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## An analysis of resistance to change exposed in individuals' thoughts and behaviors

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### Abstract

Resistance to change can be the cause of difficulty when it is either too strong or too weak. Therapy or information can be used to either strengthen or weaken resistance to change to appropriate levels. The purpose of this article is intended to disclose the relationship between resistance to change and some aspects of human behavior. Resistance to change has affective, cognitive, and behavioral components that create a psychological resistance to making a change in particular situations or overall changes in one's life, and often appears in psychotherapy and/or when organizational alterations are underway. Four subfactors of resistance to change have been found and are related to extraversion and neuroticism in the "Big Five" personality model. Much indicates that the development of resistance to change begins early in childhood and may be neurophysiologically founded. It can be traced in both macro and micro gestures in body language and is believed to influence general health. Whereas previously published studies on resistance to change have mainly dealt with the effect of psychotherapy and/or re-organization of staff members in organizations, this analysis will show different areas in human thought, behavior, and situations where resistance can appear, and it will try to analyze what is behind the mechanism of resistance to change.

Freud and Breuer (1895/1955) were the first psychotherapists who introduced the concept of "resistance" in clinical practice after having noticed that the introduction of "secrets" from the unconscious often resulted in a continuous resistance from the patient. Until the 1960s, there was little interest in the relationships between resistance and related traits. Izard (1960) disclosed in an investigation that resistance in psychotherapy was associated with the personality traits autonomy and dominance.

Presently, the interest in resistance to change has become more common, manifested, for instance, in discussions and research on the difficulties of carrying out organizational changes in large industries in the 1990s. Armenakis and Bedeian (1999) presented a number of variables on organisational change showing four dimensions: content, contextual issues, process issues, and criterion issues. Some researchers have emphasized that attitudes and feelings toward changes play an important role, while others claim that resistance to change is just behavioral. Oreg (2003) claimed that resistance to change is complicated and maintained that it has affective, cognitive, and behavioral components, the structure of which was implemented in the four subscales of his Resistance to Change Scale: Routine Seeking, Emotional Reaction, Short-term Thinking, and Cognitive Rigidity. He investigated the relationships between the Resistance to Change Scale and characteristics measured by the Five-Factor Model (FFM), or the "Big Five" (Costa & McCrae, 1992), comprising extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness. He found that neuroticism was positively related to three of his four subscales: Routine Seeking, Emotional Reaction, and Short-term Thinking, respectively, and extraversion negatively with the same. Agreeableness and conscientiousness were negatively correlated to Short-term Thinking, but conscientiousness was positively related to Routine Seeking. Extraversion and neuroticism showed to be the most interesting traits in the investigation. Neuroticism and extraversion were initially concepts of Jung (1921). Eysenck (1957) adopted these concepts, built upon the three-factor model and added Psychosis, taken from factor analyses. The Ey-

senck Personality Inventory was later revised (Eysenck & Eysenck, 1993).

Saksvik and Hetland (2009) performed an investigation to test Oreg's theories, as Oreg's work (2003) was a fundamentally new mode of understanding resistance to change, emphasizing the role of individual variables in elucidating the successful or unsuccessful change processes. Their investigation was conducted in 259 student participants who were administered a measure of the Five-Factor Model and the Resistance to Change Scale. Regression analysis showed that extraversion, openness to experience, and agreeableness were negatively correlated with resistance to change and neuroticism and positively correlated with Routine Seeking, Emotional Reaction, and Short-term Thinking. Cognitive Rigidity and gender did not show any significant correlation with the Big Five scales. The three Resistance to Change subscales seemed to be related more to insecurity and neuroticism rather than not being open to experiences. However, Saksvik and Hetland (2009) found that age correlated negatively with Resistance to Change scores, i.e., the younger the participant, the more resistance to change. This is somewhat surprising given popular opinion that radical political and religious movements have more young than old supporters. The authors emphasized the necessity of repeating the study with participants taken from a normal population and validity testing in varied settings. In general, however, Saksvik and Hetland (2009) concluded that the psychological resistance to change is related to characteristics like neuroticism and extraversion.

