The Social Brain In Clinical Practice

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What is ‘social brain’?

- Concept of the “social brain” evokes a brain evolved in the selective pressures of social group living
- Each person shows complex propensities to work in social settings
  - As during childhood relationships
  - Continually shaped by social experiences
Social Brain Description

- A growing body of research and theoretical thinking\(^1,2\) supports this view of the brain as
  - substrate of evolutionary
  - developmental
  - continuing life-long social interactions
  - embedded in an evolving cultural environment

- This presentation bears on clinical psychiatry & treatment
Medical specialties & organs

- Medical specialties organized by organ systems
- Brain is psychiatrists’ organ of interest
  - Griesinger’s famously stated:
    - ‘Mental illnesses are illnesses of the brain’
- Psychiatrists need
  - Knowledge of brain anatomy & physiology
  - Molecular biology of info processing relevant
Brain = Interacting Organ

- But brain not a closed system
  - Anatomy and physiology make sense
  - If brain seen as interactive with setting
- We propose primary focus of psychiatry as social brain\(^4,5\)
  - i.e. brain part of human social environment
Other animals

- Psychiatry refers to people but social brain concept includes non-human animals
- A broader biological definition holds the social brain as “the brain in interaction with conspecifics”
  - Conspecifics = members of the same species
- Brains of all animals mediate their social and reproductive lives
No brain part unsocial in fx

- Can’t separate out a brain part or system *not* figuring in social interaction
  - i.e., the motor system’s body posture → great communicative impact for other people

- Perspective differs from conceptions that represent the “social brain” as a subset
  - e.g. SB = what’s impaired in autism
    - Communicational impairments typify the condition
    - Such = fine tunings
  - Conception in these collected papers reflects a more general view
Parts of Presentation

- Review relevance of perspective for
  - Psychiatric disorders
  - Psychiatric treatments
  - Developing integrated, etiological models of psychiatric conditions

- We illustrate more elaborately how the concept of the social brain helps clinical practice, using depression to exemplify
Organization

- SB & Psychiatric disorders
- Psychiatric treatments
- Developing integrated, etiological models of psychiatric conditions
- SB with depression
Psychiatric conditions = disturbances of SB

- Social doings of past structure brains
  - Both evolutionary & personal pasts
  - Seems elaborately designed to mediate social functioning.
  - Conducts ongoing interpretations of social situation & responds to these
  - Influences the environment & alters the input it receives
Disorders = Social disorders

- Dysfunctions: socially maladaptive cognitive-emotional interpretations & behaviors
- Psychiatric sx: social discourse
  - Disruptions of conduct disorder
  - Interpersonal alienation of schizophrenia
  - Interactions of personality disordered people
  - Substance abuser abandons norms & responsibilities
Symptoms have social context

- Sx communicational significance relates to social adaptation.
  - Despair may signal social appeasement
  - Manic patients express superiority & social dominance\(^7,8,9\)
Sx depend on context

- Sx = pathological communications
  - pathological because they do not fit with patient's reality

- In other social contexts messages adaptive
  - not only as normal parts of interaction
  - but as positive features of social behavior
Communication

- Social context may elicit sx communication even if inappropriate
  - Statements, postures & actions communicate in patients
  - People with depression & mania communicate accordingly
  - Their meanings relevant for other people in environment
Patient communications

- Doctors should react to common meanings of patients’ verbal & nonverbal messages
  - Not merely disregard them as signs of pathology
  - They do not merely arise as pathology
    - Like Athena’s magical birth from Zeus’ head
Intrapsychic in fact social

- Sx typically traced to intra-psychic processes
  - To events in the patient’s ‘inner life’.
- But inner life from/grows through relationships
  - Identity/ego develop as others define the person
  - ‘Id’ = adaptive social impulses for sex, status, & attachment
  - ‘Super ego’ = internalized social norms.
  - Personality traits = patterns of social perception, expectation & behavior
  - Hermit’s actions, thoughts & feelings relate to internalized other people
Integration

- Social brain integrates personal, social, & organ-cell biology
  - ‘Mental life’ conjures unbridgeable chasm
    - Between ‘biological’ & ‘psychology’
    - This chasm pervaded 20th century psychiatry & related disciplines
    - Yet lost plausibility with research advances on each level
Brain-body interface & SB

