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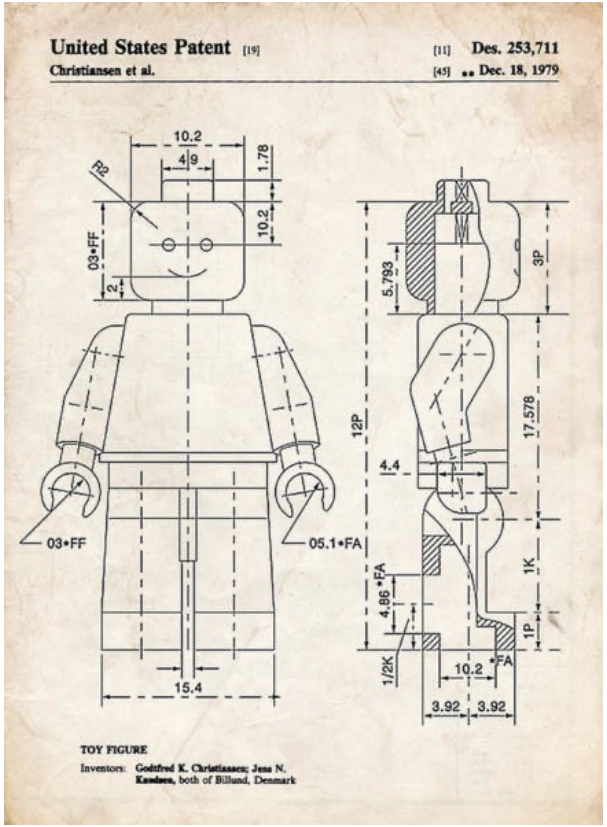
Wissenschaftstheorie & Einführung in das wissenschaftliche Arbeiten

Kurze Geschichte der Psychologie II: Modelle des Menschen

Dr. Blazej Baczkowski (Błażej Bączkowski)

Modelle des Menschen

- das psychodynamische Modell (psychodynamic approach)
- das behavioristische Modell (behaviourism)
- das kognitive Modell (cognitivism)
- (das biopsychologische Modell)
- (das humanistische Modell)



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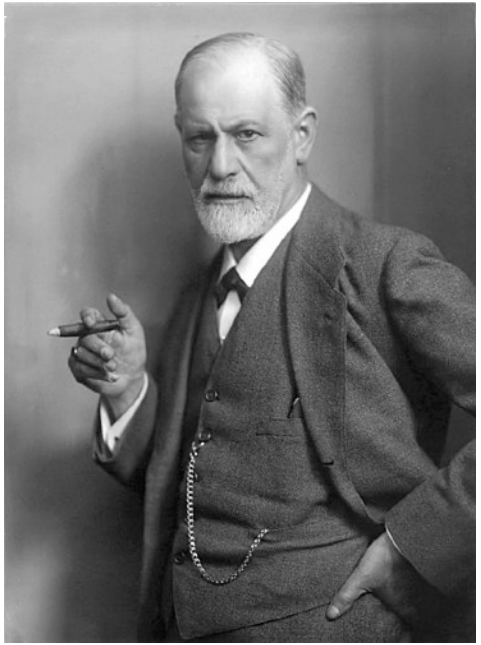
Das psychodynamische Modell (psychodynamics)

The origin — psychoanalysis

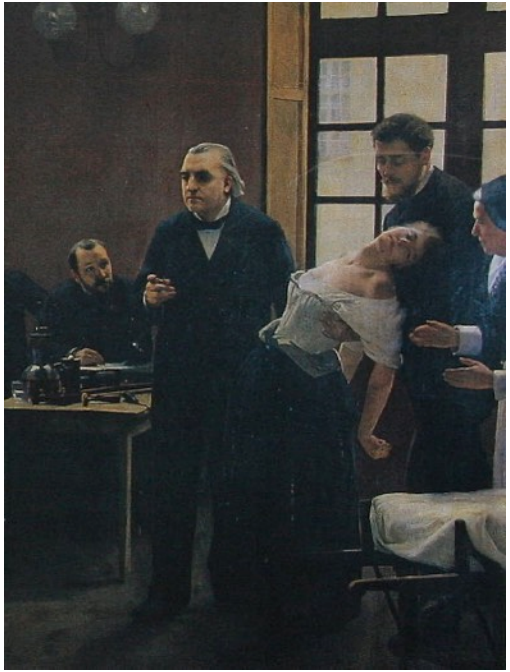
- medical doctor (neurologist) and lecturer (neuropathology)
- initially interested in aphasia
- learned hypnosis from Charcot
- but in clinical practice used hypnosis without suggestion & later free talking (method of “free associations”)
- influenced by his contemporary science (“thermodynamics” -> “psychodynamics”)
  - “forces” (drive), “mental energy” (total energy is constant), “emotional discharge” (catharsis)
- treated mainly patients with hysteria and neurosis



Sigmund Freud (1856 - 1939)

“Hysteria” / somatic symptom disorder (conversion)

- especially female patients (19th century / Victorian era)
- “emotionally charged behaviour that seems excessive and out of control”
- physical symptoms (historically):
  - blindness
  - loss of sensations
  - paralysis
  - epileptic-like seizures
  - spasming muscles



André Brouillet: A Clinical Lesson at the Salpêtrière

Über den psychischen Mechanismus hysterischer Phänomene

- the relationship between the somatic symptom and its cause is symbolic
- traumatic event leads to strong affect that cannot be released through conscious-related process because the event is kept outside consciousness
- repression — defence mechanism; “force” that prevents unacceptable content to enter consciousness
  - drives / desires lead to anxiety; to regulate anxiety, the desire is repressed
- treatment: make the unconscious conscious (verbalise the affect)

I. Ueber den psychischen Mechanismus hysterischer Phänomene.[1]

(Vorläufige Mittheilung.)

