

Addiction: The Mind's Answer to Trauma

Eli Kotler, MD

3 CPD Hours



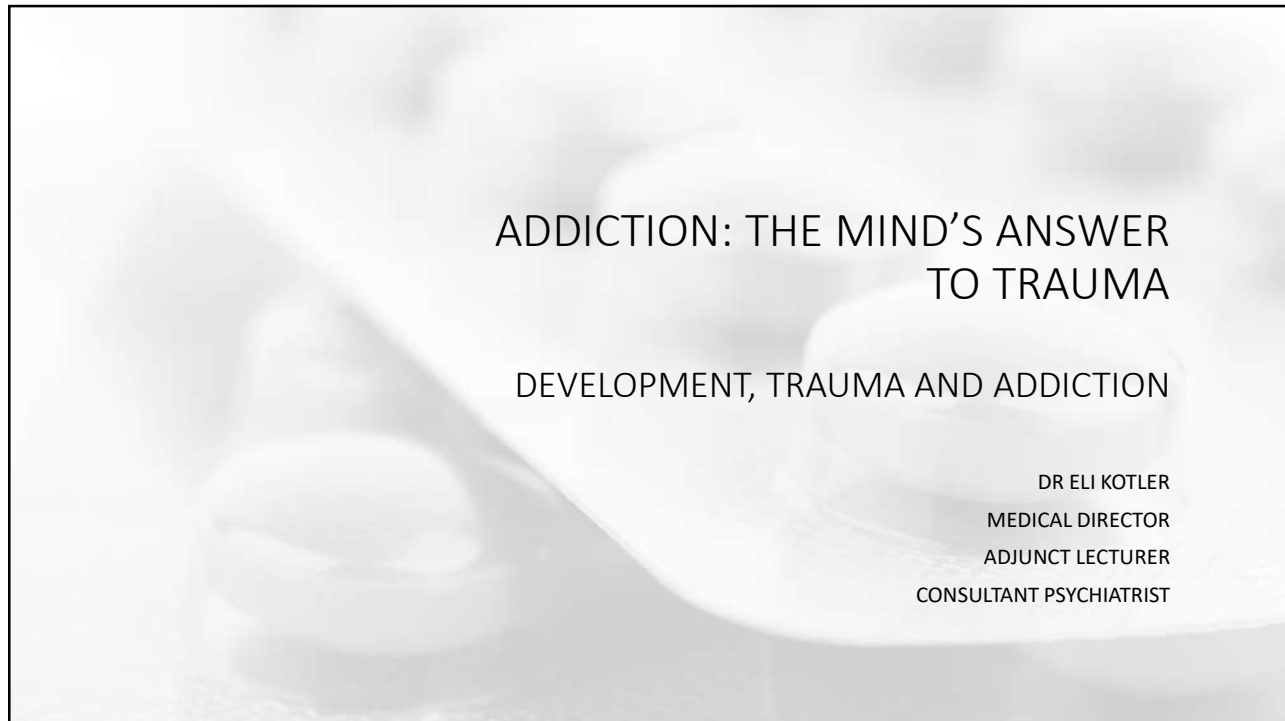


Visit: www.delphicentre.com.au

ABN: 62 406 997 428

Contents

Title	Page
PowerPoint Handout	3 - 55



ADDICTION: THE MIND'S ANSWER TO TRAUMA

DEVELOPMENT, TRAUMA AND ADDICTION

DR ELI KOTLER
MEDICAL DIRECTOR
ADJUNCT LECTURER
CONSULTANT PSYCHIATRIST

1

OUTLINE

1. Human Nature
2. Addictions
3. Treatment

To understand addiction we need to understand trauma, to understand trauma we need to understand emotion, and to understand emotion we need to understand human nature.

2



3

HUMAN NATURE

"I believe that the dilemma can be solved by defining the essence of man not as a given quality or substance, but as a *contradiction inherent in human existence*."

"Man transcends all other life because he is, for the first time, *life aware of itself*. Man is *in* nature, subject to its dictates and accidents, yet he *transcends* nature because he lacks the unawareness which makes the animal a part of nature..."

"...the patient must travel on two tracks in the analysis: he must experience himself as the little child, let us say, of two or three that he is unconsciously, but he must at the same time also be an adult responsible person who faces this part of himself..."

Erich Fromm

4

HUMAN NATURE

- Theoretical Bases
 - Free Energy Theory
 - Affective Neuroscience
 - Psychoanalytic Theory
- Finer Points
 - Unconscious
 - Relationship between thoughts and feelings
 - Behaviours

5

Psychoanalytic theory

Philosophy (of Mind)

Free-Energy Principle

Affective Neuroscience

6

FREE ENERGY – GUIDING PRINCIPLE OF ALL LIFE

- Karl Friston
 - Revolutionised brain mapping/imaging
 - Originator of the Free Energy Principle
 - Most influential neuroscientist alive



7

INCREASED ENTROPY



8



DECREASED ENTROPY/FE

IF YOU SAW THIS OCCUR, YOU MAY THINK THAT THE INK IS 'ALIVE'

9

FREE ENERGY

- Life follows one rule – to decrease Free Energy
- Free Energy = Entropy = Surprise = Prediction Error
- To do this, all existing entities share a minimum structure and function
- Structure
 - Sensory – sense the environment/other
 - Internal models of the external world
 - Motor – impact the environment/other
- Function
 - To decrease Free-Energy
 - Prediction error
 - Surprise
 - Entropy

10



11

COMPUTATIONAL NEUROSCIENCE

We don't have to understand the
maths (though would be nice to!)

We can understand the concepts of
how the brain-mind functions

12

BAYESIAN MODELLING/STATISTICS TO CALCULATE FE

"Theoretical ancestors to predictive coding date back as early as 1860 with Helmholtz's concept of unconscious inference. Unconscious inference refers to the idea that the human brain fills in visual information to make sense of a scene."

"From birth, the human brain captures statistical regularities in sensory-motor patterns and stores them as internal representations. The brain then uses these stored representations on a regular basis and almost instantaneously, to predict continuously and unintentionally what incoming visual sensations stand for in the world."

"When the brain receives new sensory input from the world in the present, it generates a hypothesis based on what it knows from the past to guide recognition and action in the immediate future."

- Free-Energy = Surprise = Prediction Error
- Survival relies on internal working models of the world predicting what to expect – both inborn and learnt
- If predictions don't align with incoming information the system will work to align the two

13

DECREASING FE/SURPRISE/PE

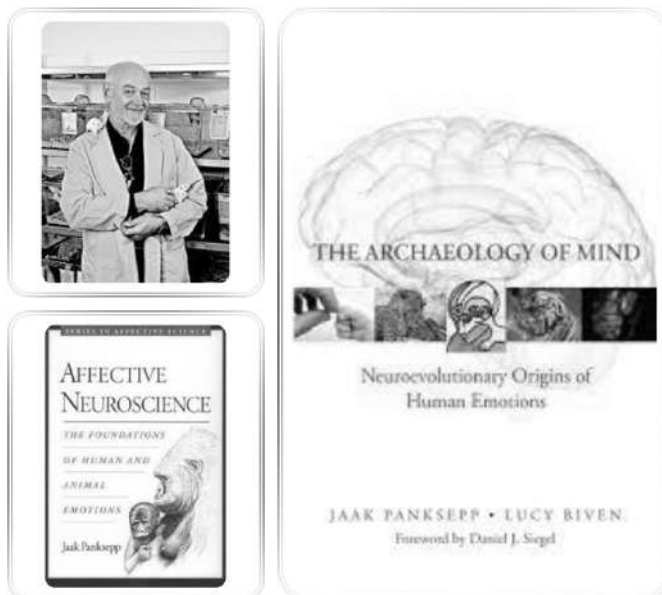
- FE = incoming sensory information versus prior expectations of the world
- When incoming sensation does not align with prior predictions = Increase in FE/surprise/PE
- To decrease FE, incoming data must be made to 'fit' with prior assumptions about the world
 - Alter the world (through motor mechanisms) so that the incoming data fits the internal working model
 - Saccadic suppression/omission
 - Repetition-Compulsion (of a mechanism that kept me alive in the past)
 - Alter internal working model

14

FE – WHAT CAN WE LEARN ABOUT HUMAN NATURE?

- We don't see reality, we see an interpretation of reality, grounded in what we *expect* to see (predictions) from past experiences
- Predictions are based in internal working models of the world that have been used in the past to survive
- Automatic behaviours can operate to decrease free-energy by forcing the world to look like past experience – to alter reality to fit with the internal prediction (? also thoughts)
- Affective Neuroscience – essentially explains what the internal working models are by identifying the underlying survival needs of humans

15



AFFECTIVE NEUROSCIENCE – THE BIOLOGICAL UNDERPINNINGS OF HUMAN LIFE

- Jaak Panksepp (RIP 2017)
 - Devoted his life to pre-clinical science of the neural mechanisms of emotions
 - Critical of the behavioural and cognitive approaches of main-stream neuroscience
 - Inspired Temple Grandin

16

EDITED 'THE CAMBRIDGE DECLARATION ON CONSCIOUSNESS'

"The absence of a neocortex does not appear to preclude an organism from experiencing affective states. Convergent evidence indicates that non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviors. Consequently, the weight of evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Nonhuman animals, including all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates."

