Using contextual behaviour science to consider growth and development in humans.

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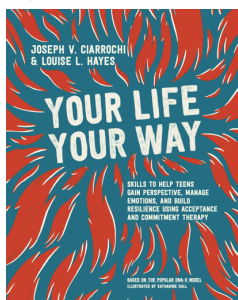
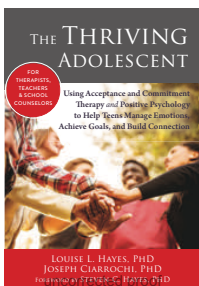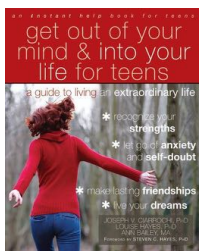# Disclosures

Royalties via New Harbinger book sales

Royalties via Praxis for online teaching and training

Financial benefit from training and teaching CBS approaches

Acknowledgement

A unified approach to development

www.thrivingadolescent.com

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Overview

A paradigm for psychology — basic and applied scientific methods to predict and change the behaviour of humans with precision, scope and depth (S. C. Hayes, 2016)

An explicitly contextual example

Finally showing the work as applied to young people and development

assumptions
&
theory

process
&
procedure

Assumptions are pre-analytic world views

 vs

like mac vs PC,
there is no argument to win

Philosophical Assumptions

Pepper's (1942) four world views

Formism

Organicism

Mechanism

uncorrected proof

Contextualism

Context slide: J and M Villatte (2013)

Syndromes

Philosophical Assumptions

Pepper's (1942) four world views

Formism

Root metaphor of recognisable forms, with **truth based on correspondence to the form**

If the system has a category for all kinds of things, and things for all categories, then the system is deemed to be true

In psychology, personality theories as descriptive of the truth of ones' personality

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hundreds of categories..

The challenge we have set for practitioners

Using evidence base to inform decisions

ask key questions about individual or group

acquire the best available evidence for them

critically appraise the evidence for validity and applicability

apply evidence in collaborative way - considering context, values, preferences, resources, and expertise of professional

disseminate and assess the outcome

(source K. Koerner, 2018)

3. Using evidence base to inform decisions

In 2017 alone:

220,000 psychology peer reviewed articles *

10,200 peer reviewed articles published in journals with "clinical psychology" in the journal title *

352 meta-analyses with "clinical psychology" in the journal title*

Read one meta-analysis a day :)

*based on Uni Melb catalogue search across data bases

DSM Syndrome or diagnosis does not predict treatment outcome. S. Hofmann

We lost our way trying to predict with a latent disease model

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What matters to treatment outcome

Not —DSM Syndrome or diagnosis

But - Clinicians do need to know
the processes and procedures that move to enhance wellbeing
and
the moderators that direct them to use X or Y process

To do this we need
- Assumptions and theory
linked to
Process and procedures
Tested with moderators and mediators

Philosophical Assumptions
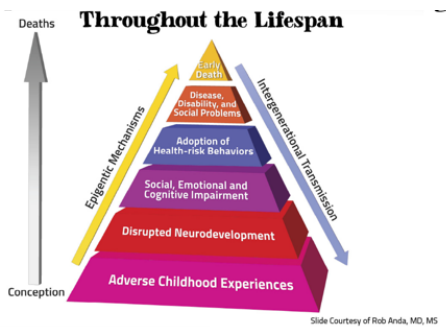
Pepper's (1942) four Worldviews

Organicism

Root metaphor of a growing organism - in an expected pattern of growth

There are rules of growth, and **truth is the coherence with the rules**

The whole cannot be understood by looking at the parts; the parts only have meaning with regard to the whole.