Von Dr. Josef Breuer und Dr. Sigm. Freud in Wien.

I.

Angeregt durch eine zufällige Beobachtung forschen wir seit einer Reihe von Jahren bei den verschiedensten Formen und Symptomen der Hysterie nach der Veranlassung, dem Vorgange, welcher das betreffende Phänomen zum ersten Mal, oft vor vielen Jahren, hervorgerufen hat. In der grossen Mehrzahl der Fälle gelingt es nicht, durch das einfache, wenn auch noch so eingehende Krankenexamen, diesen Ausgangspunkt klarzustellen, theilweise, weil es sich oft um Erlebnisse handelt, deren Besprechung den Kranken unangenehm ist, hauptsächlich aber, weil sie sich wirklich nicht daran erinnern, oft den ursächlichen Zusammenhang des veranlassenden Vorganges und des pathologischen Phänomens nicht ahnen. Meistens ist es nöthig, die Kranken zu hypnotisiren und in der Hypnose die Erinnerungen jener Zeit, wo das Symptom zum ersten Male auftrat, wachzurufen; dann gelingt es, jenen Zusammenhang auf's Deutlichste und Ueberzeugendste darzulegen.

Diese Methode der Untersuchung hat uns in einer grossen Zahl von Fällen Resultate ergeben, die in theoretischer wie in praktischer Hinsicht werthvoll erscheinen.

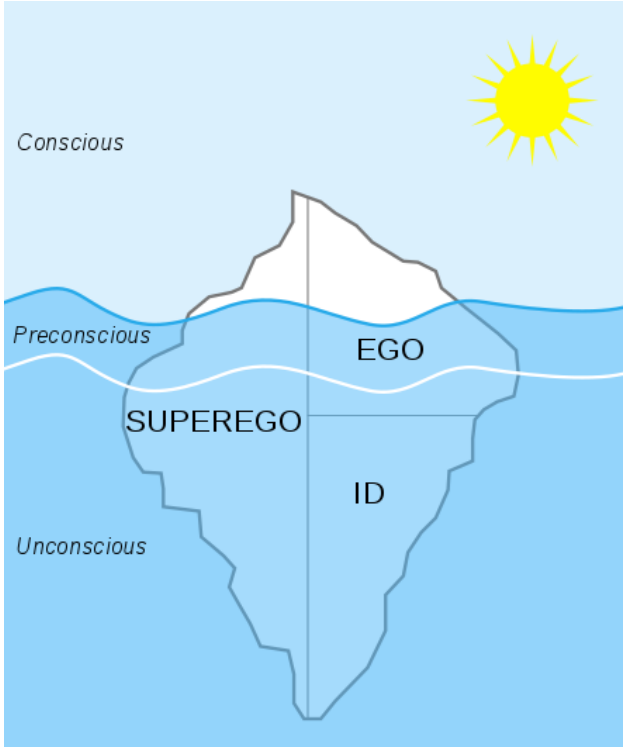
In theoretischer Hinsicht, weil sie uns bewiesen haben, dass das accidentelle Moment weit über das bekannte und anerkannte Maass hinaus bestimmend ist für die Pathologie der Hysterie. Dass es bei „traumatischer“ Hysterie der Unfall ist, welcher das Syndrom hervorgerufen hat, ist ja selbstverständlich, und wenn bei hysterischen Anfällen aus den Aeusserungen der Kranken zu entnehmen ist, dass sie in jedem Anfall immer wieder denselben Vorgang halluciniren, der die erste Attake hervorgerufen hat, so liegt auch hier der ursächliche Zusammenhang klar zu Tage. Dunkler ist der Sachverhalt bei den anderen Phänomenen.

[1] Wiederabdruck aus dem „Neurologischen Centralblatt“, 1893, Nr. 1 u. 2.

Breuer u. Freud, Studien. 1

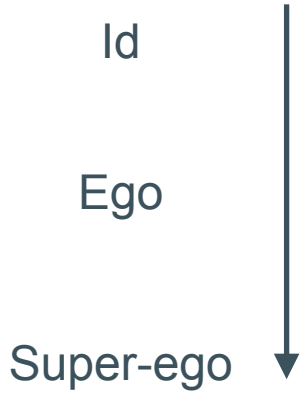
Freud’s structural model of the psyche

- Id (“Es”):
  - Lustprinzip (pleasure principle)
- Ego (“Ich”):
  - Realitätsprinzip (reality principle)
- Super-ego (“Über-ich”)



Psychosexual development
— anxiety “topics” / towards the imaginary

1. Birth: general sense of tension (helplessness)
2. Oral: anxiety about loosing the object of love
3. Anal: anxiety about loosing the object’s love
4. Phallic: anxiety about being hurt
5. Post-phallic: anxiety about super-ego censorship



Basic tenets

- The unconscious comprises mental processes that are inaccessible and uncontrollable by consciousness but influence our behaviour (determinism)
- Our behaviour as adults is rooted in our childhood “experiences” (psychosexual development)
- Internal / Intrapsychic conflicts are resolved by defence mechanisms (personality type / character)

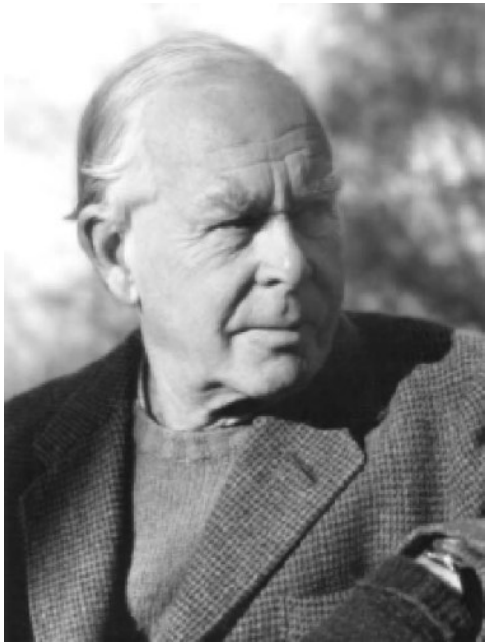
Post-freudian developments and impact on psychotherapy

