Dissociation, Trance, Mindfulness and Neuroscience

Li-Shiu Chou M.D., M.Sc

Kaohsiung Provincial Kai-Syuan Psychiatric Hospital, Kaohsiung City, Taiwan

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Outline

1. Introduction
2. Dissociation
3. Trance
4. Mindfulness
5. Conclusion
1. Introduction
2. Dissociation
3. Trance
4. Mindfulness
5. Conclusion
Pathological...

Dissociative amnesia
Pathological possession trance
Alternate identities
Some people have the experience of driving in a car and suddenly realizing that they don’t remember what has happened during all or part of the trip.

Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said.

Spacing out
Therapeutic situations…

Dissociation in practicing relaxation
Dissociation in hypnotic trance
Dissociation in mindfulness
Dissociation/Trance/Mindfulness

The same?

Similar, not the same?

Association, not the same?

Share the common mechanism?
1. Introduction
2. Dissociation
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4. Mindfulness
5. Conclusion
DEFINITION

a disruption in the usually integrated functions of consciousness, memory, identity, or perception. The disturbance may be sudden or gradual, transient or chronic (American Psychiatric Association, 2000)
<table>
<thead>
<tr>
<th>DSM-IV-TR</th>
<th>DSM-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depersonalization Disorder</td>
<td>Depersonalization/derealization Disorder</td>
</tr>
<tr>
<td>Dissociative Amnesia</td>
<td>DA (including fugue)</td>
</tr>
<tr>
<td>Dissociative Fugue Disorder</td>
<td></td>
</tr>
<tr>
<td>Dissociative Identity Disorder (DID)</td>
<td>DID (possession, be observed)</td>
</tr>
<tr>
<td>Dissociative Disorder Not Otherwise Specified</td>
<td>Other Specified Dissociative Disorder</td>
</tr>
<tr>
<td></td>
<td>Unspecified Dissociative Disorder</td>
</tr>
</tbody>
</table>
**Normative dissociation**
-- mild gap in awareness (i.e., absorption)
-- prevailing in both nonclinical and clinical population
  *(Carlson, 1994)*

**Pathological dissociation**
-- depersonalization, amnesia, and identity alternation
-- common in clinical population *(Waller et al., 1996)*
Studies of Nonclinical populations

—Freyd et al., 1998
DePrince & Freyd, 1999
Giesbrecht et al., 2004
The DES (Dissociative Experience Scale) has very good validity and reliability, and good overall psychometric properties.

―Carlson & Putnam, 1993; Carlson et al., 1993; Carlson, 1994; Carlson & Armstrong, 1994
Chinese DES

Self report
28 items
disruption in absorption, perception, memory
11-point Likert scale 0-100
Cronbach’s alpha=.94, N=1,935; 5-week test-retest reliability=.78, n=131

—Chiu, et al. 2007
這部分的測驗包含二十八個問題，而這些狀況是一些人的生活經驗。我們想知道的是在非酒精或藥物的影響下，你自己多常會有這樣的情形（頻率）。依據下列的描述，圈選出與你的個人經驗發生頻率最為符合者。

<table>
<thead>
<tr>
<th>例題</th>
<th>0%</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>從未</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>總是</td>
</tr>
</tbody>
</table>

1. 有些人有過這樣的經驗，當他們開車、搭乘公車或地鐵時，會突然發現他們無法想起路程中整段或片段發生的事情。
   圈選出這樣的情形發生在你身上的的頻率。
   | 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

2. 有些人發現，有時當他們在聽別人說話時，會突然發覺自己沒有聽到部分或全部的內容。
   圈選出這樣的情形發生在你身上的的頻率。
   | 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

3. 有些人有過這樣的經驗，發現自己身處一個地方，卻不知道他們是怎麼來到的。
   圈選出這樣的情形發生在你身上的的頻率。
   | 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |

4. 有些人有過這樣的經驗，發現他們想不起來是什麼時候穿上自己身上這身衣服。
   圈選出這樣的情形發生在你身上的的頻率。
   | 0% | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100% |
The Set Switching Function of Under Negative Emotion