### *Expanding the concept*

Resistance to change may be seen partly as an internal phenomenon, i.e., a personality trait that characterizes the individual's behavior. However, it may also be seen as an external phenomenon, i.e., a state that may arise in connection with introduction of change in the individual's life situation, for instance, a disease with reduced functions, encounter of societal prejudices, or an organizational change that may require divergence from the ordinary routines of thinking and handling of situations (Oreg, 2003), making solutions more difficult. Therapy or acquisition of information may reduce or remove such a state. However, the trait of resistance to change is developed in childhood and is more difficult to overcome (Saksvik & Hetland, 2009). One may also regard the trait of resistance to change as a continuum from very weak (as in histrionic personality disorder and hypomania) to very strong (as in perfectionism, obsessive-compulsive disorder and obsessive compulsive personality disorder). Paranoid states, as well as strong prejudices, are also related, as they reduce the freedom of action. Occasionally, individuals at the extremes of this continuum are not aware of behaving abnormally and thus do not seek therapy. The blame for any dis-

comfort they feel in relation to their behaviors is laid on the environment but also on the their own personality, which they believe is not amenable to therapy. This idea of a trait of resistance to change may be compared to the personality trait introversion–extraversion, ranging from very introverted to ambivalent to very extraverted, with a relatively normal distribution in the population (Eysenck, 1967).

Resistance to change *as a state*, as a rule can be overcome by the individual himself, often in dialogue with other persons; but it has a tendency to return. Examples are eating a new dish, denial of illness by forgetting to take medicine or forgetting an appointment with a therapist, and avoiding payment of bills over the Internet. Of course, most people do not speak in terms of resistance to change, but use expressions such as “nothing ventured, nothing gained,” “there is nothing secure enough,” and “he doesn't budge” to describe resistant individuals. As can be seen in these examples, resistance to change is often regarded as negative. Knowles and Riner (2007) have developed “Omega strategies,” which are persuasion techniques used to reduce or overcome resistance to change. However, most resistance to change is natural. Skepticism, reactance, and inertia are the main ingredients.

Resistance to change may have different intensities depending on the circumstances. When an individual is introduced to change through a message that is not clear or communicated in full and/or that the person does not fully grasp, there may be no or only a small amount of resistance to change (Oreg, 2003). In contrast, the more complicated and large the change is understood to be at its presentation, the more probable a blockage of thinking will immediately appear towards the information (Oreg, 2003). By studying the components and the processes behind this resistance, it is possible, for instance, to prevent misunderstandings and realize organizational changes, as well as prevent therapies from collapsing (Saksvik & Hetland, 2009). Studying these areas in greater detail will result in deeper knowledge of important relations in social and personality psychology.

### *Resistance to change illustrated by attachment theory*

In order to understand resistance to change, it is necessary to begin in childhood. Some kinds of resistance to change start already in the newborn child, who is biologically programmed to seek closeness to the caregiver (Bowlby, 1969). If this seeking is rejected in different ways by the caregiver, the child will respond with discouraging movements or no movements at all. Those very basic behaviors or non-behaviors may be called an infantile variant of resistance to change. The phrase “resistance to change” did not exist when Bowlby (1969) formulated attachment theory, but he described the phenomena that occurs in such a way that one may

speak about an infantile variant of resistance to change consisting of discouraging movements or no movements at all.

The older infant is stimulated by proximity to parental figures to be ready to explore its environment on the basis of ability to return to security if discoveries are fear-invoking (Bowlby, 1969). If the contact between the child and the caregiver is disturbed due to psychological, social, or neurological reasons, the child becomes passive and does not react, reacts by avoidance, or reacts with fear when the caregiver or some other person approaches. In this situation, the child does not take initiative to explore the environment and an infantile variant of resistance to change is established. Later on, when the child begins to develop social abilities, a secure child tends to have more and better friendships with minimal resistance to change. The emergence of resistance to change is often founded in a childhood with strict routines accompanied by negative reinforcement. Absence of secure attachment often co-occurs with patterns of negative reinforcement (Bowlby, 1969). When the attachment becomes insecure in different ways (Cassidy & Shaver, 1999), children do not dare to take initiative, and instead become passive and are on their way to developing a resistance to change. Green and Goldwyn (2002) have shown that many studies indicate that disorganized attachment seems to increase social problems and decrease the ability to solve cognitive problems later in life. They also point to the fact that an increased presence of psychopathology in childhood is complicated to pinpoint and needs further study.