- Object relations “theory”
  - relations with external people and their internal images (representations of self - objects)
- “Primitive” defence mechanisms (Klein):
  - projective identification
  - splitting
- psychotic, borderline, & neurotic personality organisation (Kernberg):
  - reality testing
  - defence mechanisms
  - identity formation
  - quality of object relations
- Transference and counter-transference
  - life issues and dynamics will re-emerge in the context of the therapeutic relationship
- techniques: free associations, interpretations, insight, confrontation, clarification

Otto Kernberg (1928 - now)

Attachment theory:
— not fantasises but the actual relation with a caregiver

- trained in psychiatry and psychoanalysis
- children respond to real life events and not to unconscious fantasies
  - against the Kleinian school of object-relations
  - ostracised by psychoanalytic community
- worked with maladapted and delinquent children
- wrote a report for WHO on the impact of maternal deprivation on the mental health of children with the conclusion that children's experiences of interpersonal relationships were crucial to their psychological development



John Bowlby (1907 - 1990)

Ethologie (Verhaltensbiologie) — the scientific foundation of attachment theory

- Ethology — the study of animal behaviour (under natural conditions) viewed as an evolutionarily adaptive trait
- developed by N. Tinbergen, K. Lorenz, K. von Frisch (Nobel Prize in 1973)
- Focus on innate instincts and behaviours
  - imprinting (Prägung)

Niko Tinbergen (left) and Konrad Lorenz

Mother-infant bond beyond nourishment — ethically controversial experiments in rhesus monkey by Harlow

- Harry Harlow (1905 - 1981) — American psychologist studying the importance of care-giving in experiments with monkeys
- experiments with inanimate surrogate mothers
  - bare-wire (bottle with food) “mother”
  - cloth-covered (no food) “mother”
- infants have a natural need for “tactile comfort” (to touch and cling for emotional support)

https://www.youtube.com/watch?v=OrNBEhzjg8I

Monkey and surrogate cloth-covered “mother”

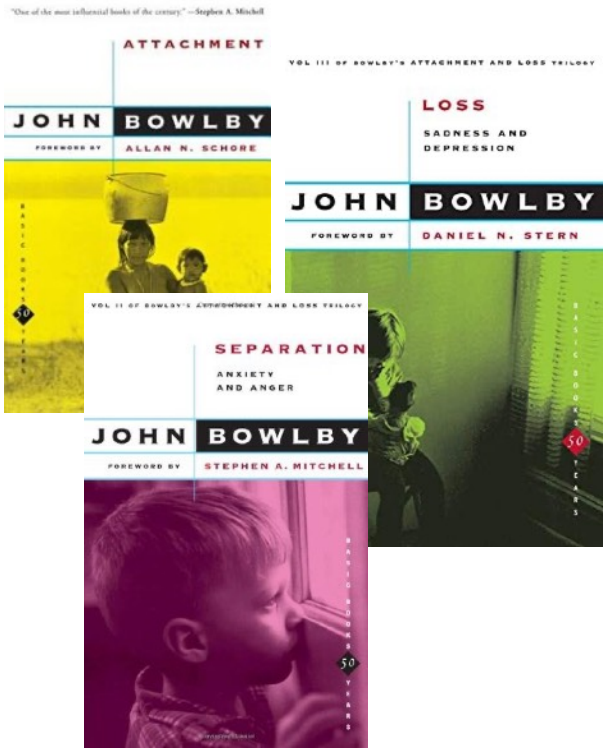
Strange situation procedure
— the empirical cornerstone of studying attachment behaviour

- the strange situation procedure
  - procedure to assess individual differences in attachment behaviour of children by evoking reactions to stress (stranger present, mother leaves)
  - testing exploration and attachment behaviours in the presence and absence of the caregiver
    - separation anxiety / stranger anxiety / reunion behaviour
- attachment styles
  - secure (“secure base”)
  - insecure (anxious-avoidant, anxious-resistant, disorganised)

Mary Ainsworth (1913 - 1999)

Attachment theory
— a unified model of human development and (early) psychopathology

- bonding (instinct) is an intrinsic human need (for survival and psychological safety)
- it regulates emotions (fear) in threatening situations (and later contributes to self-regulation)
- can be established with any consistent caregiver (it is about the quality of social interaction)
- experiences with caregivers are represented by “internal working models” of self and others (that continuously develop)
- secure attachment is the most desirable state (and is the most prevalent)



Trilogy: Attachment and Loss

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Das behavioristiche Modell (behaviourism)

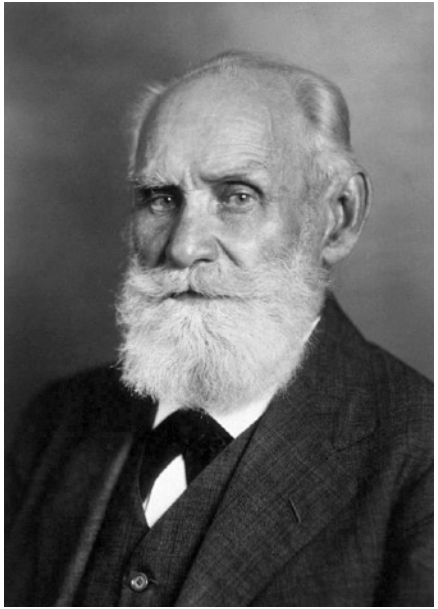
Early key observations (I) — stimulus-response learning

- first doctoral dissertation in psychology where the subjects were non-humans (cats)
- studied “escape” learning in cats using “puzzle boxes”
- stimulus is associated with a response (connectionism)
  - it is strengthened when followed by "satisfying state of affairs”
  - it is weekend when followed by "annoying state of affairs”
- major contributions:
  - trial and error learning
  - learning curves
  - law of effect

