

**A Brief Introduction to  
Cognitive Enhancement Therapy (CET)  
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SPENCER M. ROBINSON

**Background**

Cognitive enhancement therapy (CET) is a performance-based, developmental intervention approach to remediation and rehabilitation in the areas of social integration, attention, memory and problem-solving neuropsychological cognitive deficits. While from the perspective of a therapeutic schedule a specific intervention module ostensibly focuses on one of these areas of cognitive deficit, it must be understood that neurologically there is no single, distinct arena of cognitive function, but rather a considerable integration of cognitive processes involved in any function, and intervention addressing all four traditionally perceived arenas of neurocognition are required to achieve the most efficacious outcomes; as an example, a memory deficit will co-occur with an attention deficit, as a deficit in attention impairs memory, and both memory and attention deficits disturb social integration, etc.

CET was developed in the early 1990s by a team of researchers led by Gerard E. Hogarty, MSW, out of an evolving process stemming from the work by Hogarty and Dr. Samuel Flesher at the University of Pittsburgh Medical Center (Pittsburgh, Pennsylvania, USA) in intervention in the problems in cognitive functioning and social integration of patients with schizophrenia or schizoaffective disorder. In addition to the contribution of the principal members of the team at that time (Hogarty, Flesher, Mary Carter and Deborah Greenwald), the methods, training modules, approaches, and concepts from leading researchers around the world contributed to the constantly evolving intervention program. Among one of the most pivotal contributions was an approach known as integrated psychological therapy (IPT), first developed by the Swiss researcher H. D. Brenner and colleagues (as published in Brenner et al. 1994), and further extended by William Spaulding and colleagues (Spaulding and Reed 1989; Spaulding et al. 1999). The contribution of IPT led to Hogarty's seminal work on personal therapy or PT (Hogarty 2002), which became the foundation for the development of CET in its current form.

After Hogarty's death in 2006, leadership in published research on CET fell to Dr. Shaun Eack in the School of Social Work, University of Pittsburgh. In addition to ongoing clinical trial studies at the University of Pittsburgh, the dissemination of CET clinical programs began to be independently initiated by Dr. Samuel Flesher, who, along with Hogarty, was the initial co-developer in the early formative stages of CET. In 2000 Dr. Flesher left the University of Pittsburgh team to train CET clinicians at Mercy Behavioral Health in Pittsburgh, USA and at PLAN (Planned Lifetime Assistance Network) of Northeast Ohio, Inc., Cleveland Heights, Ohio. While training CET clinicians at Mercy Behavioral Health and PLAN of NE Ohio, from

2004 Dr. Flesher began to disseminate the CET program to other institutions under the program trademark CETCleveland®. Dr. Flesher directed CETCleveland training and dissemination until his death in 2010. From 2010 the Center for Cognition and Recovery, LLC, Beachwood, Ohio was formed as a joint venture between JFSA (Jewish Family Service Association), Cleveland, Ohio, and PLAN of NE Ohio, dedicated to training CETCleveland curriculum clinicians and disseminating the CETCleveland curriculum to different institutions providing mental health services. As of 2014, under the guiding hand of Mr. Ray Gonzalez, the founding executive director of the Center for Cognition and Recovery, the CETCleveland curriculum had been incorporated into 31 mental health facilities in eleven states in the USA. Over 144 CETCleveland curriculum programs had been completed, 44 groups in process. All the sites reported similar results with an 80 to 90% attendance rate and an 85% graduation rate. (Preceding data supplied by the Center for Cognition and Recovery, Beachwood, Ohio.) In 2011 the Center for Cognition and Recovery received the SAMHSA (Substance Abuse and Mental Health Services Administration of the United States Department of Health and Human Services) Science and Service Award for “demonstrating successful implementation of a recognized evidence-based intervention.”

Although CET was initially developed for remediation of impairment in cognitive function and social integration in patients in the recovery phase of schizophrenia or schizoaffective disorder who were symptomatically stable but remained cognitively impaired, its remarkable efficacy has led to a major consideration of the use of CET intervention in a wider range of disorders with associated deficiencies in cognitive and social functioning. An example of the efficacy of CET for both subjects with schizophrenia and subjects with schizoaffective disorder may be seen in a large long-term randomized study funded by the United States National Institute of Mental Health that demonstrated both exceptional and enduring improvement in cognitive and social functional levels (Hogarty et al. 2004). In a two-year randomized controlled clinical trial study using CET intervention for subjects with schizophrenia and measured volumetric loss of gray matter, an outcome of significant volumetric increase of gray matter and protection from gray matter loss was effectively demonstrated (Eack et al. 2010).