In humans, growth stages as seen in developmental psychology. Toddlers before preschoolers is presumed to reflect the organisation of development

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Extensive research on developmental stages and prediction
e.g. Adverse Childhood Experiences Influence Health and Wellbeing

Slide Courtesy of Rob Anda, MD, MS

Philosophical Assumptions

Pepper's (1942) four Worldviews

uncorrected proof

Mechanism

Root metaphor of the machine (does not mean robot like) assumes *a priori* that parts comprise a whole - i.e $A \rightarrow B \rightarrow C$

Correspondence based truth - if research supports that $A \rightarrow B$ then the theory is correct

Mental processes operate under a strict set of conditions, and these are separate from, but can covary with, the environmental context

In psychology — mental processes, mediated between the environment and behaviour. e.g. cognitive therapy and schema therapy

CBT Trans Diagnostic

3rd wave saw unified mechanistic protocols, example:

Barlow's UP - core processes from the CBT tradition

Tests underway of trans-diagnostic C&A therapy (Weisz et al)

Philosophical Assumptions

J and M Villatte (2013)

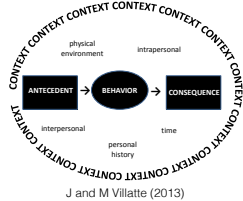Pepper's (1942) four Worldviews

Contextualism

Root metaphor is the act-in-context, notably an act can only be done in and with a context

Contexts can extend out to all of the universe, or backward through time and forward to the future. The act is always *now*.

There is no *real world* instead there are levels of analysis that can predict and influence behaviour of individuals and groups. **Truth is what works for prediction and influence**
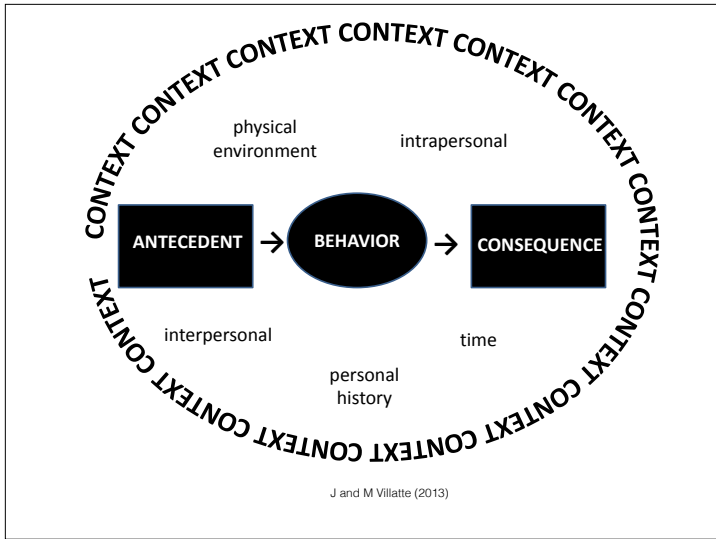
In psychology - humanistic traditions, behavioural activation, therapies based on functional assessment (ACT, FAP, DBT, Integrative couples therapy)

Context

Someone who is no longer around still influences you today?

CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT CONTEXT

physical environment | intrapersonal

ANTECEDENT → BEHAVIOR → CONSEQUENCE

interpersonal | time | personal history

J and M Villatte (2013)

Contextual Approaches

3rd wave saw contextual unified protocols, for example:

ACT - 6 core processes

DNA-v for young people

CFT - 3 affect regulation systems

DBT

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and we found ourselves here:

ACT — "THIS IS THE WAY TO DO IT!" "NO, THIS IS HOW TO DO IT!" — CBT

Trans-diagnostic is also too narrow.

Stefan G. Hofmann

What matters to treatment outcome

Not —DSM Syndrome or diagnosis

But - Clinicians do need to know
the processes and procedures that move to enhance wellbeing
and
the moderators that direct them to use X or Y process
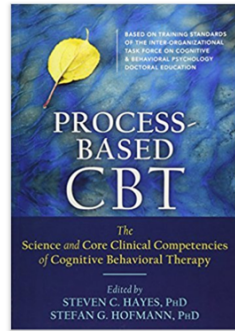
To do this we need
- Assumptions and theory
linked to
Process and procedures
Tested with moderators and mediators

Processes

Hayes & Hofmann -
CBT proceses

Processes

Hayes & Hofmann (2018) CBT proceses

Processes with good evidence

Contingent behaviour	Modifying core beliefs
Stimulus control	Cognitive reappraisal
Shaping	Cognitive defusion
Emotion regulation	Acceptance
Problem solving	Values
Exposure	Mindfulness
Behavioural activation	Motivation

Processes

Be informed by multidimensionality of humanity and suffering

Cognition, emotion, physical health, social connection, biological, neuroscience, genetics, evolution.