Edward Thorndike (1874 - 1949)

Early key observations (II) — stimulus-stimulus learning

- studied digestion system in dogs
- mainly properties of nervous system and involuntary reflex actions
- contributed to research on temperament (“properties of nervous system”)
- best known for the formulation of “classical conditioning” — learning process through which a neutral stimulus comes to elicit a biologically-relevant response



Ivan Pavlov (1849 - 1936)

Methodological behaviourism — logical positivism in psychology

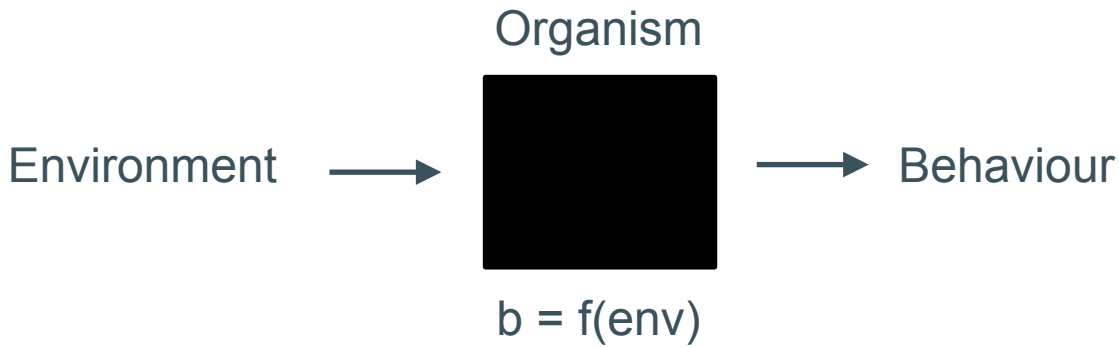
- psychology should be purely objective (“science of behaviour”); conscious experience removed
- the goal of psychology is to predict and control behaviour (instead of describe and explain conscious experience)
- there is no notable distinction between non-human and human behaviour (it’s just more complex)
- behaviour is a chain of responses

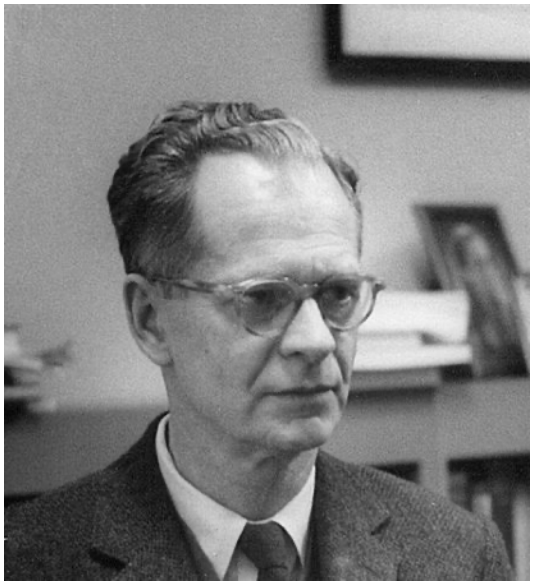
Stimulus → Response → Response → Behaviour

John B. Watson (1878 - 1958)

Radical behaviourism — include covert behaviour

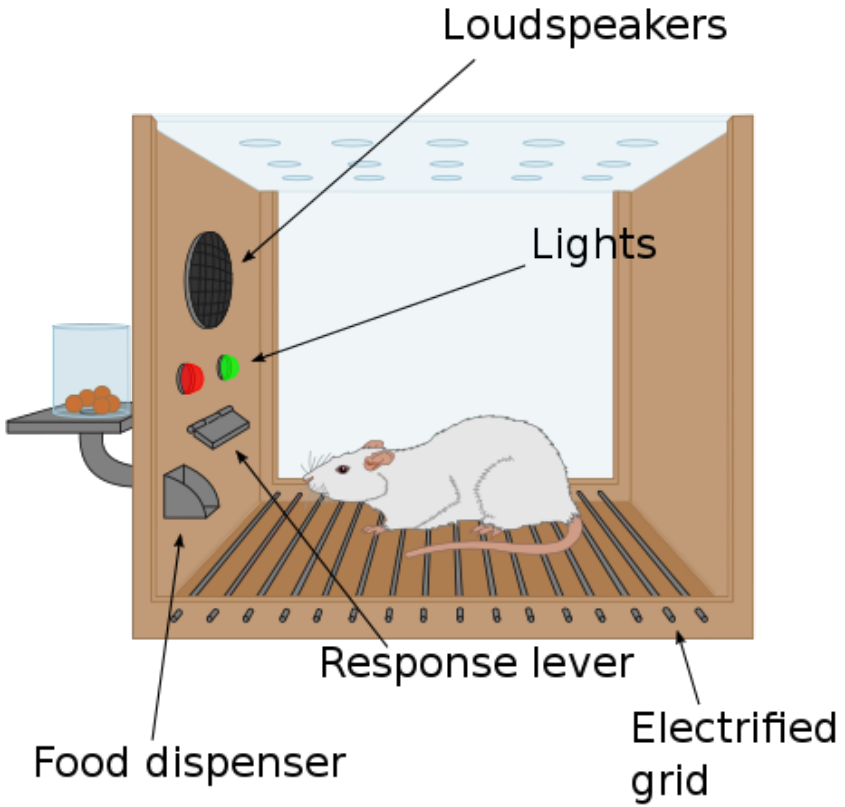
- non-physical consciousness under introspection is the observation of one's own body
- behaviour is a function of the environment
  - respondent (elicited) behaviour (Pavlov)
  - operant (emitted) behaviours (Thorndike)
- principle of reinforcement — actions depend on the consequences of previous actions (no free will)