17

HUMAN NEEDS/INTERNAL WORKING MODELS OF THE WORLD

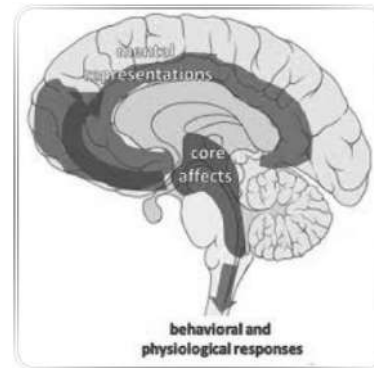
- Encoded in sub-cortical neural circuitry
 - Biological
 - Sensory
 - Social/Mammalian



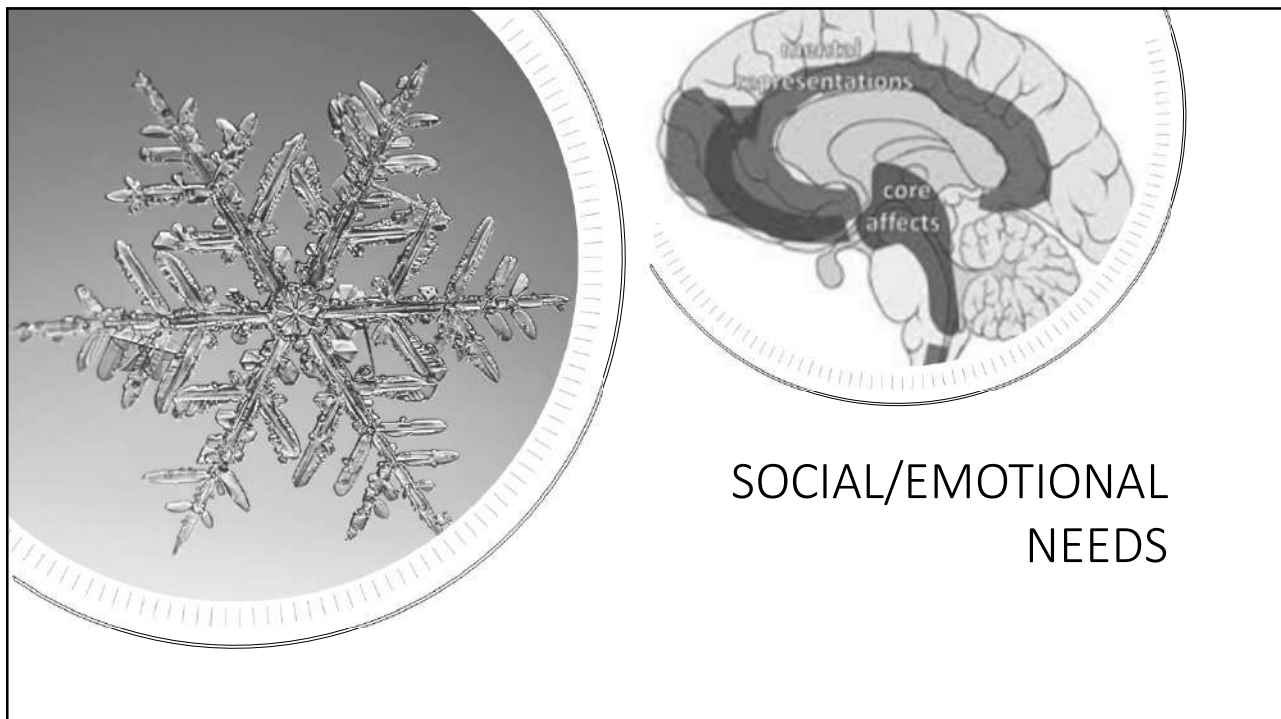
18

SOCIAL/EMOTIONAL NEEDS

- Internal working models include emotional/survival/need circuits in the brainstem/limbic regions
- This is why the internal models are related to core emotions
 - Object-relations/Internal objects
 - Jung's complexes
 - Classical Neuroses
- The social/mammalian Survival/Need/Emotional circuits
 - SEEKING
 - FEAR
 - ANGER
 - LUST
 - PLAY
 - CARE
 - ATTACHMENT



19



20

WHAT ARE FEELINGS?

Biological	Sensory	Social/emotional/mammalian
<ul style="list-style-type: none"> •Oxygen •Toilet •Food/energy and water 	<ul style="list-style-type: none"> •Hand on a barbeque •Disgust 	<ul style="list-style-type: none"> •7 circuits

21

SURVIVAL CIRCUITS CREATE FEELINGS

- Feelings are “Ancestral Voices”
- Baby does not need to learn
 - Feels bad to be constipated
 - Feels bad when it is too cold
 - Feels bad when mummy/daddy are absent
- Feelings have 3 aspects
 - Valence – ‘good’ and ‘bad’ (homeostatic)
 - Quality – what the need is
 - Intensity – how significant is the need at this moment in time

22

SEEKING

- The basis of all meaningful, automatic actions
- First and foremost, one NEEDS to SEEK
- Dopamine circuit (MFB) NOT the brain's pleasure circuit
- All pleasures have two aspects
 - Wanting = SEEKING
 - Liking
- Feels good to SEEK, but not the feeling of consuming/liking

23

FEAR

- One NEEDS to stay safe and survive
- Fear/Anxiety act as an aversive barrier to things which can harm us/cause us pain
- Fear 'learning' can occur after one exposure (related to concept of neuroses)
- Fear versus Panic (ATTACHMENT)

ANGER

- One NEEDS to protect one's NEEDS

24

LUST

- One NEEDS to procreate

PLAY

- One NEEDS to PLAY
- Hierarchies
- Social cohesion
- Amphetamines decrease PLAY in animals (Panksepp)

25

CARE

- One NEEDS to care for the young

ATTACHMENT (PANIC/GRIEF)

- One NEEDS to ATTACH
- Opiates/Oxytocin and others

26

EMOTIONS AND LEARNING/DEVELOPMENT

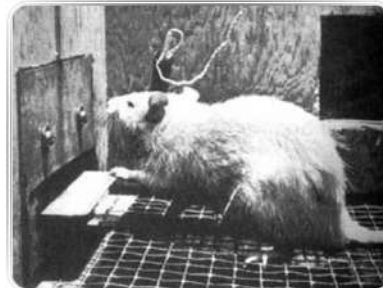
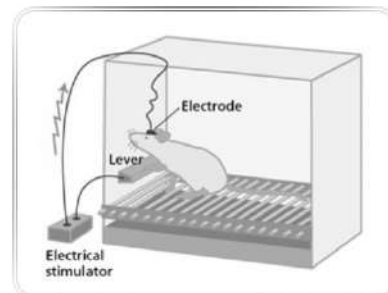
- Feelings guide learning/development
- Conditioning in animals/humans likely based in feeling states
- Panksepp
 - “...no, Skinner would never have accepted that rats have feelings. I gave him a chance, but he blew me off”
- Skinner
 - “A behavioural account has two unavoidable gaps – between stimulus and response, and between reinforcement and a resulting change in behaviour.”



27

CONDITIONING

- What happens “between stimulus and response”?
- What is the “gap”?
- Panksepp says FEELINGS
- Therefore, FEELINGS guide learning/development



28

DEVELOPMENT/LEARNING

- “Memory... is a useful tool for anticipating and dealing with future events... by anticipating survival issues, intrinsic affective states provide immediate guidance of behaviour. These feelings are connected to world events through learning... Thus, through the blending of our instinctual emotional abilities and associated memories of external life events, we begin to experience many neutral aspects of the world affectively”.
- “...the unconditioned emotional responses to environmental events are the felt ‘rewards’ and ‘punishments’ within the brain.”
- “Emotional learning involves the acquisition of an emotional response to a previously neutral experience. Emotional memory is the retention of their response over time.”
- “...acquisition of new responses is automatic and involuntary – and all the essential circuitry is situated below the neocortex.”
- Hence, learning is often “neither conscious nor cognitive”.
 - Panksepp

29

FREE ENERGY & AFFECTIVE NEUROSCIENCE

- All entities follow the same functional principle, which is to decrease prediction error/entropy/FE
- In humans/animals the predictions are based in the homeostatic emotional/survival circuits
- We want to survive in the world, and each emotional/survival circuit needs to remain within narrow boundaries to ensure survival. This is the prediction.
- When our survival is threatened, an emotional/survival circuit will detect this, and the FE will increase (a prediction error).
- This is also associated with a ‘bad’ feeling.
- Bad feelings aren’t only avoided because they feel bad, bad feelings represent that the mind-brain has detected something which threatens its survival, and according to the FE principle, the mind-brain-body will compulsively act to decrease the FE = act to remove the ‘bad’ feeling.
- One way to do this is to alter reality to fit with the internal model of the world
- The second way is to update the internal working model