### *Resistance to change in therapy*

Freud and his colleague Breuer (1895/1955) were the first to coin and define the word "resistance." Freedman, Kaplan, and Sadock (1975, p. 497) wrote:

Freud's conclusion was that resistance was the matter of operation of active forces in the mind, of which the patients themselves were often quite unaware and which resulted in the exclusion from consciousness of painful or distressing material. Freud described the active force that worked to exclude particular mental contents from conscious awareness as repression—one of the fundamental ideas of psychoanalytic theory.

Dewald (1964, p. 221) formulated a definition of a person's resistance to change as "representing the continuing operation and function of the patient's ego defenses as they emerge and are manifest in the therapeutic situation."

There are three sources of resistance to change to be pointed out here. The first one is the need to sustain repression of unconscious conflicts and thereby avoid unpleasant affects that may emerge out of such conflicts if they come into conscious thought. The second source of resistance to change is the compulsive repetition of the patient's wish for satisfaction of infantile and childhood

drives and drive derivatives. The third major source of resistance to change is fear, manifested in the anxiety and uncertainty the patient feels when he tries to develop new modes and mechanisms when working with issues during therapy (Freud, 1895/1955; Dewald, 1964). Change in thoughts and behavior is often associated with some loss of energy and uncertainty about the result.

In the beginning of the psychoanalytic era, resistance to change was considered something bad, the patient viewed as "uncooperative" and, consequently, the therapy often went off course. However, the development of ego psychology (Freud, 1923/1961) made it clear that resistance to change played an important role in one's psychological functioning. By understanding resistance to change, it became possible to map out many unconscious aspects of the ego function, and by showing them to the patient, bring them into consciousness.

Therapists found that resistance to change could occur at varying levels of consciousness, which could imply the patient of not being fully aware of the conflicts within. Patients often avoid disclosing material that is conscious to them and will even lie to the therapist. Sometimes, the patient is not aware of the existence of a conflict that is creating resistance to change, but becomes conscious of it when the therapist points it out. The most difficult type of resistance to change occurs when the patient is totally unaware of unconscious material. This patient may be very motivated to work in therapy but, nevertheless, uses unconscious ego defense mechanisms, such as displacement, isolation, or projection without being aware of them. Sometimes it is possible to uncover these hidden resistances using hypnotherapy. However, resistance to change, in various manifestations, continues throughout therapy regardless of the kind of therapy chosen.

Resistance to change may appear in actions such as failing to show up for a therapeutic session. When the therapist points out that there may have been thoughts and feelings of not coming, the patient admits that this is true (Dewald, 1964). Sometimes, a special subject—for instance, sexuality—is avoided, intellectualized, or paradoxically discussed in detail, with the patient hoping that is what the therapist wants to hear. This is also a sign of resistance to change. Another way of grasping the quality and quantity of resistance to change is by testing hypnotic susceptibility. By using two of the 10 tests in the Stanford Susceptibility Scales (Hilgard, 1965), the Postural Sway Test and the Hand Clasp Test, a rather good picture is given of the individual's suggestibility and ability to enter a trance. Resistance to change and need for control may be discovered by regarding the individual's behavior during suggestive instructions. The testing also includes observations of vegetative changes and changes in movements. To release control is to be open to verbal or tactile stimuli



from the hypnoterapist. The less self-reflecting the person tends to be (initiated by the left cerebral hemisphere), the more quickly the hypnotic trance appears, indicating less resistance to change.