Burrhus Skinner (1904 - 1990)

Operant conditioning chamber (a.k.a. “Skinner box”)



Modern-day behaviourism — functional approach to learning

an effect attributable to an element in the environment (implicit: behaviour is lawful)

any point during the lifetime of an organism

- Learning — “observable change in behaviour *due to* regularities in the environment” (De Houwer & Hughes, 2020)

observable response (e.g., pressing a button or saliva secretion)

- Learning depends on (and is therefore a function of) elements in the environment (*functional* is used in a mathematical sense and not in the sense of “functionality”)
- Functional approach to learning is concerned with the factors that *moderate* learning (*when* does learning occur; *not how* does learning occur) and aims to explain behaviour by its environmental causes, which are directly observable and (often) directly manipulable

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Das kognitive Modell (cognitivism)

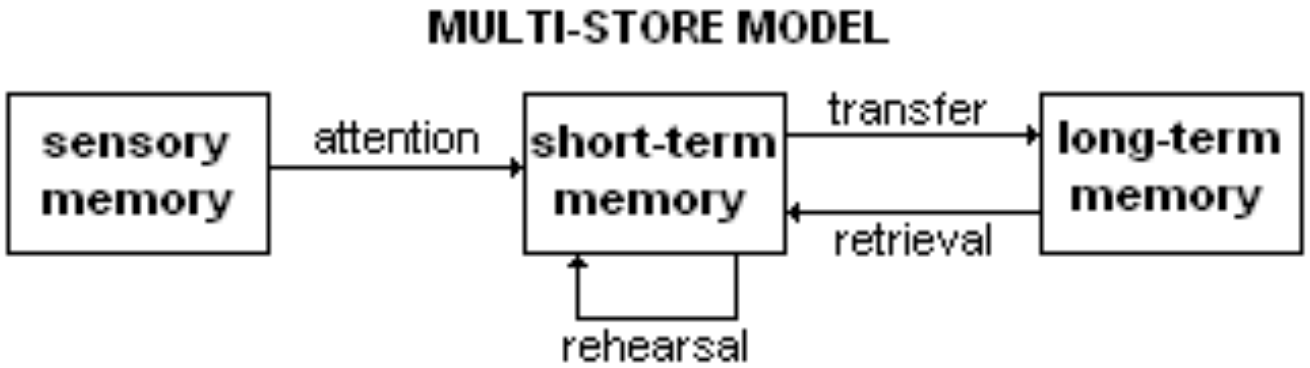
“Cognitive revolution” — information processing paradigm (a.k.a. “computer metaphor”)

- 1940s
  - development of electronic computers
- 1950s
  - Symposium on Information Theory at MIT
  - *“The Magical Number Seven, Plus or Minus Two”* (Miller, 1956)
- 1960s
  - emergence of the term “cognitive psychology”
  - strong financial support
  - *“Cognitive Psychology”* (Neisser, 1967)

about. In his classic textbook, James followed Ladd in defining psychology as “the description and explanation of states of consciousness.” By the time I began the study of psychology, the definition had changed. Psychology was “the science of behavior.” Today our definition has changed again; psychology is returning to consciousness. The current edition of Hilgard, Atkinson, and Atkinson (1975) defines psychology as, “the science that studies behavior and mental processes.” Professor Fraisse, in his Presidential Address to the International Congress of Psychology in July 1976, suggested that with the contemporary dominance of cognitive approaches we can now return to the even more classical definition of psychology as “the science of the psyche.”

McKeachie (1976). Psychology in America's bicentennial year

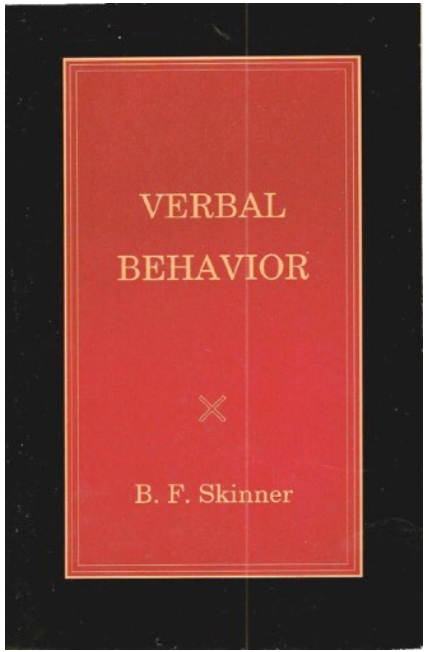
“Cognitive revolution” — information processing paradigm (a.k.a. “computer metaphor”)



Atkinson & Shiffrin’s (1968) model of memory

Chomsky's critique on Skinner's book — "A Review of B. F. Skinner's Verbal Behavior" in Language, 35, No. 1 (1959), 26-58.

- functional analysis of verbal behaviour (mainly theoretical) that is traditionally called linguistics
- verbal behaviour is the behaviour that is reinforced by the mediation of a listener
- Chomsky's critique:
  - children acquire first language without being explicitly "taught"
  - people can understand and speak sentences they never heard before



