

An Intervention for Balancing Personality Traits

Contrary to popular belief, personality trait change is possible. This change requires revisions to trait-specific manifestations which over time, translates to overall trait change. With the help of the Enhance Personality App, we make these revisions possible by focusing on two general processes. First, we target biochemical processes. Second, we target the perceptual manifestations of personality traits using a process we call “rewiring.” Below, we further detail the rationale for and the function of the following components of our intervention—Physical Actions Brain Actions, Mind Actions, and Real-World Actions.

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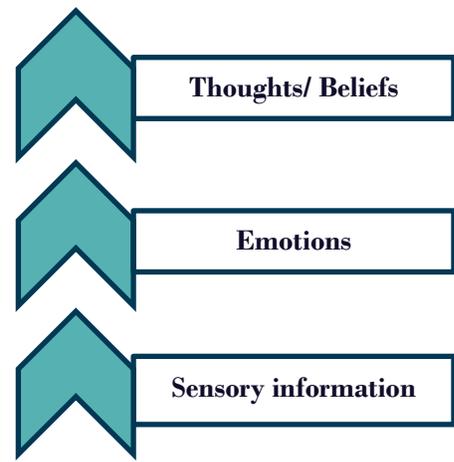
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Introduction

Personality trait change is a much-debated topic. While it is believed that personality traits are relatively stable throughout the lifespan, personality traits can and do change. One mechanism through which this is accomplished is via bottom-up processing. Bottom-up processing of perception is the process by which we take in sensory stimuli from the environment and form a concrete cognitive concept based upon our perception of it (Cherry, 2019). For example, if an individual sees an image and focusses on the individual elements of that image, they may conclude that it is holistically a flower. In order to change a personality trait, we have addressed the way a person *perceives* sensory information, via the process of rewiring. Rewiring intercepts the automatic processing of stimuli by offering an alternate way of evaluating what one perceives in a given scenario, thereby altering how one thinks and feels, and ultimately—how one’s trait manifests.



According to Magidson, Roberts, Collado-Rodriguez, & Lejuez (2014), the bottom-up approach would target “core behaviors that underlie personality traits with the goal of engendering new, healthier patterns of behavior that over time become automatized and manifest in changes in personality traits.” We take this approach a step further by first addressing the processes that lead to these patterns of behavior. These processes include, but are not limited to, “rewiring the brain” (changing a person’s cognitive biases) and changing the biochemistry of the body (e.g. hormones).

“Rewiring the Brain”

Since a personality trait consists of a characteristic and interrelated way of thinking, feeling, and behaving, the first aim is to alter a person’s cognition. People typically process stimuli in tandem

with the trait they have. Plausibly, when someone thinks in a way that is characteristic of the trait they desire to have, with time, this new pattern of thought influences how they feel and behave. In this context, the original pattern of thought is identified as the “wiring” whereas the refined pattern of thought is identified as the “rewiring.” The wiring—the cognitive bias—reinforces their trait by dictating how they perceive the world, how they feel in certain circumstances, and how they react. Thus, to contribute to trait change using the bottom-up process, we alter this cognitive process by modifying the way a person perceives the world via rewiring. As will be shown, rewiring underlies each part of the intervention.

Biochemical Processes

Another way in which we use bottom-up processing for personality trait change is via the altering of the biochemical processes of the body, which in turn, alters trait specific behaviors. Not only is personality formation a result of environmental influences, it is also a result of physiological factors, such as brain structure, neurotransmitters, and hormones. Research has shown that specific brain regions are associated with non-pathological personality traits (Ryman, Gasparovic, Bedrick, Flores, Marshall, & Jung, 2011). Ryman and colleagues (2011) have also found that concentrations of N-acetylaspartate (NAA) within the PCC cortex, is linked to specific personality domains—namely Openness, Neuroticism, and Agreeableness. As evidenced by the research, connections between these elements and personality suggests changes to the biochemistry of the brain may facilitate changes to these specific personality traits.

Additionally, cortisol has been an important biological element of focus in personality research. Cortisol, a stress hormone, is released in different quantities depending on the personality trait (Montag, 2014). Higher levels of cortisol, for instance, has been associated with individuals who were anxious, felt helpless, and/or were depressive (Netter, 2004). One way to adjust cortisol levels is to engage in physical activities. For instance, cortisol has been shown to decrease with lower intensity

exercises and increase with higher intensity exercises (Anderson, Berry, & Widerman, 2019). Since certain types of physical activities contribute to changes in cortisol levels, this too can help regulate biochemical components of the body—aiding the modification of personality traits.