### *Resistance to change as an influence on general health and physical symptom reporting*

Several studies have shown that other factors, such as learned helplessness especially in depression (Seligman, 1992), positive adaptation (Coughlin, 2007), as well as optimism in children with cancer (Williams, Davis, Hancock, & Phipps, 2009) affect resistance to change. Positive thinking is also an important factor in curing serious illnesses (Jayson, 2004). Other researchers have stressed sense of coherence (Antonovsky, 1993) and optimism (Scheier, Carver, & Bridges, 1994), which have a predictable effect on general health associated with physical symptoms (Ebert, Tucker, & Roth, 2002). High levels of stress along with trauma symptoms will increase learned helplessness and resistance to change (Seligman, 1992). Post-traumatic Stress Syndrome (PTSD) caused by exposure to terror-inducing circumstances may lead to more cognitive rigidity related to resistance to change (Oreg, 2003; Hobfoll, Canetti-Nisim, & Johnson, 2006). A high sense of coherence means that life is more understandable, manageable, and meaningful. Optimism is related to positive thinking and related to a better immune function (Seligman, 2002; Segerström & Sephton, 2004). Ebert and colleagues (2002) found among other things that Neuroticism and Extraversion amongst the “Big Five” traits have the same capacity for measuring resistance to change as Sense of Coherence and Optimism. That is, high resistance to change is associated with high Neuroticism and low Extraversion and vice versa. Ebert, *et al.*'s (2002) article showed how different components of resistance can be used for bettering the prediction of how to handle resistance.

### *Resistance to change reflected in body language*

*Approach or withdrawal.*—In general, the body language and verbal testimony of an individual are synchronized. But in cases where the external circumstances demand an action that goes against inner desires, there is a difference in what the two systems communicate. The truth generally is to be found in body language. By studying the body language of the client, employee or partner (Morris, 1977; Molcho, 1983), it is possible get a better idea of the individual's reaction and the underlying will and desire. Resistance to change has its own language with suppressed or even absent bodily movement and evidenced by greater muscular control, particularly in the face. To move back or stand still (Morris, 1977) are expressions of reservation and resistance to change. To approach is the reverse. Choosing nearness in physical space when communicating may be an expression of feeling safe and confident. Hall (1966), the first to sys-

tematically study human use of space, described four distance zones based on his observations of normal middle-class Americans. The closest one, the intimate zone between two communicating individuals, represents the least resistance to change and the farthest one, the public zone (which nearly makes communication impossible), represents the maximum resistance to change.

Hall (1966) proved how differing amounts of personal space influences thinking and behavior when communicating. He stressed how cultural differences, e.g., between Americans and Arabs, could be represented by the amount of personal space used. Generally speaking, Americans tended to use more personal space during interactions than Arabs. When approached too closely, i.e., in the far phase of Hall's intimate zone, Americans removed themselves to the next zone of personal distance. Hall added in interpretation that Americans were conscious about the cost of relational involvement, in contrast to Arabs.

Personality is also mirrored in personal space. Several studies (Patterson & Holmes, 1966; Cook, 1970; Patterson & Sechrest, 1970) have found that there is a positive relationship between Extraversion (measured by the Maudsley Personality Inventory and the Minnesota Multiphasic Personality Inventory) and personal space based on seating distance. The more extraverted the person, the closer he will tend to sit to another person. On the other hand, personal space increased in individuals who were psychologically disturbed (Weinstein, 1965; Hutt & Vaizey, 1966; Fischer & Byrne, 1967; Lett, Clark, & Altman, 1969). Sommer (2002) describes this: “Probably the most consistent findings are that people who are extraverted, field dependent, affiliative, and cooperative tend to interact at a closer distance than those who are anxious, maladjusted, and introverted” (p. 4). These results are in agreement with Oreg (2003), who found a negative correlation between Extraversion and resistance to change and a positive relation between Neuroticism and resistance to change.