Skinner (1957). Verbal Behaviour

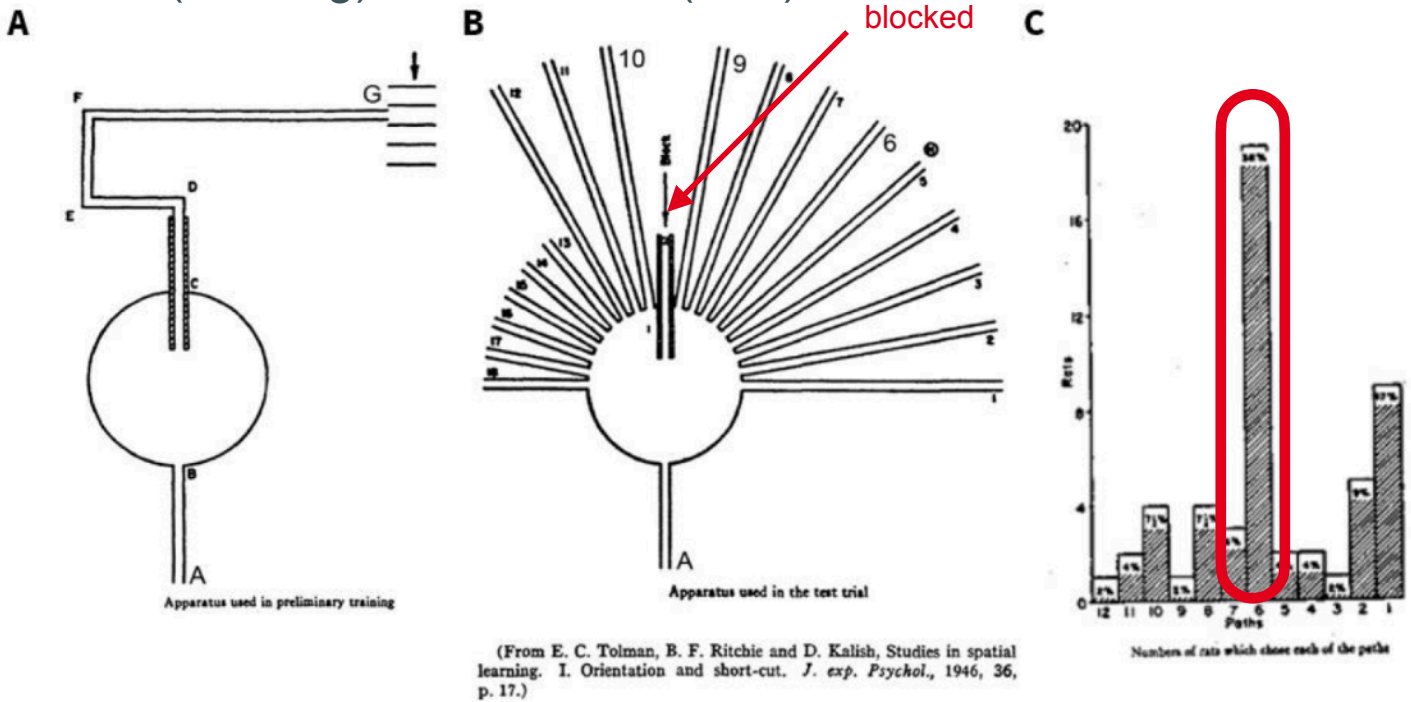
Latent learning — beyond reinforcement

- studied learning in rats using mazes
- behaviourist but a non-reinforcement theorist
  - animals can learn more than automatic responses (stimulus-stimulus learning)
- promoted the concept of “latent learning” — learning environmental contingencies without reinforcement

Edward Tolman (1886 - 1959)

Cognitive map

Time 1 (learning) Time 2 (Test) Results



(From E. C. Tolman, B. F. Ritchie and D. Kalish, Studies in spatial learning. I. Orientation and short-cut. *J. exp. Psychol.*, 1946, 36, p. 17.)

Tolman (1948) “Cognitive maps in rats and men”

What is “latent” in latent learning?

- Cognitive perspective:
  - mental representation formed at Time 1, which remains in memory, is the cause of the behaviour change at Time 2 (learning is storage of knowledge)
- Functional perspective:
  - “latent” is merely a descriptive label that there was a temporal gap between the occurrence of regularity and the observed change (it does not explain anything)
  - change in behaviour at Time 2 is a function of regularities experienced at Time 1
- Note: regardless of the approach, we infer that learning took place because of the observed behaviour change at Time 2

Mental mechanisms as mediators of learning

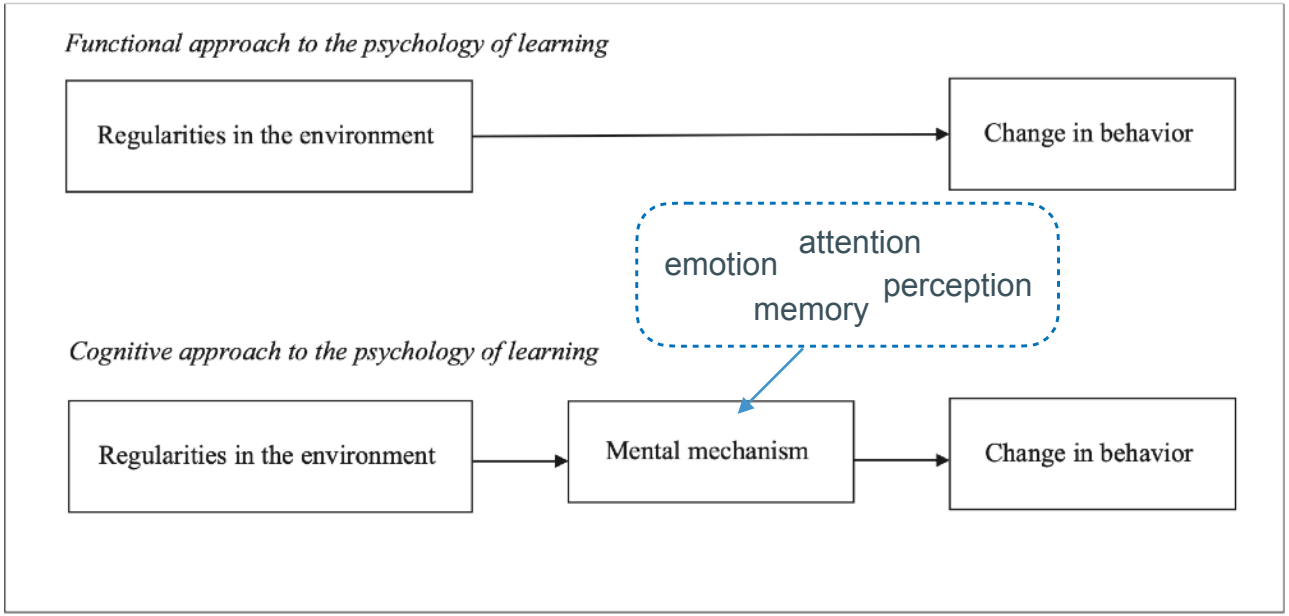


Figure 0.4
Schematic representation of the functional and cognitive approaches to the study of learning.