As an example of general outcomes, in 2014 InterAct of Michigan reported that for the year prior to CET intervention, out of 19 CET participants, there were 156 hospital bed days that were reduced to 10 bed days for the CET treatment year and 0 bed days for the 2 months following CET graduation (as of 2/19/2014). Similarly, Bridgehaven Mental Health Services of Louisville, Kentucky reported that for the year prior to CET intervention, out of 13 CET participants there were 104 hospital bed days that were reduced to 0 bed days for the CET treatment year and 28 bed days (all attributed to a single client) for the 3 months following CET graduation (as of 2/21/2014). These results are consistent with reports from other CET programs. (All preceding data was supplied by the Center for Cognition and Recovery, Beachwood, Ohio.)

CET has been adopted by the Center for Excellence in Autism Research (CeFAR), University of Pittsburgh, as a major intervention in social and cognitive impairment in disorders on the autism spectrum, and randomized controlled clinical trial studies at CeFAR using CET intervention for subjects with autism are currently in progress, funded by the United States National Institutes of Health. CET is listed in the American Psychological Association (APA) *Catalog of Clinical Training Opportunities: Best Practices for Recovery and Improved*

*Outcomes for People with Serious Mental Illness* (APA/CAPP 2007). The *APA Catalog* is a compilation of “the best clinical practices known to improve outcomes and quality of life for adults with serious mental illness, identifying advanced clinical training initiatives that were immediately available without further development costs, and providing access to experts involved in the development or research of these state-of-the-art interventions” (APA/CAPP 2007, p. 4).

### **Basic Principles**

The central basis of CET is the emphasis on social cognition. It is precisely this emphasis that distinguishes CET from other cognitive intervention approaches that tend to exclusively target traditionally perceived neuropsychological deficits in the specific arenas of attention, memory and problem solving, or modalities that attempt to externally define and remold faulty self-schema (such as cognitive behavior therapy), particularly in regard to persistent delusions and hallucinations. From the research of the CET team and major contributions from many leading researchers from around the world in the evolution of CET, a strong body of evidence indicates that social cognitive deficits are more disabling than other perceived discrete arenas of neuropsychological deficits (e.g. Hogarty and Flesher 1999; Penn et al. 1997; Corrigan and Penn 2001; Pinkham et al. 2003). While behavior can certainly be trained and conditioned to respond in what on the surface may appear to be a socially accepted manner, the fundamental underpinnings of human relationships – such as a correct and perceptive understanding of the intentions, feelings and behavior of another person; a real appreciation of the concepts and implicit values of the rules of conduct that govern social situations; and the acquisition of the spontaneous ability to generate an emphatic and appropriate response that facilitates the formation and maintenance of real bonding between one human being and another – are the areas of difficulty in social cognition that are most disabling in a variety of both developmental and acquired neurocognitive impairments. Evidence implies that these areas of deficits in social cognition are not effectively addressed by standard cognitive intervention approaches beyond mimicking and what are basically superficial adaptations.

Equally, evidence implies that cognitive deficits in schizophrenia (which, by extension, we may infer also applies to other severe neuropsychological disorders) are more global than specific, and likely implicate various underlying neuronal networks (see for example Blanchard and Neale 1994; Mohamed et al. 1999). Such profound heterogeneity has been explained in terms of the concept of a “core” neural mechanism though it has also been proposed that developmentally compromised neuronal systems that support other perceived discrete neurocognitive functions are likely to differ, at least in part, from the primary pathways that underlie social cognition (see for example Pinkham et al. 2003, Brothers 1990). The key point of this debate is that evidence would seem to indicate that cognition itself is a diffuse phenomenon, and each of the various proposed areas of cognition, rather than a process of a particular dedicated set of neuronal pathways, are formed through a connection of a number of different pathways that figure into many different cognitive functions, the perceived cognitive functions simply the effect of the interaction with each other through interconnected neuronal pathways, each so-called discrete cognitive function an inherent component of other so-called cognitive functions,

the interaction of which constituting specific types of perceived cognitive abilities. It is the quality (i.e. timing, speed, precision, strength, balance, etc.) of neuronal interaction that is the core issue in cognitive impairment.