30

DEVELOPMENT WHEN NEEDS ARE MET



Lots of positive emotional
experiences



Learn healthy patterns to get my
needs met

31

DEVELOPMENT WHEN NEEDS NOT MET

- Childhood full of difficult feelings
- Learn to meet needs in a compromised way/conflictual way
 - Conflict will be 'solved' to ensure survival
 - ATTACHMENT versus FEAR/ANGER
 - Two general possible outcomes (splitting) – by altering internal working models/predictions
 - FEAR/ANGER will be 'sacrificed' to ATTACHMENT (leads to idealization of care-giver, and fear, anger will be repressed and distorted toward self and others as projections)
 - ATTACHMENT will be 'sacrificed' to FEAR/ANGER (leads to 'independence' and repressed loneliness, abandonment, rejection)
 - Personality becomes shaped by unmet needs (difficult feelings) and the resultant compromise formations (which rids us of the difficult feelings by altering our reality – if I don't feel it, it doesn't exist)
- Details of this developmental theory is psychoanalytic developmental theory

32

CONFLICT

“That Freud’s theory is instinctivist, explaining human behaviour as the result of the struggle between the instinct for self-preservation and the sexual instinct (and in his later theory between the life and death instincts) is too well known to require any documentation.”

Erich Fromm, The Anatomy of Human Destructiveness

“...any other example of neurotic conflict would show a like incompatibility of conflicting drives and their unconscious and compulsive nature, leading always to the impossibility of deciding between the contradictory issues involved. Allowing for an indistinct line of demarcation, the difference, then, between normal and neurotic conflicts lies fundamentally in the fact that the disparity between the conflicting issues is much less great for the normal person than for the neurotic. The choices the former has to make are between two modes of action, either of which is feasible within the frame of a fairly integrated personality. Graphically speaking, the conflicting directions diverge only 90 degrees or less, as against the possible 180 degrees confronting the neurotic”.

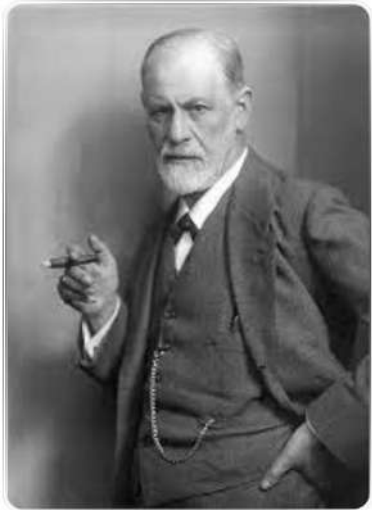
Karen Horney, Our Inner Conflicts

33

CONFLICT

- Joseph Sandler “...symptoms are very carefully constructed as last-line measures when the defences fail. You tell us that this is done in order to preserve well-being, to avoid anxiety, in order to serve the same function the defenses served, even though the individual may suffer from the pain of the symptom.”
- Anna Freud “...symptom formation...is a compromise. It avoids the worst, but of course we wouldn’t call it a symptom if it didn’t also cause pain and loss.”
 - The Analysis of Defence

34



PSYCHOANALYTIC DEVELOPMENTAL THEORY

- “We know, too, that to suppress the development of affect is the true aim of repression, and that its work does not terminate if this aim is not achieved”

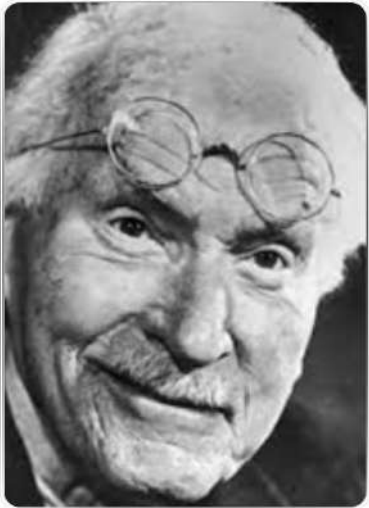
35



PSYCHOANALYTIC DEVELOPMENTAL THEORY

- “...every individual has a limited number of defences at his disposal, and that he may use them against the drive or against the affect, but the defense against the affect is much easier to demonstrate to the patient.”
- Anna Freud, The Analysis of Defence

36



PSYCHOANALYTIC DEVELOPMENTAL THEORY

“everything that touches this complex, however slightly, excites a vehement reaction, a regular emotional explosion. Hence one could easily represent the trauma as a complex with a high emotional charge.”

Jung 1966, page 130, paragraph 262. The therapeutic value of abreaction. Original 1921.

37



PSYCHOANALYTIC DEVELOPMENTAL THEORY

“Compulsive drives are specifically neurotic; they are born of feelings of isolation, helplessness, fear and hostility, and represent ways of coping with the world despite these feelings; they aim primarily not at satisfaction but at safety; their compulsive character is due to the anxiety lurking behind them. “

Karen Horney, *Our Inner Conflicts*

38



PSYCHOANALYTIC DEVELOPMENTAL THEORY

- "...In my own mind I always see defense as being defense against affect, in the sense that if it were not for the unpleasant affect, one would not defend".
- Joseph Sandler, The Analysis of Defence

39



PSYCHOANALYTIC DEVELOPMENTAL THEORY

- "The person using a defense is generally trying unconsciously to accomplish one or both of the following: (1) the avoidance or management of some powerful, threatening feeling, usually anxiety but sometimes overwhelming grief, shame, envy, and other disorganizing emotional experiences; and (2) the maintenance of self-esteem."
- Nancy McWilliams, Understanding Personality Structure in the Clinical Process: Psychoanalytic Diagnosis

40

PERSONALITY DEVELOPMENT AND EMOTION

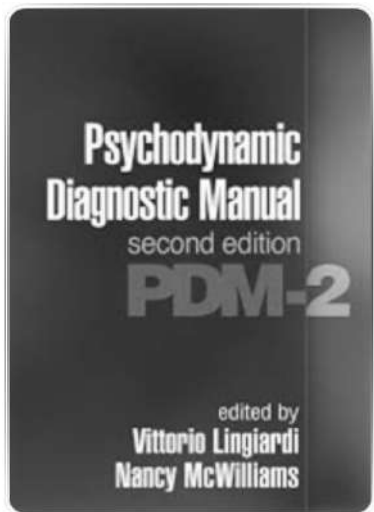


41

ADVERSE CHILDHOOD EXPERIENCES

- These overwhelming emotional experiences (OEEs) also define 'trauma'.
- OEEs can be relatively small or large depending on the degree of emotional overwhelm felt by the individual.
- The mind-brain deals with these experiences through DMs which create splits and distort the personality
 - Avoid the affect
 - Distort reality
- Trauma is the result of an overwhelming experience, primarily affectively overwhelming.
- Trauma therefore is the process of the psyche creating splits in itself – between conscious and non-conscious/head and heart.
- These splits are actively and dynamically maintained throughout life via personality and behaviours, including addictions.

42



- “The most prominent psychodynamic model of addiction interprets addiction as a form of self-medication against dysphoria or disordered mood... because an addiction serves a defensive function, it is very hard to stop. It ameliorates suffering, but because that relief is only temporary, the person needs to engage again in the defensive behaviour of addiction once the relief wears off... Psychoactive drugs help people who misuse substancesw to tolerate intolerable feelings...”

43

THE FINER POINTS...

- Thoughts, emotions and behaviours
- Conscious and non-conscious
 - Two type of non-conscious material
 - Inherently
 - Adaptively/Dynamic

44

THOUGHTS AND EMOTIONS

“...the essential basis of our personality is affectivity. Thought and action are, as it were, only symptoms of affectivity”.

Jung 1972b, page 38, paragraph 78. The psychology of dementia praecox.

Core belief versus core emotion

45

EMOTIONS, THOUGHTS AND BEHAVIOURS

- Homeostatic survival mechanisms related to feelings.
- Ancestral voices to help identify when survival needs not met with negative affect.
- The brain-mind will automatically use the ‘motor organs’ to decrease free-energy = decrease prediction error = decrease negative affect
- Thoughts and behaviours have a *function* and *meaning*.
 - From a biological perspective; decrease Free Energy
 - From a psychological perspective; decrease negative affect
- Examples
 - Thoughts; rationalization
 - Behaviours; compulsions in OCD

46

BEHAVIOURS

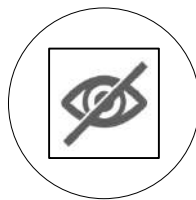
- Behaviours are compulsive when driven by emotional complexes. The emotional triggers will remain unknown if we don't take time to *feel them* ('unconscious').
- Behaviours have a purpose, hence are meaningful.
- Based on a neuropsychanalytic model, compulsive behaviours are driven by emotional circuits (complexes) to decrease free-energy/prediction error/painful feelings. They re-create the past in a manner which decreases negative emotion (in the moment), often fear (neurosis).
 - Repetition-compulsion
- Emotional forces (not feelings) underly automatic, compulsive behaviours.