- Disorders reflect disturbances between brain & social environment but does not imply that etiology lies exclusively there
  - Hypothyroidism, strokes, drugs at the brain-body interface
- Since social interactions form the organ, sx of disorders possess interactional meanings with relational repercussions
Psychiatric tx treats SB

- Psychiatric symptoms disturb social life.
  - Healing patient interacting with the social environment primary goal of treatment

- The organ that interprets the social environment & responds to it helped therapeutically through different channels
  - One strategy uses chemistry
  - This changes how the patient perceives social reality & acts in it
Other strategies

- Psychotherapy affects social brain *via* verbal engagement
  - Or alters input from family or other social networks
- Tx for medical condition, e.g., hypothyroidism
  - Even with such ‘etiological’ treatment, personal assistance may help relationships damaged in illness
Brain site of therapy operation

- ‘Somatic’ treatments may target specific sub-cortical areas
- Psychotherapy may work primarily through prefrontal cortex
- Yet the brain levels interconnect to form an integrated whole with the rest of the body as well as with the social environment\textsuperscript{10,11}
Dominance & blood serotonin

- Primate research illustrates interface of brain physiology & sociality:
  - Dominant animals in groups of caged male & female vervet monkeys
    - have much higher whole blood serotonin
    - when they receive submissive signals from other males in the cage
    - However, if one administers a serotonin-affecting antidepressant (fluoxetine) to a lower ranking male, he assumes dominance\(^{12}\)
Usefulness of primate finding

- This links normal brain physiology with social behavior
  - Provides ‘language’ for discussing depression with patient
  - Suggests how social role $\rightarrow$ molecular change & vice versa
  - Provides rationale for pharmacological & psychotherapeutic treatment
  - Guides patient’s ideas about recovery as well as side effects
Implication

- If SSRI user behaves more assertively & dominantly
  - He or she will likely elicit countervailing responses from others
- Relationships may need re-negotiation or treatment modification
Asset of Social Brain Concept

- Facilitates discussion between doctor & patient
- To trust in & commit to a treatment plan
  - Establish a shared understanding of the problem
  - Why a particular treatment proposed
SB Benefits

- Learning carries a different more positive meaning if in terms of normal brain physiology & its social expression
  - Better than labeling disorder as ‘chemical imbalance’
  - ‘Chemical imbalance’ vague & devoid of scientific meaning
    - May incite idiosyncratic anti-therapeutic fantasies
      - What imbalance have might come from?
      - What does it imply?
Therapeutic alliance

- Psychiatry recognized that social interaction influences mental symptoms
  - Doctor-patient relationship can enhance or undermine even the most ‘biological’ treatment\textsuperscript{13}
    - Extraordinary placebo effect shows this\textsuperscript{14}
- An essential practitioner attribute
  - Involves skill in establishing ‘rapport’ &
  - Forming a ‘therapeutic alliance’ with the patient
- Psychiatrists must demonstrate proficiency in this skill to gain Psychiatry Board certification
Psychiatry & adaptations for living in social groups

- Biologist D’Arcy Thompson 100 years ago:
  - “Everything is the way it is because it became that way”

- Ontologically for any one individual
  - But idea spans evolutionary time also
Psychiatry & adaptations for living in social groups

- Ancestors bequeathed their characteristics
  - Genomic inheritance stretches back to earliest living entities

- Concept of social brain
  - Derives from the idea of human brain evolution
  - Resulted from living in social groups,
  - Led to symbolic language &
  - Cultural environment
    - To which humans both create & adjust
Bowlby’s ethology

- Bowlby’s work ancestral to SB point of view
  - Infants possess innate propensities to seek & maintain proximity to a caregiver
  - Infant behavior elicits specific parental responses in the adult
    - In turn takes shape from these responses
  - Attachment pattern
    - Shows flexibility & may change with experience
    - Yet it remains stable over the life span
    - Structures one’s subsequent social relations,
      - Intimate partnerships to
      - The doctor-patient relationship
Human propensities I

- Bowlby’s way of thinking valuable for psychiatric practice
- With SB idea we propose widening this ethological focus
- Indeed, other social propensities qualify equally as adaptations to social group living.\textsuperscript{20,21}
Human propensities II