Let the data decide (S. C. Hayes)

Does the process mediate the desired outcomes?

What are the moderating factors?

Procedures

The techniques or methods that a therapist utilises to achieve the treatment goals

And the defined and measurable outcomes that the therapist and client have agreed upon.

Usually, there are multiple goals, which can often be arranged in a hierarchy depending on priority, immediacy, difficulty, or related dimensions.

Procedures

Values (one process used as an example)

sweet spot

card sort

Valued living questionnaire

Bulls eye

drawing now and the future

life compass

What does all this mean for development?…

Packages are too slow

Because there are over 300 RCTs using ACT

but only a fraction are with young people.

Waiting for packages hasn't worked.

https://contextualscience.org/state_of_the_act_evidence

RCTs

Only about few with young people and children

Swain, J., Hancock, K., Dixon, A., & Bowman, J. (2015). Acceptance and Commitment Therapy for children: A systematic review of intervention studies. *Journal of Contextual Behavioral Science*, *4*(2), 73–85.A metanalysis involving 707 participants and 21 studies suggests that ACT results in improvements in symptoms, quality of life, and psychological flexibility

Hancock, K. M., Swain, J., Hainsworth, C. J., Dixon, A. L., Koo, S., & Munro, K. (2018). Acceptance and Commitment Therapy versus Cognitive Behavior Therapy for Children With Anxiety: Outcomes of a Randomized Controlled Trial. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 47(2), 296–311.

Hayes, L., Boyd, C. P. (2), & Sewell, J. (2011). Acceptance and commitment therapy for the treatment of adolescent depression: A pilot study in a psychiatric outpatient setting. Mindfulness, 2 (2), 86–94.

Hainsworth, Dixon, Koo, and Munro (2018) conducted a well-powered RCT (n= 193 children) and showed that both ACT and CBT produced equivalent benefits in the treatment of anxiety

Livheim, F., Hayes, L., Ghaderi, A., & Magnusdottir, T. (2015). The effectiveness of acceptance and commitment therapy for adolescent mental health: Swedish and Australian pilot outcomes. Journal of Child and. Retrieved from https://link.springer.com/article/10.1007/s10826-014-9912-9

Faulkner, O'Dell, and Golden (2018) provided some preliminary evidence for the efficacy of the DNA-v variant of ACT and positive psychology

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But we have enough evidence to do this:

assumptions **-** theories **-** processes **-** procedures

And apply it to development….

A contextual approach

based on selection by consequences
(evolution, biological, behavioural (overt and verbal),

considered contextually

and using empirically established processes
and procedures
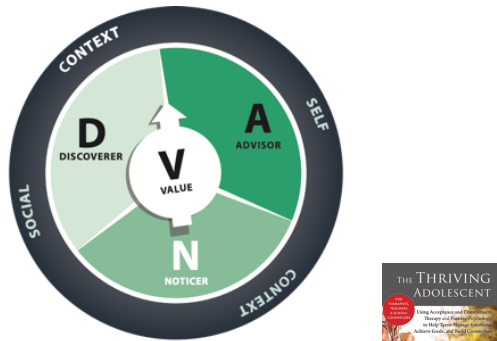
DNA-v (Hayes & Ciarrochi, 2015)

Functional contextualism **assumptions**

↓

Evolution science - adaptation occurs at 6 levels

theory

↓

Selection by consequences

theory

Biological threat/safety   Attachment theory   Operant principles   Relational frame theory

↓

Processes with empirical evidence

process

ACT 6 core processes   Behaviour management & parenting   Emotion coaching   Positive strategies/Self determination

↓

DNA-V for children and adolescents

procedure

DNA-v

- 4 classes of behaviour
  - We can influence through intervention

  And: --

- 2 perspectives
  - That show the way the <u>whole</u> interacts with
    - social
    - self
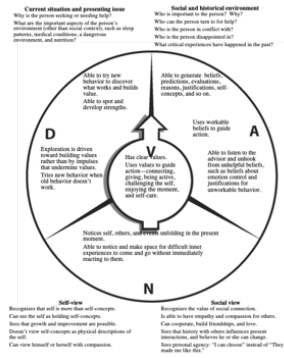
image available from www.thrivingadolescent.com

First, I am a noticer

Polyvagal theory (Porges, 2011)

- Porges Polyvagal theory built on Darwin's observations of the nervous system.