47

CONSCIOUSNESS & NON-CONSCIOUSNESS



ACCEPTED THAT SIGNIFICANT AMOUNTS
OF COGNITIVE PROCESSING OCCURS
OUT OF CONSCIOUSNESS



PERCEPTION CAN OCCUR OUTSIDE OF
CONSCIOUSNESS (E.G. BLIND-SIGHT)



STRONG EVIDENCE THAT EMOTIONAL
PROCESSING CAN OCCUR OUTSIDE OF
CONSCIOUSNESS

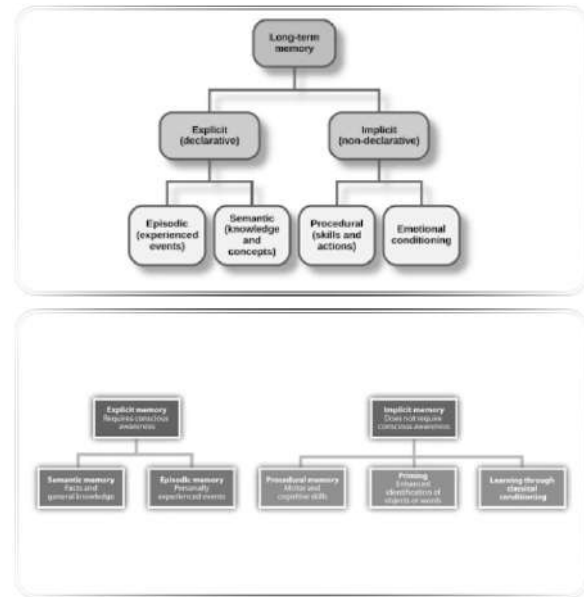
Degree and Complexity of Non-conscious Emotional Information Processing – A Review of Masked Priming Studies

Rohr, Michaela ; Wentura, Dirk

Frontiers in human neuroscience, 2021-06-22, Vol.15, p.689369-689369

48

CONSCIOUSNESS & NON-CONSCIOUSNESS



49

CONSCIOUS AND NON-CONSCIOUS PROCESSING

Clear difference between 'depth psychology' and non-depth-psychology

Do non-conscious processes have clinically relevant impacts on conscious processing?

If so, can these non-conscious processes be identified in a meaningful way?

A question of human nature

50

CONSCIOUS AND NON-CONSCIOUS PROCESSING

With clinical ramifications

- Freud
 - “where there was it there should be I”
- According to Jung, Neurosis is
 - “a relative dissociation, a conflict between ego and a resistant force based upon unconscious contents”

51

3 TYPES OF UNCONSCIOUS MATERIAL

- “on the one hand the ego rests on the total field of consciousness, and on the other, on the sum total of unconscious contents. These fall into three groups: first, temporarily subliminal contents that can be reproduced voluntarily (memory)... second, unconscious contents that cannot be reproduced voluntarily... third, contents that are not capable of becoming conscious at all”.
 - Jung Coll. Works, 9/1 paragraph 3

52

CONSCIOUS AND NON-CONSCIOUS PROCESSING

- Joseph Sandler “It occurs to me that we distinguish between subjective experiential content which is kept out of consciousness and defense mechanisms which are unconscious in quite a different sense, then we could say that our interpretation of the defense mechanisms is really a creating of new mental representations for the patient in analysis of the mechanisms he is using. This last is quite different from something which was once conscious, from which attention was withdrawn, counterforces applied, and which might become conscious again. If we interpret mechanisms, we interpret machinery of the ego, so to speak, and can give the patient, perhaps for the first time, a representation of the mechanisms he has used.”
- Anna Freud “Yes, I quite agree.”

53

CONSCIOUS & NON CONSCIOUS PROCESSING

It is the parts of us that we don't know that cause addictions

54

OUTLINE

The focus of this presentation is 'what is an addiction' or 'why do people have addictions'? This is the most important question of all, because it directly dictates treatment. To understand addiction one needs to understand human nature, so this is where we will start.

Presentation is broken into 3 sections

1. Human Nature
2. Addictions
3. Treatment

55

WHAT ARE ADDICTIONS?

- In the beginning
 - Olds and Wise
- Then
 - Further Scientific findings
 - Opponent processes
 - Dual processes
 - Incentive-Salience
 - Issues with the scientific findings
 - What does DA do?
 - Nutt – must be more
 - Berridge – wanting
 - Wise – drive and reward paradox
 - DA and aversive responses
 - Ignores clinical findings of developmental/trauma
 - Philosophical perspectives
 - Biological/Medical model
 - Learning theory
 - Developmental/Trauma
- NPSA model to unite them all...

56

IN THE BEGINNING...

- Olds was looking for the seat of emotions in the brain “such as love, fear, pain and pleasure?”
- Olds asked “how is one to measure an animal’s feeling of pleasure?”
- Olds answered by stating that B.F. Skinner “...worked out a technique for measuring the rewarding effect of a stimulus (or the degree of satisfaction) in terms of the frequency with which an animal would perform an act which led to the reward.”

57

IN THE BEGINNING...

- Olds experiments revealed evidence of ‘rewarding’ behaviours (Skinnerian) when electrodes were stimulated, that were placed in the mid-line structures of the brain
 - Self-stimulation
 - Place preference
- 2 years later, in an article published in Science, Olds concluded that
 - “The cells which mediate primary rewarding effects are located in a midline running from the midbrain through the hypothalamus and midline thalamus and into the subcortical and cortical groups of the rhinencephalon”.
- Interestingly, he also concluded that
 - “it is reasonable to hope that eventually it will be possible to control the reward systems pharmacologically in cases where behaviour disorders seem to result from deficits or surfeits of positive motivation”.

58

IN THE BEGINNING...

“Thus, in the present paper, the terms 'reward' and 'reinforcement' will be used interchangeably and treated as synonymous. Brain stimulation, drug injections and environmental stimuli will be said to be rewarding or reinforcing if animals will learn to perform acts which are regularly followed by such stimulation, injections or stimuli. Subjective states of pleasure or euphoria will not be implied by either term.”

Roy Wise 1978

59

AND THEN...

Roy Wise reviewed the relationship between CAs and the rewarding pathways (1978)

“In the past decade and a half, thinking about reward systems in the brain has been greatly influenced by one form or another of the catecholamine (CA) hypothesis. In its simplest form, this hypothesis suggests that some 'reward neurons' contain a catecholamine as their neurotransmitter. More carefully stated, the position is that there exist one or more central neural systems which are specialized for, and which play a critical role in, reward phenomena, and that at least one critical link in the system systems is a set of CA-containing neurons.”

“The evidence suggests that there is a dopamine system in the brain that plays a critical role in the rewarding quality of brain stimulation and at least some other rewards. In this sense it can be concluded that dopamine plays a specialized role in reward processes. It is not necessarily the case that this dopamine system is specialized in the sense of having no other role in addition to this role in reward processes, and it is not necessarily the case that all rewards depend on this dopamine system for their rewarding impact. It does, however, seem to be the case that a dopaminergic system forms a critical link in the neural circuitry which confers rewarding qualities on intracranial stimulation (at least with a number of electrode placements) and on intravenous stimulant injections.”

60

IT ARRIVED...

Roy Wise - Addiction is about dopamine/reward

- “Our current working hypothesis that the rewarding effects of these drugs summate with the rewarding effects of stimulation, increasing the rewarding consequences of self-stimulation by increasing the synaptic levels of nucleus accumbens dopamine that are known to be caused by each treatment by itself”

Self-Stimulation and Drug Reward Mechanisms

Annals New York Academy of Sciences 1992 654(1)

Wise et al.

61

SCIENTIFIC NEUROBIOLOGICAL THEORIES

- Opponent processes theories
- Dual processing theories
- Incentive-salience theory

62

OPPONENT PROCESSES

- "...there must exist many systems in the brain, the business of which it is to suppress or reduce all excursions from hedonic neutrality, whether those excursions be appetitive or aversive, pleasant or unpleasant. The systems operate to decrease the intensity of subjective "hedonic quality," "affect," "emotion," "arousal," or the reinforcing properties of stimuli. The systems function independently of operants or instrumental acts: they are fully automatic. Thus, whereas operants tend to maximize positive reinforcement and to minimize negative reinforcement, these central nervous systems minimize both".
- Example
 - Dog electric-shock; terror
 - Dog cessation of shocks; stealth
 - Recurrent shocks; pained
 - Recurrent cessation; joy

63

STATES OF 'OPPONENT PROCESSES' ARE AVOIDED

"We can describe opiate, alcohol, barbiturate, amphetamine, or cigarette addiction within the empirical framework we have proposed. It has these properties: (a) the B' state lasts a long time; (b) the B' state is intensely aversive; (c) the elicitation of State A or A' is effective in causing immediate removal of State B or B'; and (d) the user employs the opiate which elicits States A or A' in order to get rid of State B or State B'.