Sommer (2002) identified 10 different ways of measuring interpersonal distance, for example, the stop distance: “A confederate approaches the subject who tells the other one to stop when the confederate comes uncomfortably close” (p. 3). There may be a relation between interpersonal distance and resistance to change such that the closer the distance in communicating in a dyad, the less the resistance to change. Forsell (2010) has discussed using this method as a test for assessing her clients' need for closeness and trust, which may be the opposite of resistance to change. In this instance, she slowly approaches the client and asks them to tell her to stop when they feel uncomfortable. Åström (1993) described an experimental situation where people are observed and filmed stopping at different distances in front of the experimenter during introducto-

ry greetings. Using the Sociability variable of the CMPS Scale by Cecarec and Marke (1968), Åström found that younger women stopped closer to the experimenter and had high scores on Sociability compared to those who stopped at longer distances and who scored higher on Aggressive Non-conformance. The former disclosed a greater need for contact, had greater interest in the relationship, and less resistance to change, while the latter were more expectant, controlling, and showed more resistance to change.

Finding a place in a lecture room far from the lecturer is an expression of resistance to change and a critical attitude, and sitting close will give a manifestation of interest in the topic (Morris, 1977). When people are used to gathering, for instance in churches, it is not unusual for someone to feel uncomfortable unless he can have the same seat as usual. This is another example of resistance to change.

*Movements and gestures.*—It is possible to categorize physical movements into different types when individuals meet for the purpose of communicating, i.e., major motions, such as backward and forward, and positions, such as sitting, standing, and walking. Leaning back while in a sitting or standing position with crossed arms or legs (while sitting) may be an expression of resistance to change. Standing in circle with others and pointing the torso and feet in a direction other than towards the actual speaker or towards the mid-point in the circle is another expression for resistance to change. The carriage of the upper part of the body can be construed in the same way, sitting or standing. Erectness of the body posture means vitality, while a sunken posture means passivity or depression. Downward angling of the head and infrequency of hand movements are expressions of resistance to change. All of these are mirrored in posture and movements (Waxer, 1976).

The long-term loser, the social failure, and the depressed subordinate walk with a permanent stoop, shoulders rounded and neck hunched forward, their posture a non-stop slump. The body-lowering and curling up is not acute, it is chronic just as the conditions of submission are chronic. (p. 493)

Resistance to change against human contact is best illustrated with the frontal Barrier Signal with the left and right arms intertwined across the front of the chest. A rather common therapeutic variant is to press the tightly clasped hands down on to the crotch and squeeze them there, as if protecting the genitals, a strong symbolic gesture of *noli me tangere* ("do not touch me"). When a form of bodily contact is inevitable, e.g., at introductory handshake greeting, the resistant individual tries to avoid all forms of greeting that are "too close" by avoiding applying pressure to the outstretched hand, squeezing only the upper part of the other's fingers, or pushing away the other's hand when greeting, etc. (Morris,

1977; Molcho, 1983; Åström, 1993).

Visual behavior is the most important non-verbal phenomenon in its social, physiological, and even psychological significance. Heron (1970) stated:

The most fundamental *primary* mode of interpersonal encounter is the interaction between two pairs of eyes and what is mediated by this interaction. For it is mainly here, throughout the wide ranges of social encounter, that the real encounter, in the strict sense, occurs. (p. 244)

Champness (1970, p. 309) has stated, "One of the most wonderful things in nature is the glance of the eye; it transcends speech; it is the bodily symbol of identity." When analyzing the expression of the pupil, consideration must be given to the fact that changes in the size of the pupil are physiological, caused by differences of light or intake of certain drugs. Pupils also react to emotional impressions; the more positive the impression the bigger the pupils, and vice versa. That is to say that when someone gives a negative or defensive impression or houses negative thoughts, the pupils shrink. This may happen in an individual with strong resistance to change. Gazing at the ground or the tips of the toes is typical for an individual who is afraid of change and depends on old experiences and is careful about new ones (Morris, 1977; Molcho, 1983).