  - Polyvagal refers to the evolution of the branches of the vagus system

  - Considered ground breaking, is a sophisticated understanding of biological safety and danger detection in mammals

  - Neuroception, focuses on the detection of safety or danger between from the environment and the people around us

The Quest for Safety:
Emergent Properties of Physiological State

Environment
outside the body
inside the body

Nervous System
Neuroception

Safety Danger Life threat

Spontaneously engages others
eye contact, facial expression, prosody
supports visceral homeostasis

Defensive strategies
death feigning/shutdown (immobilization)

Defensive strategies
fight/flight behaviors (mobilization)

Copyright © 2012 Stephen W. Porges

Noticer

A label - the behaviour of
being aware of signals
inside and outside.

Learning to either react,
or respond with
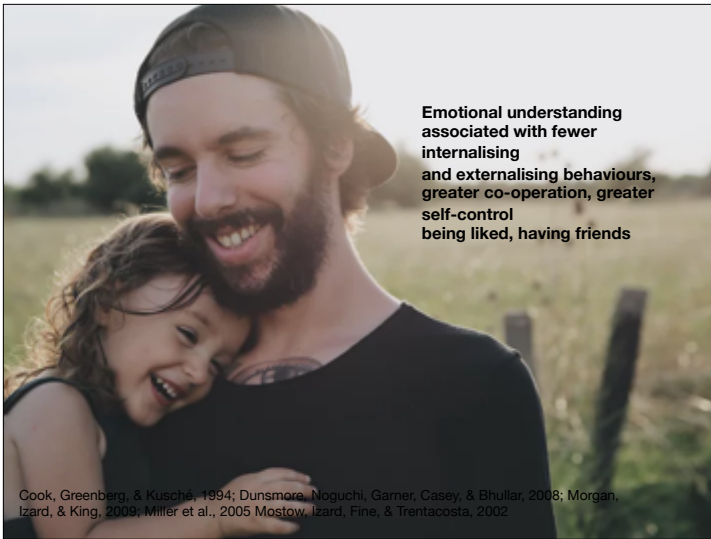awareness

THE NOTICER

Image from Your Life Your Way (2020) Ciarrochi & L. Hayes

Processes that shape
flexible noticing

Biological awareness of safety and danger (informed by
evolution, biological sciences and attachment theory)

Contingent behaviour, shaping, exposure

Emotional regulation, acceptance, and mindfulness

**Emotional understanding associated with fewer internalising
and externalising behaviours, greater co-operation, greater self-control
being liked, having friends**

Cook, Greenberg, & Kusché, 1994; Dunsmore, Noguchi, Garner, Casey, & Bhullar, 2008; Morgan, Izard, & King, 2009; Miller et al., 2005 Mostow, Izard, Fine, & Trentacosta, 2002

Procedures to grow skilled noticers

Normalise and bring into awareness

Attend and label

Allow or react with awareness: learning to pause, and use non-judgmental awareness

*For young person and their social context

Young people see with new eyes

Noticer - Mediation studies:

- In college students, web intervention ACT v waitlist - mindful acceptance mediated treatment outcomes (Levin et al 2017)

- In young adults, willingness to experience negative thoughts or emotions while still engaging in valued behaviours significantly mediated eating disorder measures (Juarascio et al 2013)

- In anxious adolescents, ACT v CBT - findings best explained via the specific indirect effects of acceptance and defusion. (Swain et al 2015)

- In adults, psychological flexibility and mindfulness are distinct processes that mediate outcomes in web based study (Pots et al 2016)