64

CURRENT OPPONENT PROCESS THEORIES; KOOB

“Repeated withdrawal from drugs of abuse in humans in the withdrawal/negative affect stage is defined by the presence of both physical signs and motivational signs of withdrawal, such as chronic irritability, physical pain, emotional pain (i.e., hyperkatifeia...), malaise, dysphoria, alexithymia, sleep disturbances, and the loss of motivation for natural rewards. The hypothesis here is that allostatic changes in the stress axis, notably activation of the HPA axis, with subsequent blunting of the HPA axis and sensitization of extrahypothalamic CRF, are further exaggerated by repeated binge-withdrawal cycles of drug taking, such that progressively greater negative emotional states are generated that drive negative reinforcement.”

65

DUAL PROCESSING THEORIES

CORTICAL VERSUS SUB-
CORTICAL CONTROL.

66

INCENTIVE SALIENCE (BERRIDGE)

- 3 stages to reward learning
 - Like something (pleasure) – dopamine not necessary or sufficient
 - Learn that I like it – dopamine not necessary or sufficient
 - Want it – dopamine is necessary for this stage only
- Berridge states; “Dopamine drugs that activate mesolimbic systems short circuit normal physiological-learning interaction, by plugging directly into the neurobiological mechanism that ordinarily adjusts learned incentive salience in accordance with physiological states. Drugs that activate dopamine neurotransmission or induce neural sensitization may thus directly elevate ‘wanting’ for rewards...”

67

INCENTIVE SALIENCE - PROBLEM

1. According to the incentive-salience theory of reward-learning and addiction (and current scientific knowledge), dopamine is associated with ‘wanting’ or motivation for a reward, not the pleasure of the reward itself.
 2. Drugs of addiction become addictive, in part, through stimulating dopamine.
 3. However, if dopamine is triggered by addictive drugs, then according to the theory, it should not cause the ‘liking’ which is the first step of the learning/addiction process. The drug should not actually become addictive, because there is nothing pleasurable about taking it. Remember, dopamine is not seen as necessary or sufficient for the ‘liking’ or pleasure reactions, which are the first step of the addictive process.
- As Panksepp, Solms and Pantelis note;
- “Drug-induced surges in salience attribution should incentivize the addicts to pay extra attention to the *pleasure-generating* things they come across while high, not to the thing (the DA agonist) that merely induced the high. On Berridge’s own theory, the DA agonist is not intrinsically pleasure generating. The incentive-salience theory therefore erroneously treats the DA agonist as if it were itself the reward (the “liking”), which it is not”.

68

UNANSWERED SCIENTIFIC QUESTIONS ABOUT NEURAL CORRELATES OF ADDICTIONS

- Role of DA
 - Roy Wise – drive and reward
 - Kent Berridge – dopamine correlates with ‘wanting’ (drive) not ‘liking’/pleasure
- Role of other systems
 - David Nutt – it’s gotta be more than more than dopamine
 - e.g. opiate addiction
- Meso-limbic dopamine also underlies aversive responses (not just rewarding ones)
- Minimise impact of adverse childhood experiences/traumas

69

PHILOSOPHICAL PERSPECTIVES

Philosophy of Mind

How are the mind (subjective experience) and brain (objective stuff) related?

What do brain findings *mean*?



70

THE REDUCTIVE PHYSICALIST MODEL

“That addiction is tied to changes in brain structure and function is what makes it, fundamentally, a brain disease... understanding that addiction is, at its core, a consequence of fundamental changes in brain function means that a major goal of treatment must be either to reverse or to compensate for those brain changes”.

Addiction is a brain disease, and it matters

Author: Alan I. Leshner
Date: Oct. 3, 1997
From: Science (Vol. 278, Issue 5335)
Publisher: American Association for the Advancement of Science
Document Type: Cover story
Length: 2,847 words

Abstract:
 Scientific advances over the past 20 years have shown that drug addiction is a chronic, relapsing disease that results from the prolonged effects of drugs on the brain. As with many other brain diseases, addiction has embedded behavioral and social-context aspects that are important parts of the disorder itself. Therefore, the most effective treatment approaches will include biological, behavioral, and social-context components. Recognizing addiction as a chronic, relapsing brain disorder characterized by compulsive drug seeking and use can impact society's overall health and social policy strategies and help diminish the health and social costs associated with drug abuse and addiction.

Full Text:
 Dramatic advances over the past two decades in both the neurosciences and the behavioral sciences have revolutionized our understanding of drug abuse and addiction. Scientists have identified neural circuits that subsume the actions of every known drug of abuse, and they have specified common pathways that are affected by almost all such drugs. Researchers have also identified and cloned the major receptors for virtually every abusable drug, as well as the natural ligands for most of those receptors. In addition, they have elaborated many of the biochemical cascades within the cell that follow receptor activation by drugs. Research has also begun to reveal major differences between the brains of addicted and nonaddicted individuals and to indicate some common elements of addiction, regardless of the substance.

That is the good news. The bad news is the dramatic lag between these advances in science and their appreciation by the general public or their application in either practice or public policy settings. There is a wide gap between the scientific facts and public perceptions about drug abuse and addiction. For example, many, perhaps most, people see drug abuse and addiction as social problems, to be handled only with social solutions, particularly through the criminal justice system. On the other hand, science has taught that drug abuse and addiction are as much health problems as they are social problems. The consequence of this gap is a significant delay in gaining control over the drug abuse problem.

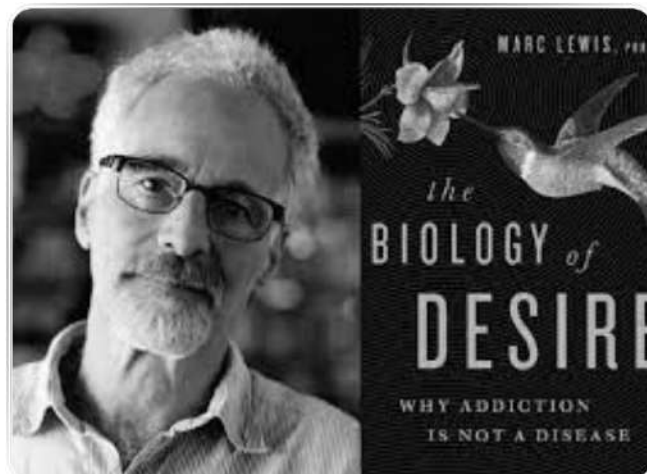
Part of the lag and resultant disconnection comes from the normal delay in transferring any scientific knowledge into practice and policy. However, there are other factors unique to the drug abuse arena that compound the problem. One major barrier is the tremendous stigma attached to being a drug user or, worse, an addict. The most benevolent public view of drug addicts is as victims of their societal situation. However, the more common view is that drug addicts are weak or bad people, unwilling to lead moral lives and to control their behavior and gratifications. To the contrary, addiction is actually a chronic, relapsing illness, characterized by compulsive drug seeking and use(1). The gulf in implications between the "bad person" view and the "chronic illness sufferer" view is tremendous. As just one example, there are many people who believe that addicted individuals do not even deserve treatment. This stigma, and the underlying moralistic tone, is a significant overlay on all decisions that relate to drug use and drug users.

Another barrier is that some of the people who work in the fields of drug abuse prevention and addiction treatment also hold ingrained ideologies that, although usually different in origin and form from the ideologies of the general public, can be just as problematic. For

71

LEARNING THEORIES

- Addictions reflect natural (non-diseased) learning processes which are associated with dopamine circuitry.
- A notable example is Marc Lewis; *The Biology of Desire*.



72

DEVELOPMENTAL PERSPECTIVES

Brain changes reflect neurodevelopmental, experientially associated alternations

Includes trauma, attachment and self-medication theories



73

MYTH BUSTERS

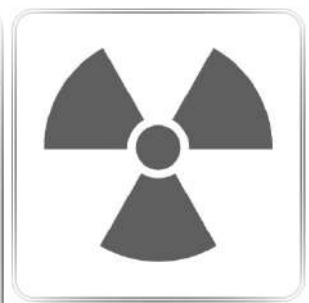
- Addictions are inherited
 - "Heritable" not "inherited" (variation versus causation)
 - "heritability estimates do not estimate the relative weight of genetic and environmental influences in a population, and are misleading and potentially harmful when presented this way"
 - Always environmental aspects



74

MYTH BUSTERS

- Addictions are about pleasure, and dopamine is the brain's pleasure molecule
- "In short, dopamine activation does not appear to cause the hedonic impact of reward. Finally, fairness requires acknowledging that Roy Wise, who chiefly originated the hedonia dopamine hypothesis, is on record, as subsequently changing his mind: "I no longer believe that the amount of pleasure felt is proportional to the amount of dopamine floating around in the brain," he said in an interview published in the journal *Science* (Wickelgren 1997, p. 35)."