#### *Psychological resistance in writing psychology (graphology)*

Writing is a form of body language, micro movements, more determined by personality trait and character than by the muscles in the writing arm and fingers. Pophal (1949) speaks about "Hirnschrift" (mind writing). However, it is important to be aware of possible diseases the writing individual may have that could influence their writing. Movement, form, distribution, and ground rhythm are four criteria used in categorizing the overall impression of handwriting. Movement and rhythm, divided into two groups (strong and weak), seem to be most evident when speaking about resistance. Strong movement and rhythm imply elastic, flowing, swinging, and rapid movement of the pencil and is interpreted as *vigorous, versatile, active, and dynamic*. Seichter (1965) describes the weak group in the following way:

In a weak and disturbed movement rhythm many or only some of the following qualities appear, that may be described with words like: *feeble, often checked, rigid, formal, flaccid, wrecked, fragile, dull, shaky, disjointed, and torn to rags*. Besides the line hold is often un-elastic inelastic and sometimes has a desperate and irregular pressure. (p. 35)

The above descriptions are in accordance with Oreg (2003) in that extraverts are viewed as having little resistance to change and vice versa for introverts and neurotics.

### *Resistance to change in a psychobiological context*

From ancient times to the present, there has always been the urge amongst those in the scientific community to relate personality traits to psychobiological phenomena (Eysenck, 1967). This has partly been successful, but much is lacking in creating a comprehensive psychobiological theory of personality. Hitherto, no article has been published disclosing the relationship between resistance to change and psychobiological variables. It has only been through the personality traits of Extraversion and Neuroticism that we are able to analyze psychological resistance.

The first person to relate personality traits to bodily fluids was Galen, a Greek doctor, (129–200 AD). He asserted that people who were strong-willed, who often had outbursts of temper and daring and were often furious, had an excess of “red” gall. He called them choleric persons. People who were sad, depressive, and pessimistic had an excess of “black” gall and were referred to as melancholic, resistant persons. People who were cheerful, happy-go-lucky, volatile, uneasy, and non-resistant had a surplus of blood and were called sanguine. Finally, people, who were tardy and sluggish, had a lack of initiative, and were restrained and conservative had a supposed surplus of phlegm or mucus in the blood. Later scientists of the time described it as an excess of fluid of lymph (Vallberg, 1942). Galen’s theories were accepted until the beginning of the 17th century when Harvey (1628), an English doctor, refuted them.

Pavlov (1927/1960) discovered and described salivary reactions in dogs in different situations and established the basic laws for the establishment and extinction of what he called “conditioned reflexes.” Conditioned reflexes later became a basis for models of human learning. Pavlov found that conditioned reflexes imply automatic reactions to stress and pain. He also found that different types of reflex actions were related to different types of temperament, very much like those of Galen, although described in different terms. He also found that dogs with different temperament types habituated differently, for example, “the strong and lively one” (correspondingly the sanguine personality) habituates very quickly while the one with a “weak nervous system” and less stimulus hunger (correspondingly the melancholic and phlegmatic personality) habituates more slowly or not at all. In people, quick habituation may be found in individuals with weak resistance to change and slow habituation in those with strong resistance to change. Conditioned reflexes arise more often in introverts and neurotics, especially in the latter who have a strong tendency to generalize conditioning to other stimuli (Jung, 1921; Eysenck, 1953; Eysenck, 1967). If conditioned reflexes have developed in an individual under negative circumstances and there is generaliza-

tion, fear of the situation sets in and avoidance behavior begins, which will become a part of the individual’s resistance to change.

Pavlov (1927/1960) also observed and studied Trans Marginal Inhibition, or the inborn reaction of closing down when exposed to more stress and pain by electrical stimuli than is endurable. Those with different temperament types responded to stimuli in the same way, but moved through the response process at different rates. Jung (1921) was the first one to introduce the concepts of introversion and extraversion within personality psychology. The introverted individual is more directed toward inner psychic processes and needs less external stimulation compared to the extravert, who is more directed toward external stimuli. That will partly make clear his discovery that introverted persons were more susceptible to physiologic excitation and reached Trans Marginal Inhibition earlier than extraverted persons. This would seem to indicate that people with marked resistance to change have a short shutting-down point. If so, this could be an important information for therapists in managing the psychotherapeutic process.