- Humans form alliances with others throughout life
  - Tend to adjust to existing social rank orders, and to insert into new ones

- They desire to pursue sexual encounters
  - They long to reproduce, to bring up children, and
  - To assist others in the raising of their children
Human propensities III

- Humans care for relatives & other people in need
- They identify with an in-group (family & religious, national, ethnic or other groups)
- They exclude out-group people
  - Humans of other families, especially those belonging to different religious, national or ethnic groups.
Human propensities IV

- Out-group members often demonized & treated with contempt or fear.
  - Even nonhumans: consider skunks, rats & weeds
- Personal territory sensed on many levels
  - Body buffer zone (point where another’s approach uncomfortable)
  - Possessions and resources
  - Even to areas of expertise (one’s ‘turf’ )
Main social brain arguments

- Construct of social brain suggests a research agenda directly bearing on clinical practice
- This agenda addresses the full range of social propensities
  - May model after modern attachment research
Clinical Application: Evaluating Depression

- To exemplify usefulness of social brain perspective in practice,
- we turn to a common clinical task:

- Conducting the initial interview of a patient with major depressive disorder
Psychiatrist = social brain doctor

- One establishes ‘rapport’ in interview
- Illness History includes 4 Ps:
  1. Predisposing factors
     - Family history, early childhood, etc
  2. Precipitating factors
     - Stressful events & life situation
  3. Perpetuating factors
  4. Protective factors
     - Support structure, strengths & weaknesses
Social brain & interview:

- Facilitates considering dynamic interplay amongst 4Ps
- Reflects way of thinking
  - Wherein brain/environment system parsed
  - Into social interactions at different levels of organization.
- A unifying perspective guides the interview
  - Case formulation at end involves more causal links amongst factors
    - *Not* a formulation of a diagnosis & list of intervening factors
Social brain & interview:

- *Explains* the patient’s condition
  - Tentative & hypothetical
  - Yet coherent and etiological

- Formulation flows from idea
  - That psychiatric problems reflect disturbances of social interaction
  - That “are the way they are because they became that way”,
    - Takes on structure of a “story”
    - Stories ← a causal structure
Relationship Attunement

- Facilitates relationship with patient
- Implies psychiatric interview itself changes patient’s brain
  - Maximizes healing influence
  - Minimizes risk of ‘illness-perpetuating’ experience
  - Represents essential task of psychiatrist.
- Prime importance: deliberate pursuit of a therapeutic alliance with the patient
Social brain emphasizes

- Unity of nature & nurture
- Focuses on interactions\(^2\)
- And relationships amongst people
  - Removes clinician from tunnel vision trap
    - Either centering on intra-psychic dynamics
    - Or biochemical processes in isolation
Pursuing explanatory story in depression

- Psychiatric examination reviews presenting complaint & depressed mood
- When exploring depressive phenomena,
  - Interviewer attends to how patient’s experience of social connections
  - And how social environment responds to the patient’s depressive expressions
Social loss in depression

- Depressed patients generally feel a deep social loss
  - Some lost a relationship with a most painful void remaining
  - Others express primarily an inability to care and to love
  - Or a lack of capacity to assert oneself or influence others
  - May feel isolated, excluded, not belonging to a social group
Social loss in depression

- Depressed patients experience failure in all basic patterns of social interaction
  - failures of attachment, desire, status/respect, resources/belonging.

- He or she expresses defeat
  - Communicates submission & appeasement in relation to others
  - Is important for course of illness
Variability of presentation

- Social loss & submissive communications typify depressed patients
- But clinical presentation endlessly varies:
  - Sometimes perception of social situation appears ‘psychotic’ – out of touch with reality –
  - At other times it reflects real losses & adversities that one easily relates to the depressed feeling.
Variability of presentation

- Deep depressions may paralyze
- Others show anxious agitation,
- While still others hide behind smiles & routines
- Finally, some depressions are chronic and persistent and others limited to distinct time periods.
Variability of presentation

☐ Constructing an explanatory story for each unique clinical presentation
  ■ Requires psychiatrist to explore the differential ‘weight’ of various interacting etiological & contributing factors

☐ The following cases exemplify how S B thinking and reasoning helps develop explanatory hypotheses
Case I Canary Bird Died