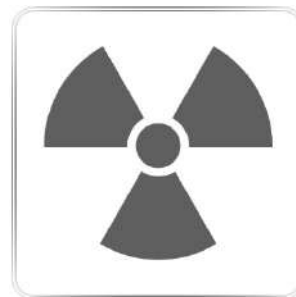
75

MYTH BUSTERS

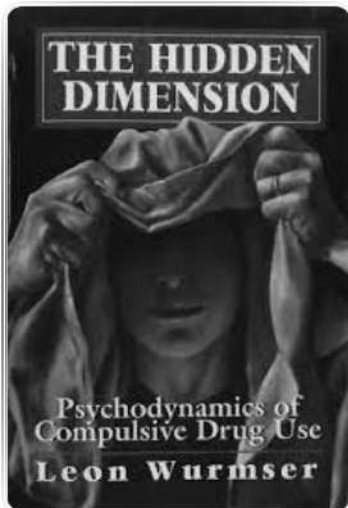
Thomas Szasz (1920 – 1970)

"...but behaviour is not a disease, it cannot be a disease, only the body can predicate disease".

Behaviours *have meaning* (in a particular context), can't be diseased



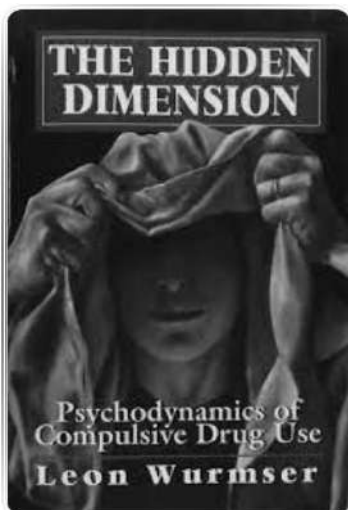
76



CAUSATION - FREUD & WURMSER

- Preconditions
 - ACEs/Traumas resulting in emotional dysregulation (overwhelm or alexithymia)

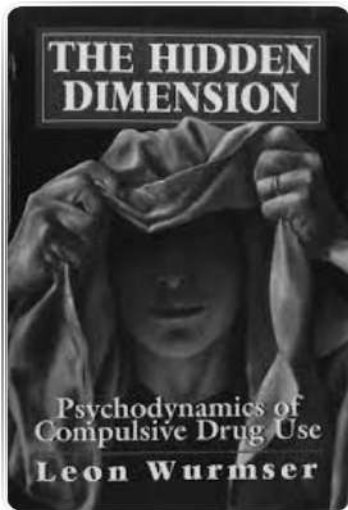
77



CAUSATION - FREUD & WURMSER

- Specific Causes
 - Emotional overwhelm
 - Too much or too little
 - Self-esteem/'Narcissistic' issues
 - Shame (hiding) & Fear (avoiding/running)

78



CAUSATION - FREUD & WURMSER

- Immediate Causes
 - Availability of drugs/behaviours

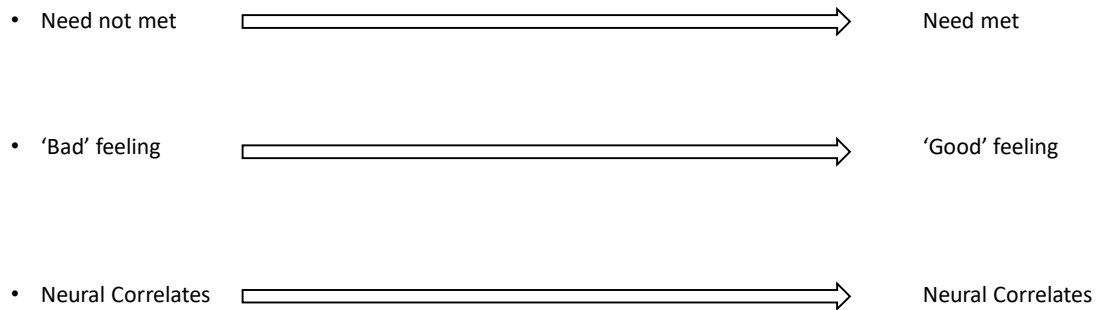
79

WHAT ARE ADDICTIONS? PSYCHOLOGY

- Using the external world to deal with something internal which can't otherwise be dealt with
- A solution to a forgotten problem (implicit 'memories')
- A (learnt) way to escape pain (Mate/Lewis)
- An escape from a part of the self
- Moving away from something (addicts) versus moving towards something (users)

80

HOW THE BRAIN-MIND WORKS HUNGRY GHOSTS



81

WHAT ARE ADDICTIONS? THE DETAILS

Affective Neuroscience (Panksepp)	Free energy (Friston)	Neuropsychanalysis
<ul style="list-style-type: none"> • What are feelings? e.g. escaping from smoke filled room, hunger, finding love. Valence/Quality/Intensity • Automatic behaviours are driven by sub-cortical emotional/survival/need circuits to maintain homeostasis, thereby decreasing painful emotions 	<ul style="list-style-type: none"> • Independent organisms have a structure (Markov Blanket) and Function (decrease free energy) • Internal working models of the world use the past to predict the present/future, based in statistical models (Bayesian) • Automatic behaviours are used to 'decrease free energy' or 'decrease surprise', which leads to repetitions (repetition-compulsion) 	<ul style="list-style-type: none"> • "Addiction... is a substitute and replacement not only for general mastery of the object world, but specifically for the attainment of a secure love-object" (Solms, Pantelis, Panksepp) • Addictive substances trigger our inherited emotional circuits, otherwise they wouldn't be addictive!

82

OUTLINE

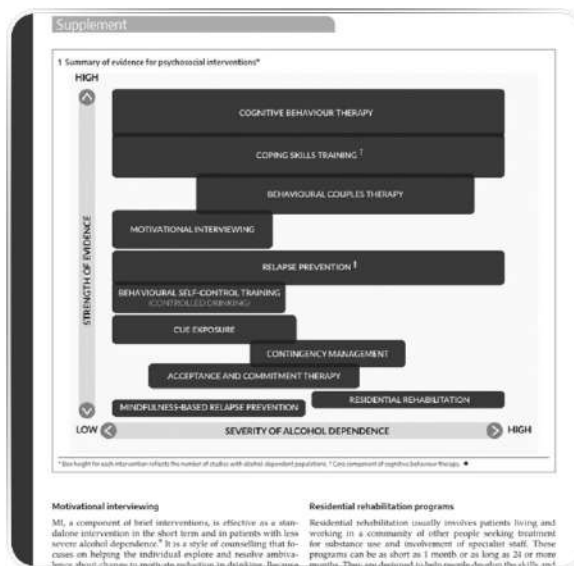
The focus of this presentation is 'what is an addiction' or 'why do people have addictions'? This is the most important question of all, because it directly dictates treatment. To understand addiction one needs to understand human nature, so this is where we will start.

Presentation is broken into 3 sections

1. Human Nature
2. Addictions
3. Treatment

83

CURRENT GUIDELINES – MJA 2021 SUPPLEMENT AUD



84

strategies (eg, setting limits for reducing risk of alcohol-related harm), are also commonly provided. This process provides an important opportunity to increase the individual's awareness of their alcohol use and enable them to explore and understand its consequences.

Goal setting

People who acknowledge that they may be drinking too much might be willing to set goals for making a change in their alcohol use. These goals need to be specific, realistic, and achievable, and a plan for how they can make changes to meet these goals should be developed. Some people may not perceive change as necessary, so MI and information about the potential consequences of continued alcohol use may help them recognise that their alcohol use is excessive. If an individual is still not receptive to making a change in their alcohol use, it may be useful to focus on how they can make a change in their alcohol-related behaviour to reduce their risk of harm (eg, drink water and eat first).

Referral to treatment

People who are still drinking to excess following a brief intervention can be referred to more intensive psychosocial treatment for alcohol use.⁷

Effectiveness of brief interventions

Brief interventions that incorporate MI are superior to no treatment for reducing alcohol consumption in adolescents, younger adults and older adults across multiple settings, but the effects are small.^{1,12} Brief MI has not consistently been found to be more effective than standard care or alternative psychosocial treatments for reducing alcohol consumption.^{6,7,13,14} For young adults, brief MI is more effective than alternative non-MI psychosocial treatments, but the effects are very small.¹⁵ It is not clear whether people with alcohol dependence are more or less likely to benefit from brief MI.^{1,12}

Brief interventions can be delivered in a variety of settings, including primary care (general practice, emergency departments, general hospital inpatient wards and outpatient clinics), higher education settings, alcohol and other drug treatment services, community counselling and welfare services, justice settings, and workplaces. However, the levels of evidence for the effectiveness of brief interventions in each setting vary, and evidence is strongest in primary care settings (see full Guidelines for the Treatment of Alcohol Problems at <https://alcohol.treatmentguidelines.com.au> for a more thorough review).¹²

Using brief MI across a variety of settings has the potential to provide large numbers of people with access to treatment for alcohol use. While the effects are small, brief MI interventions delivered at a population level could help reduce the impact of alcohol on the burden of disease and injury in Australia.