It is this understanding of cognitive abilities and the obverse, cognitive dysfunction, that forms the central paradigm of CET. This paradigm is manifest in CET by the set of cognitive training exercises, that though address specific traditionally proposed areas of neuropsychological cognitive deficits, integrate these sets both in the training sessions and in follow-up interactive group sessions where the skills developed through the sets of computer-aided training are exercised in a socially interactive environment transforming the skills learned in the computer sessions into social experiences, incorporating the learned responses and social experiences into real-life spontaneous social integration. In CET specific areas of cognitive deficit are rehabilitated through integrated training, with the understanding that no so-called discrete cognitive function is actually discrete, but is dependent on the integration of other cognitive facilities and all must be exercised together to effect real improvement in cognitive function. Integration and interaction are the key components of CET.

While CET uses cognitive training exercises, specifically, computer-aided training, CET differs from other conventional types of training-orientated cognitive rehabilitation programs in that the discrete training modules in CET are highly integrated in terms of administration of training session schedules, and because CET primarily focuses on social cognition as the primary vehicle through which all aspects of cognition are effectively improved. This focus on social cognition is not only supported by published research in the central importance of social cognition in the remediation of the diminished cognitive response in severe neuropsychological disorders but no less on basic logic and common observation that absolutely demands such a focus.

Except for the very rare incidences of hermit life within the human population, humankind lives in a social environment, a society, consisting of specific cultural and social norms and structures, even if that society is limited to immediate family. Survival depends on the skills to negotiate social interaction and the demands of whatever society that constitutes the environment that one must interact with to meet the basic requirements of life. Beyond pure physical survival, the human being is a psychologically complex being that requires some interaction with other human beings to meet basic psychological needs. We are defined as individuals, as unique personalities, by the psychological needs unique to each individual, and the unique manner by which each individual interacts with society (that is, with other humans within culturally determined rules and norms) to meet those needs. We are social animals and the way we interact socially defines who we are as unique individuals, that is, who each of us is as a distinct person that is distinguished from every other person now living, that ever lived, or ever will live. Our personality, our uniqueness as an individual, is manifested through, by and within social consciousness; i.e., social cognition.

To the extent that social cognition is impaired, we lose some of who we are as unique personalities and the greater the impairment, the more of who we are is lost. In a critical study, Brooks and McKinlay (1983) clearly documented that the major distress experienced by the kith and kin (referring to one's closest inner circle of personal relationships) of brain

injured patients was not so much a concern over the residual neurocognitive deficits, but the heartbreak of what was perceived as a “personality change” -- the loss of the person, the specific qualities that kith and kin had known so well in the injured person that were missing in the aftermath of the injury. The individual that they had known so well, though still there in person, and perhaps even physically vibrant, the special ingredients that uniquely characterized that person were paradoxically not there. Santoro and Spiers (1994) defined this change as a decrement in *social cognitive* construction.

In acquired social cognitive impairment, depending on its severity, some extent of the spontaneity of charm, humor, gregariousness, enthusiasm, and wit that characterized a unique personality is no longer recognizable in the person, the loved one that kith and ken had known so well. In developmental social cognitive impairment, that spontaneity of charm, humor, gregariousness, enthusiasm, wit, and range of affective response and certain intellectual skills have not properly developed, and depending on the severity of impairment, the personality is to some extent “unfinished,” the individual “incomplete.”

In both acquired and developmental social cognitive impairment, depending upon the severity of impairment, the individual is to some extent a shell missing some portion of the full spark of inner psychosocial vitality and the true essence or potential of the individual's unique identity. The remediation of deficits in social cognition addresses exactly the same problems regardless of whether impairment resulted from a developmental or acquired condition through the positive, enriched stimulation of the fundamental mechanisms inherent in the natural neuroplasticity of the brain, making CET equally suited for developmental disorders as well as acquired disorders, including the remediation of cognitive deficits in disorders along the autism spectrum. CET, in addition to its proven efficacy in schizophrenia and schizoaffective disorder, offers equal promise in efficacy of remediation of neurocognitive deficits in a broad range of both developmental and acquired conditions.