- A woman developed melancholia,
  - With severe psychomotor retardation,
  - After the death of her pet canary bird.
  - We could find no reason to think of a general medical condition or environmental chemicals
- Furthermore, this was fifth episode of major depression
Case I Canary Bird Died

- Discrepancy between the nature of the loss and the depth of her depression indicates
- That situational stressor of losing a pet had less etiological ‘weight’
- Than a natural predisposition toward depression
Case I Canary Bird Died

- Thus, canary’s death triggered the condition,
- Perhaps eliciting factor or
  - Did it signify deeper problem of social attachment?
  - No evidence showed how the attachment system might have been negatively affected by trauma or neglect during childhood
  - But family history showed many mood disorders
- This depression therefore considered
  - A recurrent, genetically inherited, medical disease
Case I Canary Bird Died

- Nevertheless, more to the case than a ‘medical disease’
- When depressed the patient communicated total defeat, despair and submission
Case I Canary Bird Died

- How had her social environment, and especially her husband, reacted to such messages?
  - Tried to refute & counter-act patient’s position
    - Tried to cheer her up with extra affection
    - But when this failed he resented her stubborn self-devaluation
    - Did not express direct anger & resentment
    - Instead, distanced & withdrew
Case I Canary Bird Died

- Consequently, whenever the patient depressed, this elicited withdrawal of her relational partner,
  - Increased her sense of social loss
  - Escalated her depression
  - Potentially countered effects of treatment
- In summary, this patient’s story evokes an image of a social brain disturbance,
  - Probably influenced by a familial inherited condition
  - A “minor” social loss triggered massive depression, aggravated by husband’s withdrawal response
Case II. Important Losses

- Man in his early forties → serious depression 1\textsuperscript{st} time in his life
- After a series of losses
  - Fired from job
  - Father died unexpectedly
  - Teenage son disappeared & remained missing
Case II. Important Losses

- He showed
  - Not ‘Adjustment reaction with depressed mood’, but
  - Full-blown major depression.
- Clinician should think how situational factors
  - Impacted a social brain
  - Vulnerable to depression
    - From an (epi)genetic fragility or
    - Secondary to difficult attachment interactions in early life
- A case formulation with these elements
  - proposed treatment with both psychotherapy & medication
Case III Chronic Moodiness

- Young adult woman with a major depression
  - Her description: exacerbated chronic despair & ‘moodiness’
- Early childhood social interactions
  - Severely physically abused – both parents
Case III Chronic Moodiness

- Research shows that such experiences influence later depression
  - They alter the levels of serotonin
  - Plus other neurotransmitters in the social brain.\(^{24}\)

- Depression after abuse influenced the social brain during formative years:
  - Research show psychotherapy outweighs antidepressant medication as treatment of choice\(^{25}\)
Case III Chronic Moodiness

- How did she herself dealt with her ‘moodiness’?
- How did her social environment respond to it?
- Children normally learn to operate in a mood-independent fashion:
  - If one has a good or a bad day, the same expectations are set for a same performance
  - This patient had learned, and had been allowed (from neglect) to live ‘mood-dependently’
Case III Chronic Moodiness

- On ‘good days’, she accomplished whatever needed to be done
- But on a bad day she stayed in bed
- Problems: staying in bed made her feel useless, guilty and socially cut off, which increased depression
Case III Chronic Moodiness

- Plus mood-dependent behavior revealed inability to ‘link’ her internal mood state with external life events
  - She wondered if what she called her ‘mood swings’
  - Indicated bipolar illness?
    - Though she never experienced even hypomania
- The mood-dependent response style →
  - ‘Perpetuating’ factor during periods of depression
  - Activation & social rhythm psychotherapy indicated

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Summary Points from Cases

- A social brain focus allows clinicians to formulate etiological hypotheses as stories of interactions over different levels of organization.