I discover through trial and error

Play is across species so must have some evolutionary adaptive purpose
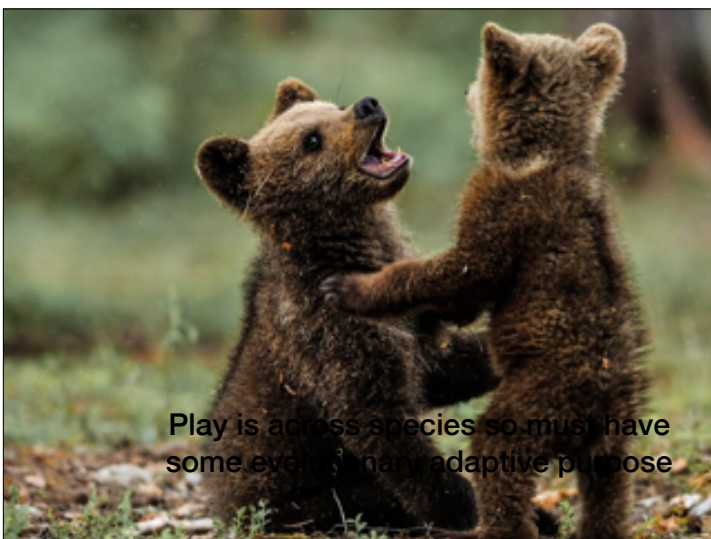
Play in anthropological studies on hunter-gatherer children

play at hunting and gathering, caring for infants, swinging from trees, acrobatics, building vine ladders, building huts, using knives and tools, making tools, carrying heavy loads, building rafts, making fires, pretending to defend against predators, imitating animals, making music, climbing trees, learning to dance, storytelling, arguing, playfighting, making musical instruments, creating jewellery, artwork, chasing, imitating adults.

(Gray, 2013)

Discoverer

A label to describe trial and error behaviours

Flexibility grows from testing new behaviours, in order to expand repertoires of behaviour that support growth

Image from Your Life Your Way (2020) Ciarrochi & L. Hayes

And across the species in adolescence adaption is novelty and risk

Human adolescence seen across 187 countries - risk taking, love of novelty, sensation seeking, and changes in peer and family relationship - (Schlegel & Barry, 1991)

Animal adolescence - risk taking, love of novelty, sensation seeking, and changes in peer and family relationship (Spear, 2004, Laviola, Macrì, Morley-Fletcher, & Walter, 2003)

Average Situation Attribution Score

Fig. 4. Average attribution scores by age group and condition with SEs. YO, year old.

Adolescents show the largest gap between baseline and new situations, supporting the notion that they are particularly open to new possibilities (Gopnik, 2017)

"ADULTS KEEP SAYING, 'WE OWE IT TO THE YOUNG PEOPLE TO GIVE THEM HOPE'. BUT I DON'T WANT YOUR HOPE. I DON'T WANT YOU TO BE HOPEFUL. I WANT YOU TO PANIC. I WANT YOU TO FEEL THE FEAR I FEEL EVERYDAY. AND THEN I WANT YOU TO ACT... I WANT YOU TO ACT AS IF YOUR HOUSE IS ON FIRE. BECAUSE IT IS."
- GRETA THUNBERG

and embrace adaptive risk

Processes used in discoverer

Functional assessment,

Contingent behaviour and shaping, behavioural activation

Positive psych for broadening and building

Self determination for motivations

Procedures to build discovery

Tracking consequences explicitly with young person (similar to workability & creative hopelessness in adult ACT)

Building behavioural strengths

Goal setting

Frameworks for new and untested behaviour aimed at building broader repertoires of behaviour

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Discoverer - Mediation studies

In adolescent males, self-determination based intervention that enhanced autonomous motivation mediated less screen-time (Smith et al 2016)

In adolescents, autonomous motivation mediated health related quality of life change in overweight adolescents (Straker et al 2016)

In adolescents, although limited, self-efficacy and intention appear to be relevant mediators for physical activity interventions (Stralen et al 2011)

In adolescents, behavioral activation, including both measures of activation and positive reinforcement, mediated the relation between activity and depression (Takagaki et al 2016)

Our verbal behaviour that **saves us from trial and error** by using beliefs, rules, judgements, evaluations, problem solving and predictions

Flexibility is verbal awareness, trying new rules, distancing etc

Adaptive purpose of language

Initially selected for because of the advantages it provides ("There is a lion in the grass")

Transformation of function via language is the highest form of variation (Monestès, 2016; D. S. Wilson, 2016).