Chiu CD, et al. Journal of Abnormal Psychology
2009, Vol. 118, No. 1, 214–222

- high dissociators under negative emotion showed faster switching in the perseverence condition.
- This enhanced ability to divert attention to a new mental set under negative emotion may be a coping strategy related to cognitive symptoms in dissociative disorders.
Recovered memory experience /dissociation /aversive experiences


- a significant correlation between recovered memory and dissociative symptoms; the correlation cannot be accounted for by childhood interpersonal adversity, fantasy proneness, or absorption
- **Recovered events** can be negative, neutral, or even positive
- Trauma is not necessary in relating recovered memory to dissociative symptoms
Imaging hypnotic paralysis: implications for conversion hysteria

Peter W Halligan, Bal S Athwal, David A Oakley, Richard S J Frackowiak

In a single case study with positron emission tomography (PET) functional imaging, hypnotic paralysis activated similar brain areas to those in conversion hysteria, supporting the view that hypnosis and hysteria might share common neurophysiological mechanisms.

Halligan, Peter W; Athwal, Bal S; Oakley, David A; Frackowiak, Richard S J
The Lancet; Mar 18, 2000;
Relative changes in cerebral blood flow associated with attempted movement of the hypnotically paralysed left leg

FIGURE 1. A Model of Emotional Under- and Overmodulation in PTSD

In this model, reexperiencing/hyperarousal reactivity to traumatic reminders is viewed as a form of emotion dysregulation that involves emotional undermodulation, mediated by failure of prefrontal inhibition of limbic regions. In contrast, the dissociative reactions to traumatic reminders are described as a form of emotion dysregulation that involves emotional overmodulation, mediated by midline prefrontal inhibition of the same limbic regions. Figure adapted from Hopper et al. (21). Copyright © 2007 International Society for Traumatic Stress Studies. Reprinted with permission.
1. Introduction
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TRANCE

1. Going on automatic pilot
2. Spacing out
3. Occurs naturally in daily life
4. Detached alertness
What is Hypnosis?

- Complex mental phenomenon
- a state of heightened focal concentrations and receptivity to the suggestions of another person
- a form of self hypnosis
- Re-direction of attention
- Divided consciousness
Hypnosis (Hilgard, 1977)

Focused attention vs dissociation
# Classical Hypnosis Phenomena

<table>
<thead>
<tr>
<th>1. Hallucination</th>
<th>6. Automatic behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>- positive</td>
<td>- automatic writing</td>
</tr>
<tr>
<td>- negative</td>
<td>- automatic drawing</td>
</tr>
<tr>
<td>2. Anesthesia</td>
<td>7. Time distortion</td>
</tr>
<tr>
<td>3. Analgesia</td>
<td>8. Amnesia</td>
</tr>
<tr>
<td>5. Ideomotor behaviors</td>
<td>10. Age regression</td>
</tr>
</tbody>
</table>
AN INVESTIGATION OF TAIWANESE NORMS FOR THE STANFORD HYPNOTIC SUSCEPTIBILITY SCALE: FORM C (MANDARIN CHINESE TRANSLATION)

Jeremy BR. 2012. The International Journal of Clinical and Experimental Hypnosis. 60(2);160-174
The Stanford Hypnotic Susceptibility Scale, Form C (SHSS: C; Weitzenhoffer & Hilgard, 1962) is widely cited as the measure of choice in hypnosis research.

Sheehan & McConkey, 1982; Perry, Nadon, & Button, 1992; Bowers, 1993; Kurtz & Strube, 1996; Lamas, del Valle-Inclan, Blanc, & Diaz, 1996; Register & Kihlstrom, 1998; Naring, Roelofs, & Hoogduin, 2001; ...
The SHSS:C has been adapted and normed in several countries

Spain (Lamas et al., 1996)
Italy (De Pascalis, Bellusci, & Russo, 2000)
Germany (Bongartz, 2000)
Holland (Näring et al., 2001)
Mexico (Sánchez-Armáss O, & Barabasz A, 2005)
Taiwanese (Roak JB, 2012)
Stanford Hypnotic Susceptibility Scale (SHSS), Form C

1. Hand lowering
2. Moving hands apart
3. Mosquito hallucination
4. Taste hallucination
5. Arm rigidity
6. Dream
7. Age regression
8. Arm immobilization
9. Anosmia
10. Auditory hallucination
11. Negative visual hallucination
12. Posthypnotic amnesia
Fig. 1. PET activation during encoding and retrieval of high-imagery word-pairs. Hypnosis condition: (a) encoding (hypnosis), (b) retrieval (waking state).