CET aims at facilitating the attainment of age-appropriate cognitive milestones that are the developmental products of social cognition. These developmental products of social cognition are not so much a smorgasbord of ‘social skills’ but rather *a way of thinking* about oneself and other people by which to intuitively know how to get along with others and wisely negotiate these relationships at home, with friends, at school, and, on the job; and by which to know how to express oneself or otherwise get the main point or “gist” of the subject of concern or immediate attention when dealing with other people and in navigating the tangles of revolving social interactions. This way of thinking normally evolves in the natural developmental process of physical and neuropsychological cognitive maturity through experience and stages of learning in the socialization and educational milieu of the everyday interaction with the social environment circumscribed within the age-appropriate demands of society.

Adult thinking, as compared to the appropriate thinking of an earlier age, is characterized by 1) “gistful” abstraction rather than concrete detailed thinking, 2) active rather than passive processing, 3) an appreciation of flexible norms compared to rigid rules of conduct, and 4) the use of spontaneous and appropriate judgement in novel social situations rather than

rehearsed responses to scripted situations (Brim 1966; Selman and Schultz 1990). Social cognition has been referred to as “social intelligence,” first described by Thorndike in 1920 as “the ability to act wisely” (cited in Taylor and Cadet 1989), and defined as the practical, tacit or crystalized intelligence that enables ordinary men and women to achieve and maintain rewarding relationships and to secure meaningful life goals (Salthouse 1987; Sternberg et al. 1995; Sternberg and Wagner 1986; Walker and Foley 1973; Taylor and Cadet 1989). It underlies what is popularly referred to as “common sense.” Social intelligence is only moderately correlated with the general intelligence measured by intelligence quotient (IQ) tests (Sternberg et al. 1995). Formal IQ largely reflects the verbal and logical skills associated with test taking. Since social intelligence, unlike IQ, is seen as developing and growing over six decades (Sternberg et al. 1995), it is this developmental process that CET aims to stimulate and energize to recover from the stalled or stunted state in developmental etiologies and to restart to regain lost ability in acquired etiologies.

In CET, perspective taking is the clinical linchpin around which other key aspects of social cognition are organized and addressed. Newman (2001) provided a most helpful review of social cognition research and its relevance to schizophrenia. Newman reminds us of the human tendency to quickly attribute stable trait characteristics to other persons, and to ignore the social context and constraints that might alter these first impressions. This well-established tendency is known as “correspondence bias,” and is particularly common among patients with schizophrenia who might lack the interest, mental stamina and motivation to pursue information about social context. This may also commonly be observed in patients in autism spectrum disorders (ASD), which share similar symptomatology with the negative symptoms of schizophrenia. Memory of past interactions with others and an awareness of how one has previously responded, especially when a change in behavior is indicated, are also crucial for correct social cognition (Newman 2001).

Another crucial aspect is affect, which has long been recognized as a vital component of social cognition, though most researchers, not only in schizophrenia, but in ASD and other disorders in which neuropsychological cognitive functions have been disturbed, have focused on the ability to judge affect in the other person. This focus is inherently misguided for two fundamental reasons: 1) it is not possible for the cognitively impaired individual to fully understand affect in another if the impaired individual is lacking in affect, as affect itself, especially appropriate affect, would be foreign, not experienced, unknown and simply not understandable from other than the most superficial level if the impaired individual her/himself was incapable of her/his own appropriate spontaneous affective response; and 2) it is precisely one’s own emotional state that influences the perception of another’s emotional state and determines the selection and processing of personally relevant social information. The regulation of affect is pivotal to the formation and maintenance of social relationships. Affect informs and directs reasoning, such that “emotional intelligence” has now been recognized as an integral component of social cognition (Mayer, Salovey and Caruso 2004). The reduced, blunted or poorly regulated affect often seen in schizophrenia and in ASD, could understandably contribute to profound social cognitive deficits. Social cognition is further developed through group interaction, particularly through the formation of a shared understanding regarding common themes (Newman 2001), and it is group social cognition sessions that form the venue through which deficits in social cognition are specifically targeted in CET through an emphasis on perspective taking.