It can be quickly overgeneralised, leading to cognitive inflexibility

Psychopathology has it's roots in narrow, rigid cognitions and actions

Advisor

A label to describe the behaviour of navigating our context with language
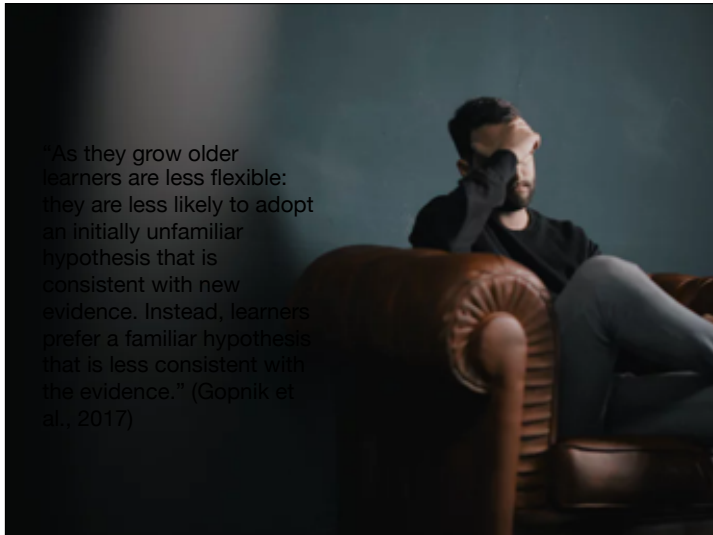
THE ADVISOR

Image from Your Life Your Way (2020) Ciarrochi & L. Hayes

Flexility may be key in adolescence

"Innovation is primed as a sweet spot in adolescence cognitive and physical abilities are sufficiently mature but before the full onset of the concerns and costs associated with reproduction." Riede et al, 2018

With age comes a greater reliance on language, that is fixed and governed by past learning (Gopnik et al., 2017)

"As they grow older learners are less flexible: they are less likely to adopt an initially unfamiliar hypothesis that is consistent with new evidence. Instead, learners prefer a familiar hypothesis that is less consistent with the evidence." (Gopnik et al., 2017)

Process used to support a flexible advisor

Processes -
    RFT for how language is shaped - relational frames
    Awareness
    Coherence seeking
    Cognitive defusion
    Cognitive reappraisal
    Modifying core beliefs
    Problem solving skill

Two fish in a tank,
one says to the other "Its a bit wet in here",
the other says, "Blimey, a talking fish!"

www.PerrysAquaticsCentreLincoln.com

Procedures to grow with a flexible Advisor

Procedures

Seeing thoughts instead of being inside them

Create flexible rules and test them

Practice changing rules looking at function (i.e. both positive or negative statements can be useful)

Test out helpfulness of rule based on their value connection (Coherence to rules, and cognitive reappraisal)

Normalise function - advisor's 'watching out'

Experiential exercises to defuse if stuck - step out of advisor to N or D (defusion)

Problem solving steps

"You are never to small to make a difference."
Greta Thunberg

Making new rules

A foundation for Curriculum development
UK initiative - Connect PSHE

Our Approach

https://www.connect-pshe.org/

DISCOVERER

The Discoverer skill is about learning to explore the environment in a fun and open way.

Key Stage 1

NOTICER

The Noticer skill is about contacting and labeling experiences in the present moment.

Key Stage 1

ADVISOR

The Advisor skill is about weighing up the reasons for and against pursuing a particular course of action.

Key Stage 1

VALUES

The Values skill is about identifying the qualities we want to reflect in our behaviour.

Key Stage 1

SELF & SOCIAL

Our four core DNA-V skills tend to be impacted by thoughts about ourselves and others. Hence the curriculum teaches students to adopt a more flexible view of these concepts.

Key Stage 1

DISCOVERER

The Discoverer skill is about learning to explore the environment in a fun and open way.

Key Stage 2

NOTICER

The Noticer skill is about contacting and labeling experiences in the present moment.

Key Stage 2

ADVISOR

The Advisor skill is about weighing up the reasons for and against pursuing a particular course of action.

Key Stage 2

VALUES

The Values skill is about identifying the qualities we want to reflect in our behaviour.