Waking condition: (c) encoding (waking state), (d) retrieval (waking state). Ulrike Halsband, Journal of Physiology-Paris 99(2006)470-482
1. Introduction
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Mindfulness

Introspective awareness
Positive thinking
Zen

........
Mindfulness

the awareness that emerges through paying attention on purpose, In the present moment, and nonjudgmentally, to thing as they are

—Williams, Teasdale, Segal, and Kabat-Zinn (2007)
Mindfulness

A new wave of cognitive-behaviour therapy or a core process in all psychotherapies?

—Stein DJ et al., CNS Spectr (13:9) 752-756, Sep 2008
The "Action " mode
(driven-doing)

The "Being "Mode
(accepting and allowing)
<table>
<thead>
<tr>
<th>Classical Mindfulness</th>
<th>Modern Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>attention and introspective awareness</td>
<td>attention and acceptance</td>
</tr>
<tr>
<td>goal oriented</td>
<td>without goals</td>
</tr>
<tr>
<td>process and phase-oriented</td>
<td>not phase and process oriented</td>
</tr>
<tr>
<td>Perceptual in nature</td>
<td>cognitive in nature</td>
</tr>
<tr>
<td>present, past and future experiences</td>
<td>present moment experiences</td>
</tr>
<tr>
<td>attention and awareness training based</td>
<td>not necessarily training based</td>
</tr>
<tr>
<td>attention and awareness are differentiating states</td>
<td>attention and awareness are not differentiating states</td>
</tr>
<tr>
<td>Free of preconceptions</td>
<td>value based</td>
</tr>
</tbody>
</table>

Self Hypnosis

"THE BETTY ERICKSON SPECIAL"

Sit in a comfortable chair with your feet flat on the floor. Find a spot above eye level upon which to rest your eyes. Soft focus and take in the whole room. Try to keep your eyes open for a while anyway. At some point your eyes will naturally close. Just let it happen when it does.

Complete the sentence with observations in each of the three prime modalities, Visual, Auditory and Kinesthetic (tactile sensations, e.g.: air temperature, textures, etc.)

Note: While it’s optimal to observe different things, in the audio realm it is OK to repeat items if necessary - like if you are in a very quiet room and all you hear is one or two things. Remember that silence can be heard too.

1. "I am now aware that I see ________." (Repeat 4 times, 4 different visual observations)

2. "I am now aware that I hear ________." (Repeat with 4 different auditory observations)

3. "I am now aware that I feel ________." (Repeat with 4 different kinesthetic observations)

1. "I am now aware that I see ________." (Repeat 3x, visual)

2. "I am now aware that I hear ________." (Repeat 3x, auditory)

3. "I am now aware that I feel ________." (Repeat 3x, kinesthetic)
Hayes and Wilson (2003) noted that, “... mindfulness is treated sometimes as a technique, sometimes as a more general method or collection of techniques, sometimes as a psychological process that can produce outcomes, and sometimes as an outcome in and of itself”.

This statement would be equally valid if we replaced the word *mindfulness* with the word *hypnosis*.

a hypnotic induction to facilitate mindfulness and to motivate mindfulness practice

Figure 2. To illustrate the neural activations positively associated with mindfulness during the affect labeling > gender labeling contrast, we highlight the effects found in the MPFC, right VLPFC, and VMPFC. In the upper left panel (A), arrows indicate activation in MPFC, right VLPFC (RVLPFC), and VMPFC. Surrounding this pictorial representation, scatterplots indicate neural activation in (B) MPFC, (C) right VLPFC, and (D) VMPFC, as a function of mindfulness.

Figure 3. In the top panel, bilateral amygdala activation that was negatively associated with mindfulness in the affect labeling > gender labeling contrast viewed in an axial (A) and coronal (B) slice.

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Conclusion

1. Dissociation could be non-pathological or therapeutic
2. Dissociation and hypnotic trance might share the common neurophysiological mechanism
3. Mindfulness and Hypnosis share similar phenomena (decentering)
4. Hypnotic induction could facilitate mindfulness
5. The association between dissociation, trance and mindfulness deserves further investigation