Eysenck (1957) and Cloninger (1999) have studied different structures in the brain to establish the basis of temperaments or specific ways of reacting when meeting new situations. These temperaments describe accurately the way in which resistance to change manifests itself. Eysenck (1967, 1981) has stated that divergences in the personality dimensions of extraversion-introversion and stability-neuroticism are related to states in reticulo-cortical areas of the brain and autonomic arousal, respectively. Eysenck inferred that in introverts, there was greater tonic activity in their ascending reticular activating system (ARAS), that they possess more reactive cortical pathways, and attain optimal arousal with low stimulation. In contrast, extraverts are always stimulus-hungry in all sensory modalities, which leads to new experiences and may result in low resistance to change.

Cloninger (1999) was the first to develop a more closed model of both temperament and character. He preferred to utilize genetic, neurobiological, and neuropharmacological data, rather than using factor analysis of behavior or self reports, as was done previously. His techniques included measurements of electrodermal reactivity. He proceeded from the point of view of how the brain processes new information. Cloninger’s (1999) Three-dimensional Personality Questionnaire (TPQ) describes three distinct dimensions of temperament. These include Harm Avoidance, observable as anxious and pessimistic behavior and cognition vs outgoing and optimistic; physiologically, this temperament is related to high serotonergic activity in the brain. Novelty Seeking is observed as impulsive and quick-tempered behavior and cognition as opposed to rigid and slow-



tempered, indicating low dopaminergic activity in the brain. Reward Dependence is observed as warm and approval-seeking in contrast to cold and aloof behavior, and indicates low noradrenenergic activity. Within the three dimensions of temperament, it is possible to find individuals with low electrodermal resistance that have low avoidance, high novelty seeking, and high reward dependence, equivalent to extraversion. Some time after the Three-dimensional Personality Questionnaire's introduction, a fourth dimension was added, Persistence; this describes persevering, ambitious behavior, which can be contrasted with easy discouragement and underachievement. These four dimensions have a strong relationship to the "older cortico-striatal and limbic systems that regulate habits and skills" (Cloninger, 1999). Cloninger (1999) found that temperament alone could not explain the whole personality and he completed his personality theory using three character traits to measure a person's humanistic and transpersonal style: Self-Directedness (reliable, purposeful vs. Blaming, aimless), Cooperativeness (tolerant, helpful vs. prejudiced, revengeful), and Self-transcendence (self-forgetful, spiritual vs self-conscious, materialistic). These character dimensions relate to the frontal, temporal, and parietal neocortex, respectively, which regulate learning of facts and propositions.

Thorell (2009), in his research of extraordinarily frequent electrodermal hyperactivity in depressed patients with suicidal propensity, formulated a functional model to describe the way in which some types of neurons function. He found that if one assumes inadequate activity of "sameness neurons," which inhibit the eliciting of orienting reactions to unexpected events (curiosity), a consequence might be that the person is hindered on a fundamental level from attending to events occurring in the environment in a normal way. This would be considered a neurophysiologically dictated resistance to change resulting in the loss of a specific kind of interest in everyday life (Thorell, 2009).

## Discussion

The material in this article indicates that resistance to change may be present in nearly all decision-making processes, be disclosed in verbal and non-verbal acts, and has a neurophysiological basis. Freud and co-worker Breuer (1895/1955) were the first to coin the expression "resistance," but they differed in formulating the definitions. All psychological resistance is built on a fear of change where the outcome could result in a worse situation. The portion of the population on either extreme of the resistance to change continuum may be considered to have psychopathological variants of resistance, are not aware of their illness, and consequently may not seek care. To assist at least a portion of this population, psychotherapy and/or medical care is needed. The psy-

chotherapeutic process must proceed slowly and carefully, as the resistance to change is often the result of the fear of change and the attitudes and behaviors of the patient's parents or other adults from their childhood. The portion of the population in the middle of the continuum should be able to consider whether or not a potential change is positive or negative and, after due consideration, come to a decision about how to handle the change.