Key Stage 2

SELF & SOCIAL

Our four core DNA-V skills tend to be impacted by thoughts about ourselves and others. Hence the curriculum teaches students to adopt a more flexible view of these concepts.

Key Stage 2

DNA-V is used with the permission of Dr Louise Hayes and Dr Joesph Ciarocchi, who created the video below to illustrate the core

Advisor - Mediation studies (mostly adult):

In adolescents with anxiety, ACT v CBT - findings best explained via the specific indirect effects defusion (Swain et al 2015)

In adults, decreased defusion was mechanism in the efficacy of ACT in those with depression and mental health problems (Bramwell & Richardson 2018)

In adults, ACT and CBT - Multilevel mediation analyses revealed significant changes in the proposed mediators during both treatments ($p < .001$, $d = .90$–1.93), with ACT showing borderline greater improvements than CBT in cognitive defusion ($p = .05$, $d = .82$) (Arch et al 2012)

In adults, with psychosis, believability mediated reduction of rehospitalization not symptom-related distress (Bach et al 2013)

Vitality & Value

The behaviour of creating our own contexts that are explicitly linked to vitality and value-consistent actions

"*What you do makes a difference, and you have to decide what kind of difference you want to make.*"

- *Jane Goodall* -

Process used to build vitality and value

Modification of behavioural repertoire via repetition and linking to verbal self rules

Plus a between-individual component that corresponds to social learning and cultural transmission

(Hayes & Hoffman, 2018)

Vitality & Value Procedures

6 ways to wellbeing (Basarkod, Ciarrochi & Sahdra. *In press*),

Create settings where value and vitality are overtly shaped

    In session
    In class rooms
    In families

Construct it with language by

    Drawing, playing, speaking etc

Valuer

Mediation studies:

College students web intervention ACT v waitlist - obstruction to valued living mediated treatment outcomes (Levin et al 2017)

Increased values-based action is an important mechanism in the efficacy of ACT in those with depression and mental health problems (Bramwell & Richardson, 2018)

Psychological flexibility mediated change in weight loss through enhanced ability to continue with valued activities even when confronted with negative emotions and thoughts related to weight (Sairanen et al 2017)

In adolescents, longitudinal evidence for the benefits of value clarification and affirmation for health, education, and relationships (Cohen and Sherman, 2014)

In adolescents, longitudinally writing about important values improves grades and reduces the racial achievement gap (Cohen et al., 2006; Sherman et al., 2013)

Our adaptation is a transaction across our life history

Based on the costs and benefits of selecting behaviour

Nurturing environments reinforce greater variability

Neglectful environment reinforce rigidity

Evos in context

The self
is
language

Self view - how we use
D, N, A and V in the context of our history

IP1625 Reboot West - Bristol

Reboot West Project
Successful Outcomes

1625 INDEPENDENT PEOPLE

200 YOUNG PEOPLE LEAVING CARE ARE WORKING WITH REBOOT WEST

55 YOUNG PEOPLE IN EMPLOYMENT

74 HAVE STARTED FORMAL EDUCATION OR TRAINING

116% OF TARGET OUTCOMES ACHIEVED

46 YOUNG PEOPLE ACHIEVED THEIR PERSONAL OBJECTIVES

Social context

Social-view
How our D, N, A
and V are shaped
by our social
context

Process shown to support flexiblity

Promoting and reinforcing prosocial behavior

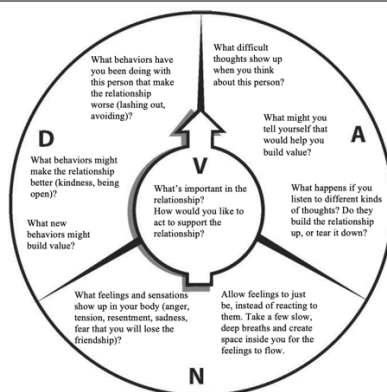Minimizing socially and biologically toxic conditions

Monitoring and setting limits on influences and opportunities to engage in problem behavior

Promoting the mindful, flexible, and pragmatic pursuit of prosocial values

Biglan (2015)

D
What behaviors have you been doing with this person that make the relationship worse (lashing out, avoiding)?

What behaviors might make the relationship better (kindness, being open)?

What new behaviors might build value?