The main principle of this emphasis is recognition of the need of the ability to go beyond rapid, spontaneous first impressions to the thoughtful appraisal of social contexts and circumstances that better explain another person's thinking, feeling and behavior. Social context appraisal can also transcend individual behavior and extend to the culturally transmitted "norms" of small and large groups. Failures in societal perspective taking could be thought of as a loss of common sense (Stanghellini 2000). Perspective taking and the related social context appraisal, appreciation of one's own and another's affect, reflection on past interpersonal experiences, and development of a shared understanding, are the major areas of learning that constitute the CET program. In every group exercise, homework, and feedback experience, participants are encouraged to think abstractly about one or more of these concepts. CET is essentially a learning program whereby learning is self-defined from within each participant through the experience of group interaction, and self- and social reflection, that effectively energizes or restarts the inherent developmental process of social cognition needed to acquire the cognitive competencies that support a personally meaningful and rewarding life. In CET the participant learns to THINK AND FEEL as opposed to simply learning MECHANICAL ACTION.

Since social cognition is unequivocally demonstrated to be the vessel by which healthy individuality may grow in formation of the whole person by interacting with the social environment in an appropriate manner, and constitutes the central avenue by which we are defined as who we are, social cognition must be the central core through which the remediation of all neuropsychological cognitive impairment is addressed, and, since social cognition, like all other proposed discrete areas of neuropsychological cognition, are in truth, composed of various interactions with each other, CET uses specific training modules addressing so-called discrete neurocognitive functions that overlap and reinforce each other, all processed through, and integrated within, areas of social cognition.

### **Program Curriculum**

***Computer-aided cognitive training.*** The CET curriculum consists of graduated computer-aided training using attention, memory and problem-solving software. These software exercises are coupled with social cognition group sessions. As stated above the emphasis of CET is on social interaction and the group dynamic, and even the software exercises are conducted within a socially interactive environment. For the software exercises this environment is established by a buddy system, in which the participants are grouped in pairs with the software exercises executed within a three-way interactive dialogue between the paired participants and a clinician coach. The computer serves as the medium for participant socialization and the provision of support and as an aid and stimulus in identifying and resolving cognitive deficits demonstrated in the performance of the exercises. The computer exercises then, while focusing on specific tasks, are always part of a dialogue, and while building skills by repetition and gradual increments in difficulty as task scores reach progressive stages of achievement, the computer exercises occur within, and become part of, a social exchange so that all skills and each so-called discrete neurocognitive function are exercised and integrated within an overall arena of social cognition, by which social cognition is stimulated and developed through incidental (or implicit) learning.

The CET computer training is conducted on a weekly basis, generally consisting of a total of 60 hours, with each single session one hour in duration. This is a general guideline and, depending on the severity of cognitive deficits, some participants will require less or more sessions and shorter or longer sessions. In the CET clinical trial studies, each computer training session was limited to a single pair of participants; in real world applications it might be more cost-effective to train in a group of 3 or 4 pairs. The CET computer training consists of three exercises from Dr Ben-Yishay's Orientation Remediation Module developed at the highly renowned New York University Rusk Institute of Rehabilitative Medicine Brain Injury Day Treatment Program, New York, NY, USA (Ben-Yishay, Piasetsky and Rattok 1985), focusing on vigilance, selective attention, the ability to shift between auditory and visual modalities and rapid decision-making.

These attention-training exercises are followed by training in seven memory routines and then by training in six problem-solving exercises, both from the neurocognitive training system developed by Dr. Odie Bracy, Neuroscience Center of Indianapolis, Indianapolis, Indiana, USA. The Bracy computer-aided cognitive rehabilitation programs developed at the Neuroscience Center of Indianapolis are the single most widely adopted computer-based intervention exercises for cognitive dysfunction in a wide variety of medical disorders in hospitals, rehabilitation centers and clinics across the United States. In addition to developing skills in the cognitive areas of attention, memory and problem solving, and stimulating the development of social cognition, the CET computer training exercises build mental stamina, the lack of mental stamina one of the major roadblocks to the rehabilitation of cognitive impairment in many types of disorders, most notably schizophrenia, major depression, severe ASD, dementia and in brain injury.

***Social cognition group sessions.*** The social cognition group program consists of a highly structured but never didactic or pedantic learning environment by which social consciousness is internalized through education, instruction and feedback from homework, reflection, discussion, observation, and participation in the group dynamic, its formalized and unsaid rules and expectations and the consideration of the perspective of the other in the group interrelationships in the naturally evolving bonding and identification with the group and the individual connections forged with its fellow members.