Rewiring and Balancing

The notion of rewiring and balancing is fundamental to the brain action, mind action, and real-world action portions of the intervention. The rewiring, a negation of the wiring, is the primary mechanism that will be used to modify personality-influenced perceptions. Rewiring is known as the process by which one adopts a perspective opposite of the wiring in order to attain a more balanced view. If someone for instance, has irritability (high), the wiring statement for this personality trait would be the bias to focus on the unfair attributes rather than the fair attributes of a situation or an event. The rewiring, on the other hand, will enable this person to focus on the fair attributes of a situation rather than the unfair attributes. By having a client focus on the rewiring, we are priming them to perceive the fair elements of a situation, a perception uncharacteristic of the trait irritability (high). Having perceptions influenced by both the wiring and the rewiring allows the client to do what we call balancing. Balancing is the consideration of concepts influenced by the wiring and rewiring to come to a relatively rational decision. Through rewiring and balancing respectively, clients can alter the cognitive and perceptual processes associated with their trait.

With time, these perceptual changes lead to changes to the feelings and behaviors associated with the trait.

The Intervention



The Enhance Personality app is used to carry out the intervention. The app prompts clients to engage in a series of physical actions, brain actions, mind actions, and real-world actions over the course of eight weeks. Based on the bottom-up approach to personality trait change, we seek to circumvent processes that reinforce the existing personality trait. In changing small parts of the maladaptive personality trait (manifestations of the trait) using novel biochemical and cognitive processes, the intervention leads to changes in the personality trait as a whole.

Physical Actions

One component of our intervention tasks clients with completing physical actions. Physical actions are activities that prompt clients to do something active or relaxing. These physical actions include, but are not limited to getting moderate exercise, soothing music, and meditating. The use of physical actions is premised on the idea that the biochemistry of the brain and body contribute to a trait's manifestation. Similarly, these biochemical processes contribute to a trait's *change*. Low to medium intensity exercise, for instance, is linked to personality trait change (Jasnoski, Holmes, & Banks, 1988). Exercise over a period of a few weeks has been found to significantly decrease trait anxiety (Guszkowska & Sionek, 2009). Furthermore, there is evidence that exercise can release chemicals (i.e. endorphins and Brain-Derived Neurotrophic Factor (BDNF)) that increases happiness (Montag, 2014). As shown, physical activity is beneficial to balancing the biochemical components of the body. This controls for the internal elements that may reinforce a trait.

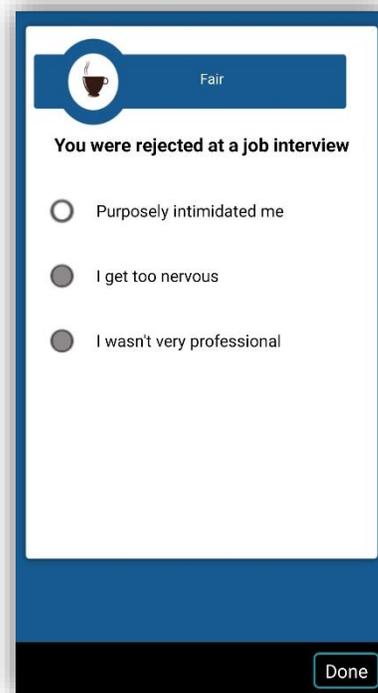
Brain Actions

Brain actions are a series of language-based games that are meant to reinforce the rewiring statement. The brain actions have multiple functions. First and foremost, these games serve the purpose of training the client to automatically recognize and internalize the targeted stimulus (informed by the rewiring). Second, the brain games prompt the client to *hypothetically* consider alternate patterns of thought in a given situation. Third, the brain games prompt the client to apply balancing in a given situation. Take the trait irritability (high) for example. As established, a person with this trait will perceive the unfairness across situations. To get the client to recognize the fairness across situations, we first apply the Learning RW1 game. The game may present the client with the statement, “In everyday scenarios, I should...” If the rewiring is correctly chosen, the client will select the following: “Focus on the just aspects so that I can react better to a situation.”

