

A Unified Theory of Addiction

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BACKGROUND

- It might be possible to explain all addictions with a single theory. Emerging evidence points to the *displacement mechanism* as the universal source of addiction.
- Displacement behavior represents a bio-behavioral mechanism in the brains of all animals that allows the organism to deal with situations that cannot readily be faced yet cannot be avoided -- situations involving uncertainty, confusion, or feeling trapped or thwarted (i.e., "stress").
- The displacement mechanism is thought to rechannel overflow mental energy to another drive (e.g., grooming drive) when two drives, e.g., fight or flight, equally oppose each other. Although adaptive, if displacement behavior occurs excessively, it may become maladaptive. For example, socially isolated dogs may lick their paws raw [Fig 2]. Sheep threatened by a predator will graze despite the danger [Fig 1].
- The displacement mechanism is triggered by sensory cues. Initially, a specific cue (e.g., a liquor "high") suggests to the brain that the behavior (e.g., drinking) associated with the cue might be used as a displacement behavior to deal with problems/stressors/thwarting and overflow mental energy. The brain then appears to lock onto the respective behavior or drive, and henceforth similar cues trigger the displacement mechanism to activate that behavior in stressful situations.
- The classic displacement situation was U.S. soldiers in Vietnam, where one in five was strung out on heroin. It was greatly feared that a huge epidemic of heroin addiction in the U.S. would result. However, on returning home, 90% never used heroin again [Fig 6]. Once the soldiers were released from service, their brains no longer needed to displace the overflow mental energy by getting intoxicated. This shows that it is not the substance that causes addiction, but rather a life situation and displacement activity.



Fig 1: When threatened by a predator, sheep will graze as displacement behavior, despite the danger

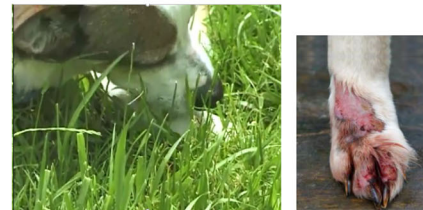


Fig 2: Normal licking displacement behavior in dogs may become excessive and destructive

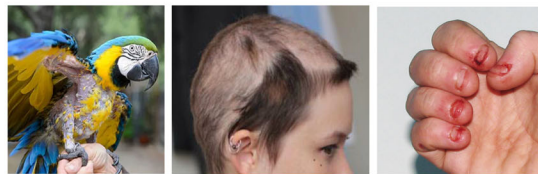


Fig 3: Feather plucking, hair pulling, and nail biting appear to be displacement behavior gone rogue in birds and humans



Fig 4: Eating addiction and obesity appears to be destructive displacement behavior in animals and humans



Fig 5: "Chasing losses" perpetuates gambling addiction, as losses are stressful, and the person's brain uses gambling to displace stress, a vicious circle.



Fig 6: Heroin addiction from displacement of the Vietnam war resolved in 90% of soldiers upon returning home.

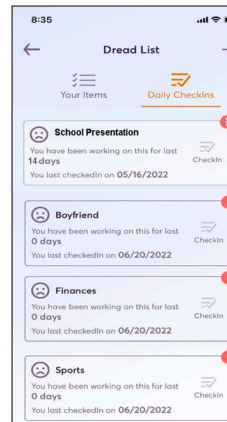


Fig 7: Dread List in app



Fig 8: Rechanneling in app

METHODS

- Moving the opposing drives/behaviors out of equilibrium, by resolving the person's underlying problem/stressful situations, theoretically should mitigate the displacement mechanism and serve as a treatment for addictive behavior [Fig 7].
- A smartphone app intervention, based on the displacement mechanism and adaptable for any addiction, has been developed, consisting of (1) helping the individual identify the problems or stressors that form the basis of the opposing drives (Dread List), and (2) creating strategies to either avoid or effectively resolve these problems/stressors. [Fig 7]
- Also, it is possible for the individual to willfully rechannel overflow mental energy to a nondestructive behavior, e.g., hobbies [Fig 8].

RESULTS

- Anecdotally, a 20-year-old obese female was no longer tempted to turn into the McDonald's drive-through, once she created plans for her difficult life situations before driving home from work.
- In the UCLA eating addiction trial in progress, one participant, a 19-year-old male, happened to be affected not only by eating addiction but also by alcohol addiction. In addition to withdrawal from his problem foods, the participant was able to decrease vodka consumption from two bottles per week to a half bottle per week by detox/withdrawal and his plans to deal with the death of a close friend and arguments with his family, including talking to other people about his grief and avoiding his family.

CONCLUSIONS

- The displacement mechanism may inform a unified theory of addiction. A universal treatment for all addictions may be feasible.
- A universal treatment for addictions would have the advantage in that co-occurring addictive disorders could be treated concurrently.

References

Pretlow R, Glasner S, (2022) *Eat Weight Disord* 27:2897–2903