Brief e-health interventions

Despite the promise of brief in-person interventions, there are several barriers that may prevent treatment (eg, lack of time, limited access to health professionals trained in brief intervention, lack of resources, costs and stigma).^{16,17} Brief e-health interventions (internet-based interventions delivered via mobile phones

among people with alcohol use problems, and may reduce some of the stigma associated with seeking treatment.¹⁸ Overall, brief e-health interventions are effective in reducing the amount of alcohol consumed, but (similar to brief interventions) the effects are small.^{19,20} Furthermore, although e-health interventions appear to have a similar effect to brief interventions over the short term, in-person interventions may be more effective in the long term.¹⁸

Despite the promise of e-health interventions, there are limitations. The main concern is that most e-health interventions with evidence of efficacy from research are not made available to non-research populations (ie, are not made freely available or accessible on an application store following trials). In addition, tools that do not have an evidence base may be inaccurate or include (false) behaviour change techniques (which could limit their effectiveness).²¹ Therefore, it is important to select an e-health intervention with an evidence base (ie, tools assessed from websites such as www.alcohol.org.au, an Australian website that rates e-health tools) or from trusted sources (eg, Head to Health, an initiative of the Australian Government Department of Health).^{22,23}

Psychosocial interventions

Psychosocial treatments encompass a wide range of non-pharmacological approaches commonly used to treat alcohol dependence. Many derive from social learning theory and share the basic tenet that, although biological factors play a significant role, problematic patterns of drinking are a learned behaviour.^{24,25} Therefore, they can be replaced with more adaptive learned behaviour (eg, coping skills). Psychosocial interventions are effective for patients with alcohol dependence and those with more severe alcohol-related problems (eg, causing physical or mental harm to themselves or others) that cannot be effectively managed with brief interventions.²⁶

Evidence has consistently shown that people who receive psychosocial interventions benefit substantially, with clinically significant reductions in alcohol consumption and improvement in overall functioning.²⁷ Psychosocial interventions can be implemented individually or in groups, and can be used as standalone treatments or used in combination with other treatments (eg, pharmacotherapy).²⁸ They can be delivered by a range of health practitioners in a variety of settings, but most patients prefer psychiatric or addiction specialist treatment.²⁹ Specialist treatment produces better outcomes.²⁹ There is clear evidence that patients with an alcohol dependence goal tend to have better outcomes when treatment is combined with pharmacotherapy.³⁰ Decisions concerning choice of psychosocial intervention should be guided by the principles of patient-centred care, which incorporate shared decision making.³¹ Recommendations rest largely on the strength of accumulated evidence for different interventions and patient preference (Box 1).³²⁻³⁵

Cognitive behaviour therapy

Cognitive behaviour therapy (CBT) should be employed as a first-line psychosocial intervention for alcohol dependence.^{26,32,33} CBT is a structured, goal-oriented, and time-limited intervention that involves about 12 weekly sessions. The goal is to help patients feel more confident in their ability to control their drinking by developing effective coping strategies. Clinical ben-

CURRENT GUIDELINES – MJA 2021 SUPPLEMENT AUD

85

A Meta-Analysis of Cognitive-Behavioral Therapy for Alcohol or Other Drug Use Disorders: Treatment Efficacy by Contrast Condition

Molly Magill, Brian Kilick, J. Scott Tonigan, Lora Ray, Ariel Hoadley and Michael Bernstein, Kathleen Carroll

Objective: This meta-analysis examined 39 randomized controlled trials (RCTs) that tested the efficacy of cognitive-behavioral therapy (CBT) for alcohol or other drug use disorders. The only one to provide estimates of effect sizes across three levels of treatment contrast, minimal (2 = 1), moderate (2 = 2), and severe (2 = 3) for frequency and quantity outcomes at early (1 to 6 months), mid (6 to 12 months), and late (12 to 24 months) follow-up time points. When pooled effect sizes were statistically heterogeneous, study-level outcomes were examined. **Results:** The average pooled effect size was calculated for each study and pooled across studies. Results of CBT in contrast to minimal treatment showed a moderate to large effect size that was consistent across outcome type and follow-up time points. When CBT was contrasted with a moderate to large effect size, the results were statistically significant for frequency and quantity outcomes at early, but not late, follow-up. CBT effects in contrast to a severe design were statistically nonsignificant across outcomes and follow-up time points. Of 10 pooled effect sizes examined, five showed moderate heterogeneity, but meta-analysis revealed low systematic evidence of between study variation. **Conclusions:** The current meta-analysis shows that CBT is more effective than no treatment, minimal treatment, or moderate treatment. Consistent with findings in other randomized trials, CBT did not show superior efficacy in contrast to another specific condition.

What is the public health significance of this article?

This meta-analysis provides a comprehensive summary of treatment efficacy in cognitive-behavioral therapy (CBT) for alcohol or other drug use disorders. CBT is effective for these conditions with moderate to large effect sizes. These findings suggest that CBT is a promising treatment for these conditions.

Keywords: alcohol treatment, cognitive behavioral, drug treatment, meta-analysis, relapse prevention

Supplemental materials: <https://doi.org/10.1037/0022-006X.131.1.001>

- In contrast to minimal treatment
e.g. waitlist, assessment only
- In contrast to nonspecific therapy
e.g. supportive therapy
- In contrast to a specific therapy
e.g. MI, contingency management

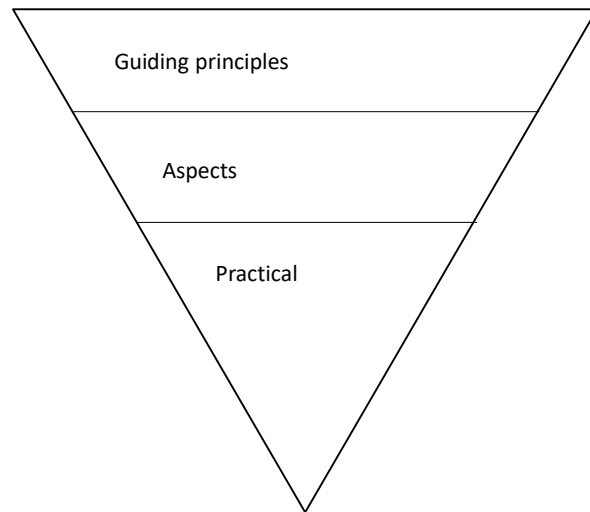
“Converting effect estimates to a percentile success rate the data show 15% to 26% of CBT participants had better outcomes than the median of those in minimal treatment conditions.”

“The pooled effect size for frequency outcomes at early follow-up was small and statistically significant with a success rate roughly 8% higher than the median within the contrast condition. However, the effect was nonsignificant at late follow-up”

“The pooled effect size for frequency outcomes was nonsignificant at early and late follow-ups.”

86

TREATMENT OF ADDICTION



87



GUIDING PRINCIPLES

Healing = integration = connecting head
and heart = understanding oneself

Personalised versus Generic

Transdiagnostic

88

GUIDING PRINCIPLES - INTEGRATION

- To turn around and face oneself, rather than avoiding aspects of the self
- “Since coming off the sertraline I’ve become a lot more emotional and teary”
- Me: “I wonder if you can also experience positive emotions more intensely?”
- “Well last week when I was driving to the airport I was crying with excitement”
- This is confronting, anxiety provoking, painful (for both patient and therapist)
- Our system of diagnosis and treatment in many ways is set up for the opposite of integration
 - e.g. 5HT1A versus 5HT2A receptors

89

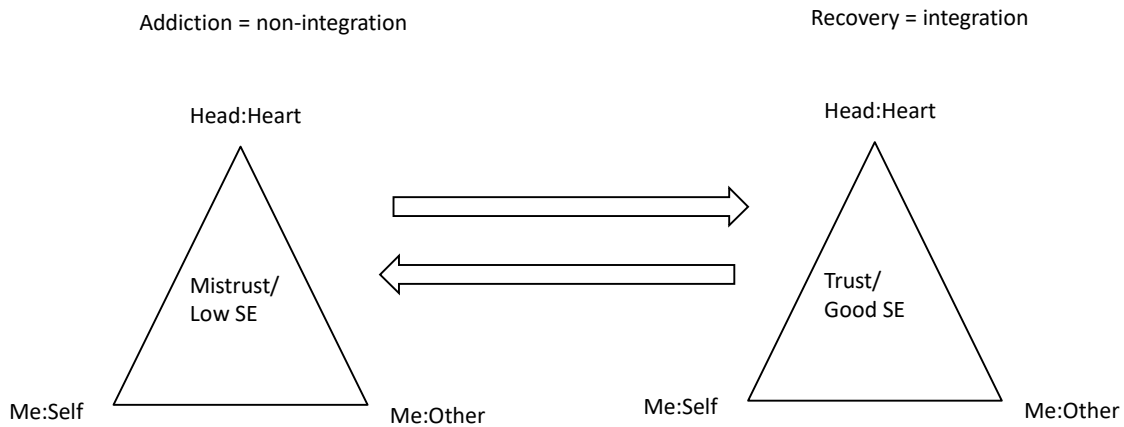
INTEGRATION IN HOSPITAL SETTING

- No sleeping tablets
- Minimise medications
- No PRN/‘as required’ medications
- Lots of psychoeducation
- Creation of a safe container (lots of work!)