In another game titled Phrases RW1, the game presents the client with a statement and offers a few answer choices, all of which add context to the situation. The aim of the game is to choose the answer(s) which reflects the rewiring. For instance, the statement is “You were rejected at a job interview.” When presented with the following options, “Purposely intimidated me,” “I get too nervous,” and “I wasn’t very professional,” the client must decide which of these details makes the rejection fair. If correct, one will answer with the second and third listed option.

Mind Actions

Mind Actions are thought-activities that change how one interprets the past via the adoption of a novel lens. This lens is influenced by the rewiring. Mind Actions require the client to reshape their evaluation of their day/event/life when they reflect on it. Additionally, mind actions serve the purpose



of promoting more conscious, informed decisions when future scenarios occur. Mind actions include, but aren't limited to journaling, alternative thinking, and CBT-based activities.

Journal

Recollect a scenario that occurred recently where you felt irritated, or a scenario that would usually trigger your irritability, but it didn't.

What was your trigger? Situation

Add a comment that will help you remember the trigger.

I was late to work because of a traffic jam.

Select the attribute that you noticed more:

Unfair Attributes

Fair Attributes

Done

Journaling is a type of Mind Action that places emphasis on identifying what triggers one's trait and applying an alternate mode of thought—influenced by the rewiring—to the thoughts and feelings that surface from the discussion. Ideally, the client will learn to actively challenge their own mode of thought when they are triggered. Triggers include certain types of people, tasks, environments, scenarios, or thoughts. Once the client has identified their trigger for the journaling activity, they may be asked to record what happened in the event and how they handled the situation. Someone with irritability (high), for instance, may identify a traffic jam as a trigger when they are on their way to work. They may perceive this as unfair as it is something

that made them late to work. However, by actively challenging the unfair perceptions of the situation, the client may acknowledge reasons why their lateness was warranted, despite the traffic jam. One thing they should consider for instance, is how late they left for work. The application of the rewiring to evaluations gives rise to revised thought processes and affects until this too is unconsciously processed.

Real-World Actions

Research has shown that the completion of challenges (based on behaviors congruent with the desired personality trait) is more effective for actual trait change than simply desiring to change one's personality trait (Hudson, Briley, Chopnik, & Derringer, 2019). Therefore, to promote the

consolidation of a more adaptive personality trait, we've included challenges which we refer to as Real-World Actions. Real-World Actions are a series of challenges, premised on exposure therapy. These challenges entail putting oneself in situations that one typically avoids, or situations that trigger one's trait, and embodying behaviors that reflect the adaptive personality trait. The challenges are based on recommended actions and are based on previous Mind Actions entered by the client for a more personalized experience. These challenges vary from easy to challenging. The idea is the client will start with the easy challenge during the latter part of the program once they've internalized and practice applying the rewiring. Then, with each week, the challenges have a gradual increase until they have successfully completed the most challenging Real-World Actions.

Someone with the trait irritability (high) will likewise endure a series of challenges of easy, intermediate, and difficult intensity. For example, assume the client becomes irate at work and blows up at a coworker because they felt their efforts in a project went unappreciated. They typically avoid dealing with the situation in a less temperamental way. Challenges for this client would be tailored to their avoidance by getting them to rectify the issue in a calmer way. The easy activity for this client may include admitting to a coworker that they were wrong for yelling at them. The intermediate challenge may include admitting to the team that they were wrong for behaving inappropriately at the meeting. Lastly, the suggested difficult challenge may include attempting to make things right and

ME Reflect

Plan out some activities to help you reach your goal and fill in the provided spaces with activities ranging from the easiest to complete to the most challenging. (You can plan and perform all or some of the activities)

Easy Activity

Type here

Intermediate Activity

Type here

Challenging Activity

Type here

Done

improve their work relationships. Once the difficult challenges are complete, the client has reached the final step in embodying the core elements of the adaptive personality trait.

Call to Action

We change the behavioral manifestations of maladaptive personality traits by targeting the features that underly it. Most notably, the perceptions associated with personality traits are altered so that the client sees through a lens that promotes new, trait-specific perceptions. Through the process of rewiring and the restructuring of biochemical processes, clients see first-hand the effects of personality trait change. You can realize these effects too using the Enhance Personality app. If you want to demo our program, please refer to our contact page below.

Contact Us

If interested, please contact us at:

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Citations

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