V
What's important in the relationship? How would you like to act to support the relationship?

What difficult thoughts show up when you think about this person?

A
What might you tell yourself that would help you build value?

What happens if you listen to different kinds of thoughts? Do they build the relationship up, or tear it down?

N
What feelings and sensations show up in your body (anger, tension, resentment, sadness, fear that you will lose the friendship)?

Allow feelings to just be, instead of reacting to them. Take a few slow, deep breaths and create space inside you for the feelings to flow.

Procedures for relationships — parenting

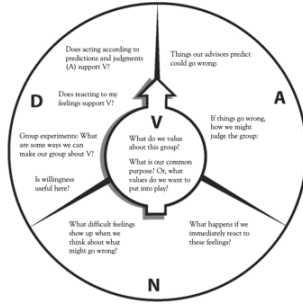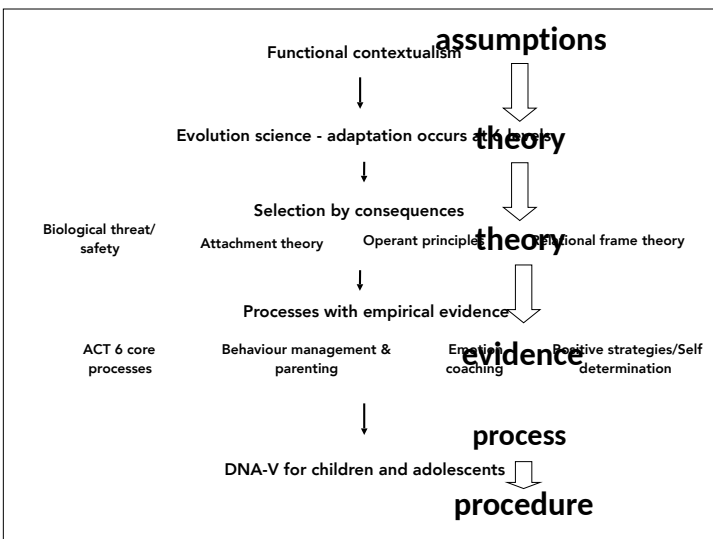**Procedures for social groups – community, classroom (incorporating Ostrom's CDP)**

FIGURE 21. The DNA-V disk for groups.

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clearly articulated

-Assumptions
-Theory
-Process &
-Procedure

- take us..

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assumptions

Functional contextualism

theory

Evolution science - adaptation occurs at levels

Selection by consequences

Biological threat/ safety   Attachment theory   Operant principles   Relational frame theory

theory

Processes with empirical evidence

ACT 6 core processes   Behaviour management & parenting   Emotion coaching   Positive strategies/Self determination

evidence

DNA-V for children and adolescents

process

procedure

Innovation +
Increased capacity for idiographic methods

Open source development

Innovation in child and adolescent mental health services

Delivery long term for care leavers

Into schools via curriculum development

Into digital via gamification/Apps
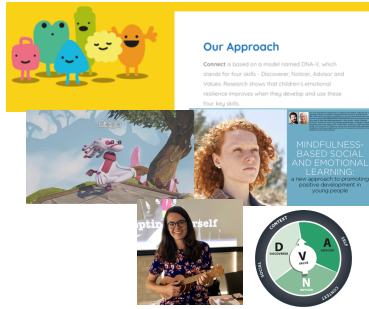
Follow-up

This talk is on —

DNA-v - DNA-v.com & Hayes, L., & Ciarrochi, J. (2015). The Thriving Adolescent. Oakland CA: New Harbinger.

CBS - www.contextualscience.org

Process & Procedure for CBT - S.C. Hayes & S. Hofmann (2019). Process based CBT

General ACT - S. C Hayes, Strasahl and Wilson 2012 Acceptance and Commitment Therapy

Context in schools - Ciarrochi, J., Atkins, A., Hayes, L., Kaur Sahdra, B., Parker, P.(2016) Contextual positive psychology: Policy recommendations for implementing positive psychology into schools. Frontiers in Psychology, section Personality and Social Psychology.

DNA-v curriculum - www.connect-pshe.org

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mindful adventures
- not for profit, unpaid, initially earthquake relief
mindfulness for professionals