90

GUIDING PRINCIPLES MAP OF RECOVERY (DISCOVERY)/INTEGRATION

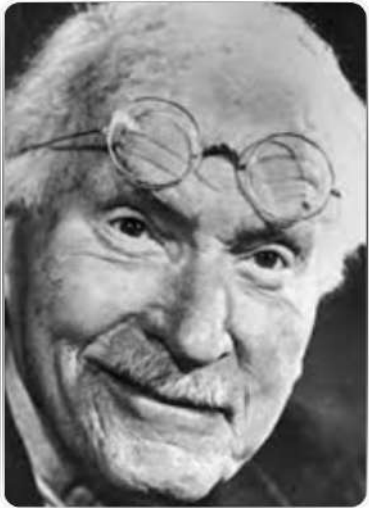


91

PROCESS OF INTEGRATION JOIN HEAD AND HEART SELF-AWARENESS

- Awareness
 - Thoughts, images, feelings, body
- Acceptance
 - The 'shadow' – thoughts/images
 - Feelings
- Ownership
 - Not "your fault" or "my fault"
 - Triggers as rationalisations
 - Trigger versus cause
- Understanding
 - Emotions are key
 - Need an emotional awareness to understand the triggers of patterns
 - Need an 'emotional understanding' of self

92



GUIDING PRINCIPLES - PERSONALISED

“Judged scientifically, the individual is nothing but a unit which repeats itself *ad infinitum* and could just as well be designated with a letter of the alphabet. For understanding, on the other hand, it is just the unique individual human being who, when stripped of all those conformities and regularities so dear to the heart of the scientist, is the supreme and only real object of investigation. The doctor, above all, should be aware of this contradiction. On the one hand, he is equipped with the statistical truths of his scientific training, and on the other, he is faced with the task of treating a sick person who, especially in the case of psychic suffering, requires *individual understanding*. The more schematic the treatment is, the more resistances it – quite rightly – calls up in the patient, and the more the cure is jeopardized. The psychotherapist sees himself compelled, willy-nilly, to regard the individuality of a patient as an essential fact in the picture and to arrange his methods of treatment accordingly.”

93

GUIDING PRINCIPLES - TRANSDIAGNOSTIC

- Trend to become super-specialized in mental health and addiction treatment
- Suggests that diagnostic categories are valid categories, rather than reliable categories that may represent underlying issues
- Different addictions may require alterations in the treatment of the specific addiction, however the same applies for;
 - Trauma/ACEs/OEEs
 - Personality vulnerabilities/patterns

94

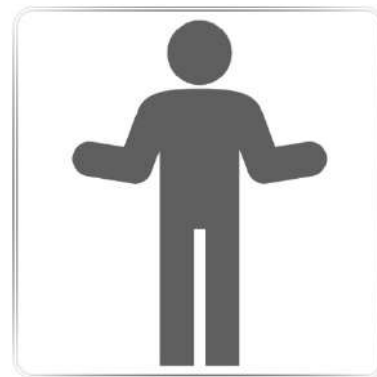
ASPECTS

- Addiction
- Trauma/ACEs/OEEs
- Personality Vulnerabilities/Patterns

95

PRACTICAL POINTS

- Assume there is unresolved emotional pain
- Assume the person is unaware (to some degree) of the emotional pain
- Assume there will be resistance from the person's mind-brain-body to find the emotional pain
- The unresolved emotional pain will create unhealthy patterns, only one of which is the presenting complaint of the addiction
- Two pieces of information
 - Historical
 - The here-and-now/transference-countertransference/relationship between me and the person



96

RELATIONSHIP TO THE PATIENT

“...the first prerequisite for successful psychotherapy is the respect that the psychiatrist must extend to the mental patient. Such respect can be valid only if the psychiatrist realizes that his patient’s difficulties in living are not too different from his own. This statement is not just a humanitarian or charitable hypothesis but a scientific conviction.”

Frieda Fromm-Reichman, Principles of Intensive Psychotherapy

“As adults we don’t need unconditional love, not even from our therapists. This is a childhood need, one that can never be fulfilled later in life, and we are playing with an illusion if we have never mourned this lost opportunity. But there are other things we can get from good therapists: reliability, honesty, respect, trust, empathy, understanding, and an ability to clarify their emotions so that they need not bother us with them. If a therapist promises unconditional love, we must protect ourselves from him, from his hypocrisy and lack of awareness”.

Alice Miller, The Drama of the Gifted Child

97

RESISTANCE IN THERAPY

“One other type of security operation which plays a great role in the patients’ dealings with psychotherapy and psychiatrists is the dynamic process known as ‘Resistance’. ‘Resistance’ means the reactivation, outside of the patients’ awareness, of the motivating powers which were responsible for the mental patient’s original pathogenic dissociative and repressive processes. This resistance manifests itself in the course of the psychotherapeutic process as a reluctance against relevant communication and against the acceptance of interpretive clarifications or its possible concomitant therapeutic changes. The same source which motivated the patient’s original dissociative and repressive processes, that is, his anxiety, is also the main reason for this resistance...Resistance is as much a process outside the patient’s awareness as the original dissociating processes are. It is up to the psychiatrist to be constantly alert to its recognition as it arises. The interpretation of processes of resistance should constantly be included in the psychiatrists’ and the patient’s collaborative efforts...”

- Frieda Fromm-Reichmann, Principles of Intensive Psychotherapy

98

INITIAL ASSESSMENT - AIMS

- Find the emotional pain
- Help change the person's understanding of themselves
 - Help them see they are deeper and more complicated than they think they are
- Help change the person's understanding of their addiction
 - From a pattern of behaviour
 - To a method to deal with emotional pain
 - As a solution to an underlying problem

99

ONGOING THERAPY CONNECT PERSONALITY/BEHAVIOUR TO PAST EXPERIENCE

- In many respects, people don't relapse because they have an addiction, they relapse because of unhealthy patterns which inevitably draw them back to an emotionally overwhelming place. These compulsive patterns are learnt (old), compulsive because they are driven by emotional complexes.
- "...a child can experience her feelings only when there is somebody there who accepts her fully, understands her, and supports her. If that person is missing, if the child must risk losing the mother's love or the love of her substitute in order to feel, then she will repress her emotions... she will fail to experience them at all. But they will nevertheless stay in her body, in her cells, stored up as information that can be triggered by a later event. Throughout their later life, these people will have to deal with situations in which these rudimentary feelings may awaken, but without the original connection ever becoming clear. The connection can be deciphered only when the intense emotions have been experienced in therapy and successfully linked with their original situation".
- These emotionally driven behaviour patterns will be hidden behind a thought (the rationalization), usually justified by self-righteousness or self-loathing.

100

ONGOING THERAPY CONNECT PERSONALITY/BEHAVIOUR TO PAST EXPERIENCE

- A COEX system can be defined as a specific constellation of memories consisting of condensed experiences (and related fantasies) from different life periods of the individual. The memories belonging to a particular COEX system have a similar basic theme or contain similar elements and are associated with a strong emotional charge of the same quality. The deepest layers of this system are represented by vivid and colorful memories of experiences from infancy and early childhood... Each COEX system has a basic theme that permeates all its layers and represents their common denominator... The excessive emotional charge which is attached to COEX systems (as indicated by the often powerful abreaction accompanying the unfolding of these systems in LSD sessions) seems to be a summation of the emotions belonging to all the constituent memories of a particular kind”.

101

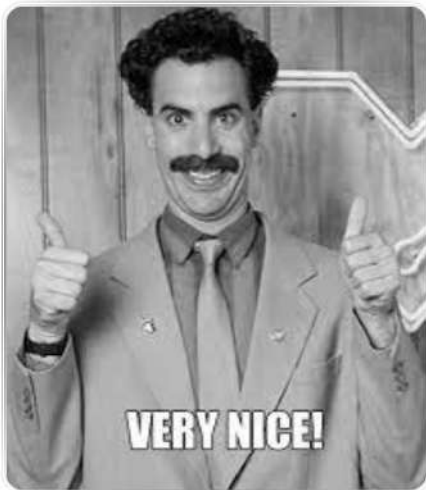
ONGOING THERAPY CONNECT PERSONALITY/BEHAVIOUR TO PAST EXPERIENCE

- Very useful time to work with someone is when they are triggered
- Enter the feeling/understand the feeling ('shadow' work)
- Identify the thought and behavioural patterns.
- Help the person understand the patterns
 - ? Early attachment pattern
 - ? A protective mechanism/defensive
- Watch out for dissociation

102

CASE STUDIES...

103



THANKS!

DRELIKOTLER@GMAIL.COM

104



Visit: <https://delphicentre.com.au/>



ABN: 62 406 997 428