The structured group environment provides a socializing experience in a nurturing, supportive, reassuring atmosphere in which anxiety and pressure to perform/participate and conform is minimized through a gentle orientation to the group process and a growing sense of belonging to, and identifying with, the group. In being included and expected to equally contribute her/his own thoughts and perceptions to every part of the group process as an integral member of the group, each member begins to understand that every member of the group, including her/himself, is critical to the group, without which the group dynamic is substantively changed. Any sense of pressure or anxiety of fully participating in the group is gradually eliminated as each member visualizes her/himself as part of the working group, and her or his input and participation is not distinct from the group and not judged by it or its rules, but rather an inextricable component of the group, its process and its unique dynamic.

Though instructionally based, with guided rules of participation, the structured learning environment of the CET social cognition group program does not indoctrinate or impose a rigid prescription of social behavior, but sets an example of social decorum through which sensitivity to, and understanding of, social context, perspective taking and affective engagement takes place, whereby the basic tenets of social behavior may be gleaned, generalized and logically applied to the myriad contexts of real-world social interaction. In the group process the trainee practices verbalizing and expressing clear thinking and observes and learns from the other group members who variously succeed or fail in their responses or assignments. Trainees are rewarded for their successes and supported and encouraged when struggling. The group experience provides a nonthreatening venue to acquire and strengthen basic abilities essential for the development of social cognition, such as how to make and complete an intelligible statement, how to ask questions or give one's opinion appropriately and sensitively, how to agree and tactfully disagree, and how to become an active and attentive listener. All group activities are designed to 1) keep members focused on a task; 2) instruct and reinforce how to use language in a socially appropriate and relevant manner; 3) instruct and reinforce how to give and receive constructive feedback about how a member performs a designated activity; 4) instruct and reinforce how to best utilize and benefit from interactive coaching; and 5) instruct and reinforce how to tailor one's performance to the particular nature or characteristics of a given audience and/or situation.

Through the group process a trainee practices giving support and acting empathetically and understanding someone else's feelings in different situations (i.e. perspective taking) within the "living theatre" of the group with its different members, personalities and problems — learning through instruction, experiences, interacting, cooperation, teamwork, feedback, discussions and exchanges of opinions, and the freeing up and development of one's own affective responsiveness and thinking through situations and contexts; learning not by strict rules, rote memory or conditioned behavior, but by the natural "incidental" or implicit learning that characterizes the learning acquired by the experiences of living a normal life in the real world without the real-world threats and chaos that overwhelm those with cognitive deficits.

The CET social cognition group consists of 6 to 8 group members. The program outline that follows is based on a 6-member group. The CET social cognition group program is composed of 45 1.5 hour sessions, one session per week. The sessions are numbered sequentially and divided into 3 modules: a) module I -- basic concepts; b) module II -- social cognition; and c) module III -- CET applications. Though module II is identified as a "social cognition" module, the CET social cognition group program is inherently a program of social cognition development and reinforcement, with all three modules devoted to developing and reinforcing social cognition; module I providing the fundamental concepts of CET and its focus on social cognition, module III directed toward the application of social cognitive skills in different aspects of social interaction, and module II concentrating on the discrete processes that constitute social cognition per se. The sessions of the CET social cognition group program described herein are numbered in ascending numerical order corresponding to level of difficulty, from lowest to highest, and should be presented in order. Sessions 1, 2 and 3, which provide a basic orientation to CET, social cognition and the group structure and process, *must* be presented at the beginning of the program in

sequential order. Though the general program is composed of 45 sessions, two additional less-structured sessions may be appended to the program if deemed needed to clear up any points that remain problematic for any member.