Several studies have tried to analyze components and qualities of resistance to change, but their conclusions have been, to a large extent, divergent. This may depend on special circumstances and populations, so that investigations have addressed varying, distinct, separate levels of the resistance to change continuum, as opposed to viewing the continuum as a whole. Only one researcher, Oreg (2003), was interested in the components of resistance and how resistance to change was related to other personality traits in the Big-Five Model. Correlation and regression analyses described relationships between three of the four subfactors of his Resistance to Change Scale and two variables of the Big-Five Inventory, namely Extraversion and Neuroticism. However, the correlations were in reversed order.

There are different ways of measuring resistance to change. One can use a standardized inventory like Oreg's (2003) Resistance to Change, which measures the relative strength of the components of resistance to change. Cloninger's (1999) Three-dimensional Questionnaire is another inventory describing resistance to change rather well. An alternative method of measuring resistance to change is by testing hypnotic susceptibility, which gives the therapist a good idea of the individual's resistance to change and need for control.

One field where the goal is to reduce resistance is marketing. By emphasizing the advantages and concealing the disadvantages of a product, a business attempts to create a positive opinion about a product in the target population. Individuals with a strong resistance to change do not yield to the temptation, as they have a tendency to avoid mass media's influence, while individuals in the middle of the continuum are more dependent upon weighing the pros and cons as presented. People with little resistance to change are easily swayed to believe in the product's benefits.

It is not entirely clear what drives the development of resistance to change in childhood. However, Bowlby's (1969) Attachment theory may yield part of the answer. The theory implies that a newborn child is biologically coded to seek closeness with its caregiver. The emergence of resistance to change may be founded in the absence of proximity and strict routines in childhood often accompanied by negative reinforcement. The child, under such circumstances, becomes insecure, avoids new contacts and experiences, and becomes more psychologically resistant. Such early experienc-

es may later in life manifest themselves in reservations about making new social contacts and can be identified by observing greeting behaviors, such as fear of standing or sitting too close to another person, fear of speaking with an unknown person, etc. Gestures of all kinds are more restrained and controlled. A volitional change in gesticulation implies a release of control and may in some individuals awaken thoughts of uncertainty and a fear of isolation.

A marked resistance to change may be in part the product of a particular type of upbringing during childhood. Strong influences from a very conventional environment, where certain rules of behavior are common and sometimes take the form of prejudices, may diminish freedom of action and at the same time reduce possibilities for greater and richer experience. Many people with an obvious resistance to change may envy others with the daring to change their behavior. This may be especially true in regards to creating new social contacts. Instead of learning how to change their own behavior, the clinical experience of the authors indicates that these individuals often choose the shortcuts of alcohol or other drugs. This has the effect of increasing their sense of "freedom," or in other words, increasing their extraversion and diminishing their neuroticism, resistance to change, and interpersonal distance.

Having personality characteristics at either extreme end of the resistance to change continuum makes life more complicated. For those with low resistance, changes are stimulating but at the same time perceived to create instability. For those with too much resistance to change, life experiences are reduced and constrained. Not only the person, but also his or her actual environment may be negatively influenced by the lack of change or pronounced resistance to change. Dominant leaders with low resistance to change may be seen as having no definite logic in their decision making and as overly impressionable, whereas those with high resistance to change may be seen as too conservative and frightened of change, and even as obstacles to progress. Most people's traits are close to the middle of the resistance to change continuum. When confronted with new situations, they consider the potential challenges and rewards, and any difficulty in moving toward action is reflected in a longer duration of time to come to a decision to accept or refuse the change.

Some basic questions about resistance to change remain to be answered. For example, do people typically recognize their own resistance to change? If it is possible to recognize one's own resistance to change, can resistance be corrected through one's own reflections or is outside influence and support required? How do individuals value their own resistance? Clearly, much research is required before theories of resistance to change are fully developed.

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