- $\rightarrow$  Hoping to change that with current research!

## Questions, comments?

- Slides of this talk with references available at https://kangaslampi.net/psykedeelit2023.pdf
- Email: <a href="mailto:samuli@kangaslampi.net">samuli@kangaslampi.net</a>
- Planning to take a psychedelic or MDMA? Follow me on X/Mastodon/FB to take part in a citizen science study on autobiographical memories soon!





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