De Houwer & Hughes (2020)

Functional and cognitive approach

Table 0.1

The concepts that need to be explained (explanandum) and the concepts used to explain (explanans) in the functional and cognitive approaches to the psychology of learning

	Explanandum (*Concept that must be explained*)	Explanans (*Concept used to explain*)
Functional	Behavior (e.g., salivation)	Regularities in the environment (e.g., pairings of bell and food)
Cognitive	Learning (e.g., classical conditioning)	Mental processes (e.g., association formation)

De Houwer & Hughes (2020)

"The myth of cognitive revolution" (Watrin & Darwich, 2012)

- The myth: behaviourism and cognitive psychology are competitors and cognitive psychology emerged as superior
- Aspect (1): many of the critiques of behaviorism apply only to methodological and not so much to radical behaviorism
- Aspect (2): behaviourism is not extinct (e.g., present in applied and clinical psychology)
- Aspect (3): theories within functional psychology continue to emerge (e.g., relational frame theory)
- Functional and cognitive psychologists largely go their separate ways but they don't have to:
  - concepts of mental processes seems to be unavoidable
  - these concepts are useful only if they bring us closer to the goal of behaviour prediction or influence (mental processes are inferred based on behaviour)

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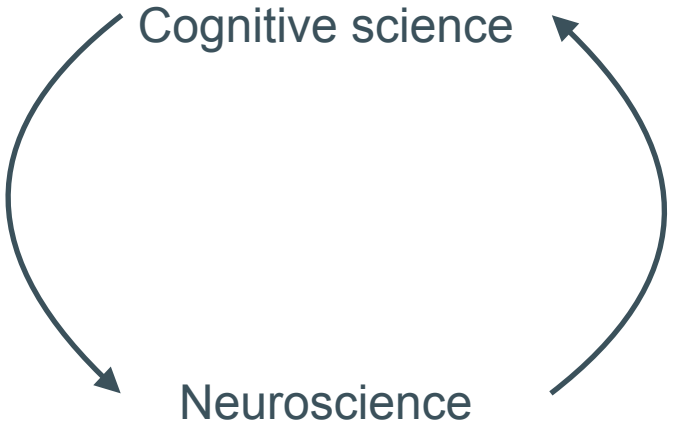
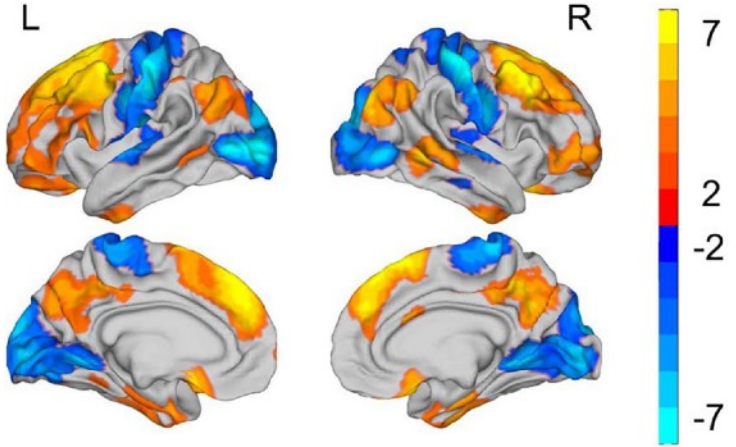
Cognitive Neuroscience

“The cognitive neuroscience revolution”



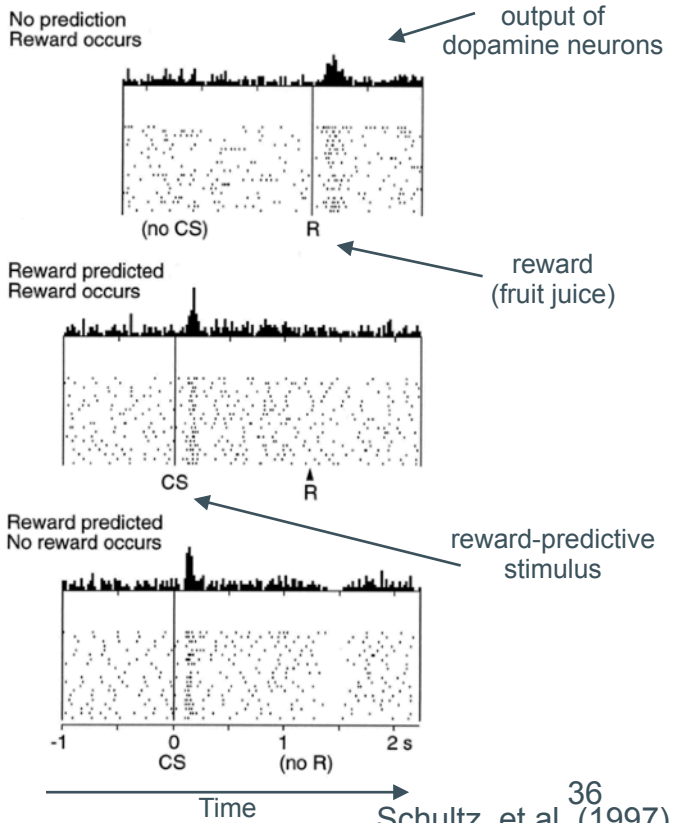


The (simplified) role of the brain in psychology

- Neural structures (brain parts) and processes (brain activity) are observable (e.g., through fMRI) and directly manipulable (e.g., through TMS)
- They can be seen as elements of the environment (e.g., how does the changes in the brain impacts the behaviour?) and as elements of behaviour (e.g., how does the brain change as a result of regularities in the environment?)
- Neural mechanistic approach: behaviour is mediated by neural mechanisms (environmental regularities influence behaviour through “neuronal links”)
- Cognitive approach: neural mechanistic approaches can be used as an input to theories of behaviour based on cognitive functions
  - this requires a strong assumption of which mental processes are carried out by which neural structures and processes
  - it is risky to make inferences about mental processes on the basis of activity at the neural level (mental representations are never directly observable)