Each of the three CET social cognition group program modules are composed of a set of sessions, each session identified by number and by psychoeducation topic and exercise theme, as follows:

## Module 1

### Basic Concepts

(Psychoeducation topic/Exercise theme)

- Session 1 Orientation to CET
- Session 2 Understanding one's disorder or disability/Initial recovery plans #1
- Session 3 Components of CET/Initial recovery plans #2
- Session 4 Internal coping — signals of distress/Categorization #1
- Session 5 Internal coping — modifying stress/Categorization #2
- Session 6 Getting motivated/Categorization #3
- Session 7 Regulating your emotions/Categorization #4
- Session 8 The gist/Sound bite #1
- Session 9 Memory/Sound bite #2
- Session 10 Cognitive flexibility/Sound bite #3
- Session 11 Quiz #1/Sound bite #4

## Module 2

### Social Cognition

(Psychoeducation topic/Exercise theme)

- Session 12 Overview of social cognition/Introduce yourself #1
- Session 13 Social context appraisal/Introduce yourself #2
- Session 14 Perspective taking/Introduce yourself #3
- Session 15 Emotional temperature taking/Introduce yourself #4
- Session 16 Non-verbal cues/Introduce yourself #5
- Session 17 Listening and giving support/Introduce yourself #6
- Session 18 Elaborated and unelaborated speech/Introduce yourself (optional)
- Session 19 Motivational account/Dragnet and Columbo #1
- Session 20 Responding to a valid criticism/Dragnet and Columbo #2
- Session 21 Responding to an invalid criticism/Dragnet and Columbo #3
- Session 22 Expressing criticism/Dragnet and Columbo #4
- Session 23 Self-defeating thinking/Condensed message #1
- Session 24 How to change self-defeating thinking/Condensed message #2
- Session 25 Consequences of self-defeating thinking I/Condensed message #3
- Session 26 Consequences of self-defeating thinking II/Condensed message #4
- Session 27 Quiz/Interim recovery plans

## Module 3

### CET Applications

(Psychoeducation topic/Exercise theme)

Session 28 Interim recovery plans

Session 29 Common social dilemmas/Using CET to help a friend #1

Session 30 Adjustment to disability/Using CET to help a friend #2

Session 31 Managing your disability/Using CET to help a friend #3

Session 32 What is still missing in your life?/Using CET to help a friend #4

Session 33 Initiating conversation/Initiating and maintaining conversation #1

Session 34 Vocational effectiveness/Initiating and maintaining conversation #2

Session 35 CET and relationships/Initiating and maintaining conversation #3

Session 36 Choosing an environment/Initiating and maintaining conversation #4

Session 37 Generalization — the transfer of learning/Introduce a friend #1

Session 38 Obstacles to implementing CET/Introduce a friend #2

Session 39 Transitions/Introduce a friend #3

Session 40 Play #1 — office politics/Introduce a friend #4

Session 41 Play #1 — office politics (continued)/Introduce a friend #5

Session 42 Play #2 — hidden agenda/Introduce a friend #6

Session 43 Begin final recovery plans

Session 44 Final quiz

Session 45 CET topic presentations

Except for sessions 1, 2 and 3, which provide an introduction and orientation to the CET concepts and the group structure, the CET social cognition group sessions follow a standardized format that includes the following components:

1) “Welcome back” opening presentation reviewing the previous session, introducing the agenda for the day, and selecting a group member to be the “chairperson” for the day’s session.

2) Homework presentation by each group member with questioning by the coaches to foster deeper perspectives and wider implications on the points covered in the homework assignment.

3) An assigned exercise (from one of 8 themes) that (with the exception of the “introduce yourself” and “introduce a friend” exercises) involves at least 2 group members. Feedback on the performance of the exercise is provided from all the members not participating in the exercise, and from the coaches, the feedback concerning the elements of thinking, emotion and teamwork as related to the exercise and the extent of adherence to the coaching instructions provided during the performance of the exercise.

4) A psychoeducation talk with summary handouts provided for each group member for reference.

5) Homework assignment for the next session based on the day’s psychoeducation talk. Each group member’s recovery plan (consisting of goal, problem and strategies for problem resolution) is displayed on an individual poster board, and, whenever possible,

coaching instructions and feedback take into consideration each individual's recovery plan, explaining how the coaching instructions and feedback may be relevant to the specific goal, problem and strategies of each plan. Exceptional among cognitive remediation modalities, in CET each group participant is fully responsible for the development of her or his own recovery plan.

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638-2 Keyakidai, Eiheiji-cho

Yoshida-gun, Fukui 910-1223

Japan

Ph: +81-776-63-2290

Mobile: +81-80-5855-6639

email: [casn@brain-mind-behavior.org](mailto:casn@brain-mind-behavior.org)