- Clinical reality should not need parsing into different, separate and even alien elements such as
  - ‘Brain’
  - Interpersonal conflicts and defense mechanisms
  - Learning
  - Attachment styles
  - Stress/diathesis characteristics and so on
Reciprocal Influencing

- The depressed patient expresses submission and defeat
  - That affect immediate family & work
  - Also trigger responses in physicians and therapists
  - Similar to those in other people,
  - Leads to comparable depressive interaction patterns

- That is, depression induces ‘counter-transference’
Initial Interview

- Initially, patient’s expression of submission and despair elicits compassion & desire to help.
- A clinician stated, “I know that a patient is depressed when I find myself ‘doing all the work’ during the session”
Initial Interview

- In chronic treatment-resistant depressions, concern → frustration
  - From patient’s ‘stubborn inflexible’ depressive communication
  - Healers may feel embarrassed by own hostile response
  - Some over-compensate & show extra compassion with intensified efforts to help
Initial Interview

- Others retreat from patient (as well as from the frustration)
  - Take neutral businesslike professional role
  - Focus only on medication management, for instance

- Regardless of specific therapist response, it affects patient’s social brain & course of illness
Initial Interview Affects SB

- So concretely diagnostic interview alters patient’s brain ‘for better or for worse’:
  - By its end the patient may
    - Step towards healing or
    - Retreated further into illness
  - Conversation should make positive impact
Initial Interview Affects SB

- Some psychiatrists adhere to an ‘objective, scientific-medical model’
  - Define role in terms of observing & gathering ‘data’ without affecting the patient²⁷
  - Though they may wish not to recognize it, they also influence patient’s brain
  - Whether influence positive or negative depends on patient’s subjective interpretation of communicative behavior
Interpretation of Illness

- Doctor & patient need to reach consensus about illness and its causes
  - Socio-cultural schemas pervasively influence the formulation
- Here highlight value of establishing a therapeutic alliance
- ‘Psychotherapy of the initial psychiatric interview’ follows
The Story of the Illness

- What ‘image’ the patient uses for the illness experience holds importance\textsuperscript{28}
  - Humans feel compelling need to ‘make sense’ of the world
    - Construct explanatory interpretations
    - Conscious experience involves causal attributions
The Story of the Illness

- Each patient enters a doctor’s office with at least some hypothesis
  - About what problem is
  - Where it came from and
  - What sort of help to expect;
- Each patient leaves the office with some re-consideration of hypothesis
Doctor Role in Initial interview

- Psychiatrist collects information and constructs an internal story of understanding then summarized in the formulation.
- A treatment plan appears to be rational and to make sense when it is congruent with the story of understanding.
Core Therapeutic Task of Initial Interview

- Patient and the family *must* construct some ‘story’ about what the problem is and where it came from.
  - The story organizes help-seeking and illness behavior

- Treatment prescription not adhered to if does not fit with patient understanding
Core Therapeutic Task of Initial Interview

- On the other hand, with patient and psychiatrist agreement, the proposed treatment plan likely inspires confidence & adherence

- Negotiating such agreement:
  - Core psychotherapeutic task of initial psychiatric interview\(^2^9\)
Building Common Understanding

- How does patient & psychiatrist build their common story?
  - Patient’s story may be idiosyncratic
  - Psychiatrist’s ideas from clinical knowledge

- Yet both share cultural ‘schemas’ about illness & mental illness
  - That play roles in diagnostic process
Schemas of Illness

- Western culture makes distinction:
  - Mental disorders as *medical diseases* vs
  - Mental disorders as *problems of living*

- Basic schemas with implied causal attributions

- Involve social role expectations for those involved
Schemas of Illness

- Physician determines
  - Whether illness is medical or not, and
  - Treatment prescription

- Having disease accords ‘sick role’
  - Exempts the patient from social obligations
  - While requiring commitment to treatment
Schemas of Illness

- If illness due to ‘problems of living’:
  - Trapped in an impossible situation or
  - Unproductive patterns of dealing with the world

- then considered responsible for behavior
  - And must take active role to resolve issues
  - Medications may provide symptom relief
  - Real work involves counseling and psychotherapy
A ‘story of understanding’ that the psychiatrist conveys to the patient at the end of the interview will trigger one of these cultural schemas and social role expectations:

- A ‘chemical imbalance in the brain’ elicits the ‘disease’ schema
- A proposal for psychotherapy activates ‘problem of living’ schema
Which Story is This One?