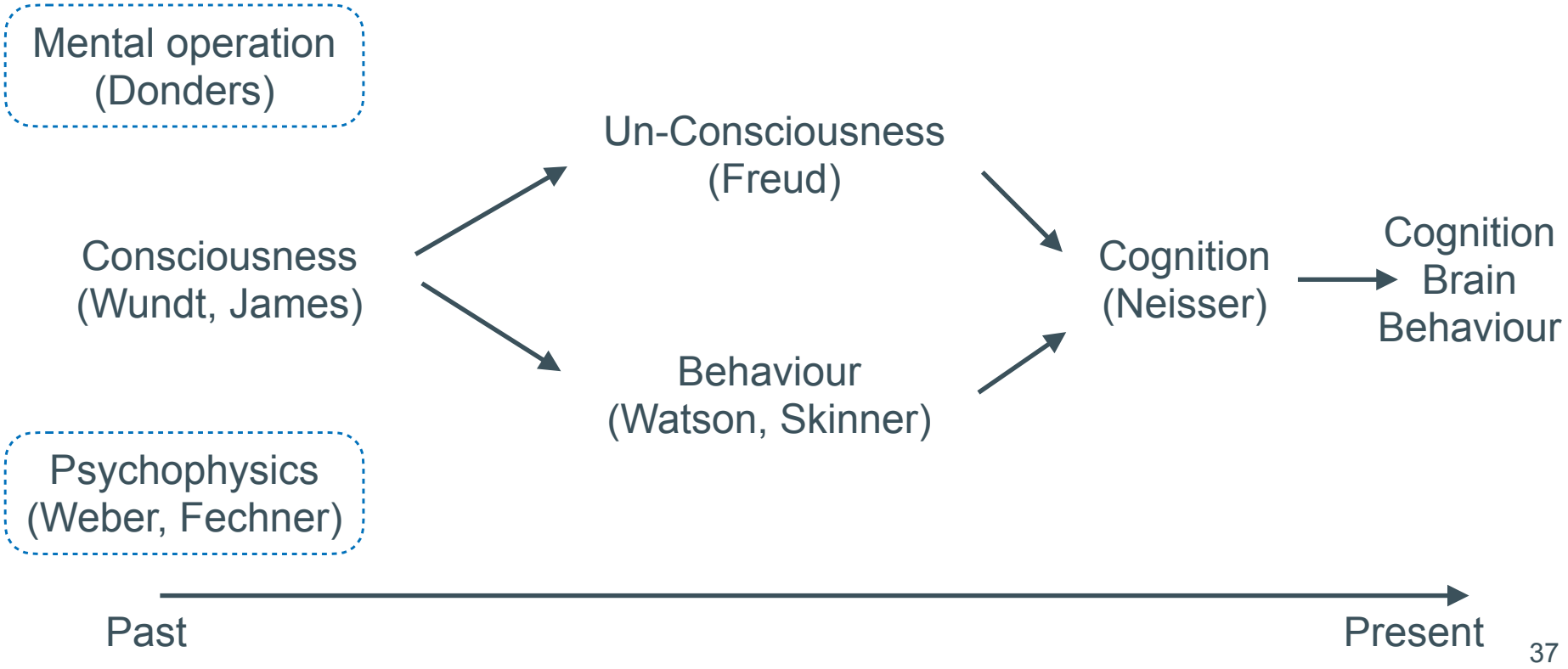
Success story
— dopamine transients function as prediction error signal

- Observation 1: dopamine neurons fire to unexpected rewards
- Observation 2: Across learning (e.g., when visual stimulus reliably predicts the occurrence of reward) the phasic signal to reward receipt disappears and appears in response to the reward-predictive stimulus
- Observation 3: Once the subject has learned the relationship between the cue and the reward, the omission of the expected reward elicits a depression in firing of these neurons at the time the reward is expected to occur
- Inference: Dopamine neurons do not encode the reward per se, but their transient bursts of activity act as the **prediction error** signal during learning



Schultz et al. (1997)

(Over-)Simplified development of psychological thought



Schlüsselwörter

- Kernideen: das psychodynamische (Freud), behavioristische (Watson, Skinner, Thorndike, Pavlov), kognitive Modell des Menschen
- core ideas: psychodynamics (Freud) / behaviourism (Watson, Skinner, Thorndike, Pavlov) / cognitivism
- Abwehrmechanismus / defence mechanism (psychoanalysis; Freud)
- Strukturmodell der Psyche / structural model of psyche (Freud); Lustprinzip / pleasure principle; Realitätsprinzip / reality principle
- Kernideen / core ideas: Die Bindungstheorie / attachment theory (Bowlby, Ainsworth); “Strange situation”
- Ethologie (Verhaltensbiologie) / Ethology;
- Harlows Experimente an Affen (Kernideen) / Harlow’s experiments in monkeys (core ideas)
- “Skinner box”
- “computer metaphor” (Kognitionspsychologie / cognitive psychology)
- latentes Lernen / latent learning (Tolman)
- funktionaler und kognitiver Ansatz für das Lernen / functional and cognitive approach to learning

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