- These schemas influence the behavior of patient (and family) thus changing the social brain & course of illness

- Psychiatrist should aim for a diagnostic formulation
  - That patient can agree to
  - That taps into a cultural way of thinking and behaving to foster healing & rehabilitation.
Return to Depressed Patients

- Canary died lady had melancholic depression
- Formulation weights hereditary predisposition
  - This makes her sensitive to even minor losses
- This = ‘medical disease’ schema
- But she sees her condition as an insurmountable problem of living
  - ‘Stuck’ in her story, her “personal failings” justify despair & foreclose the future
Canary died lady story

- Psychiatrists feel familiar with psychotic conditions where agreement impossible
- Can patient be ‘cajoled’ into accepting treatment?
- Here psychiatrist could try to convince the patient that the illness is primarily a ‘medical disease’
Arguments include:

“Your experience and symptoms are fully described in the psychiatric handbooks. They are present in all the people that have this disease. Therefore, they are not uniquely related to you as a person. This is a disease that you have and not something you are.”
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Canary Died Lady Story

- Plus the psychiatrist may explain
  - How it represents a disease of the social brain
  - And therefore she feels it as a failing of social connectedness
- Further, her interactions with her husband directly impact the illness
Focused psychotherapeutic interventions → social interaction and behavior

- These may at some later point help healing and prevent relapse

- If no agreement
  - The patient may need hospital commitment for safety and treatment
Important Losses-Man Story

- Negotiating a shared story with this man easier
  - Weight of multiple losses > problem
  - Very aware of need for help
- May still need to convince him
  - Major depression itself instills a sense of hopelessness and a lack of energy
  - That may respond to medications
Moodiness Woman Story

- Patient’s story of severe abuse more complex.
- First story: abuse and its concomitant biochemical changes caused a serious disturbance of the social brain,
  - This invokes a ‘disease’ metaphor.
- But her attempt to deal with the trauma and with her social environment aggravated disturbance,
  - This story implies ‘problems of living’
Moodiness Woman Story

- Psychiatrist may emphasize problems of living, i.e. her learned behaviors and dysfunctional interaction patterns.
- Indeed, overly eliciting a disease schema & the social role that goes with it risks ushering this patient toward a state of complete persistent disability.
Therapeutic Alliance

- How does psychiatrist negotiate with the patient?
  - Process not just at the end of initial interview
- Causal hypothesizing starts at the beginning of the interview
  - Psychiatrist will pay attention to areas with etiological relevance
  - Line of questioning may cue the patient to ‘disease’ or ‘problems of living’
  - Indicated: discussion of physician’s story of understanding as well as the patient’s
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Therapeutic Alliance

- Regardless of skill in arguing illness formulation
  - Suggestions credible & acceptable only in the context of a therapeutic alliance
  - Negotiating story of understanding must stem from empathic collaborative relations
Therapeutic Alliance

- Empathy relates to propensity for social attachment
  - Perhaps less a capacity for symbolic sharing than an extension of human touch
- Psychiatric empathy = interaction pattern
  - Patient self-discloses & the therapist expresses understanding, which leads to further self-disclosure
  - Skill in empathic interactions essential for psychiatric practice
Therapeutic Alliance Problems

- Patients may reject a psychiatrist’s ‘bid’ for empathic engagement. May stem from:
  - Distrust
  - Psychosis or
  - Repeated experiences of apparent empathy that then hurts or exploits
Therapeutic Alliance Problems

- Major Depression presents problems
- Inflexible despair & defeat typical
  - Continually expressed submission & appeasement
- Main psychiatric focus → establish a basic alliance
- Express empathy but do not invite empathic engagement from patient
Establishing alliance connects with a basic human social brain propensity to seek partners to deal with life

- Often easier to tap into the patient’s propensity to form alliances than propensity for empathic connection
- So alliances tend towards the practical and instrumental rather than ‘intimate’.
Therapeutic Alliance

- Psychiatrist may stress professional relation
  - May acknowledge that based on exchange of money for help
- Following of value to break down the patient’s disconnection & social isolation:
  - Basic goodwill, acceptance, caring & concern
  - Establishing self as a knowledgeable professional
  - Able to recognize the patient’s experience
Pedagogic Social Brain of JV Concludes:

- I hope that you can appreciate
  1. Focus on interaction & social relationships
  2. Clinical gains from unifying concept for biological, psychological and social phenomena
     - That facilitates etiological hypothesizing
  3. Value of therapeutic alliance
     - More pleasant desirable interview context
     - An essential vehicle to reach a shared formulation
     - to influence directly the social brain.
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