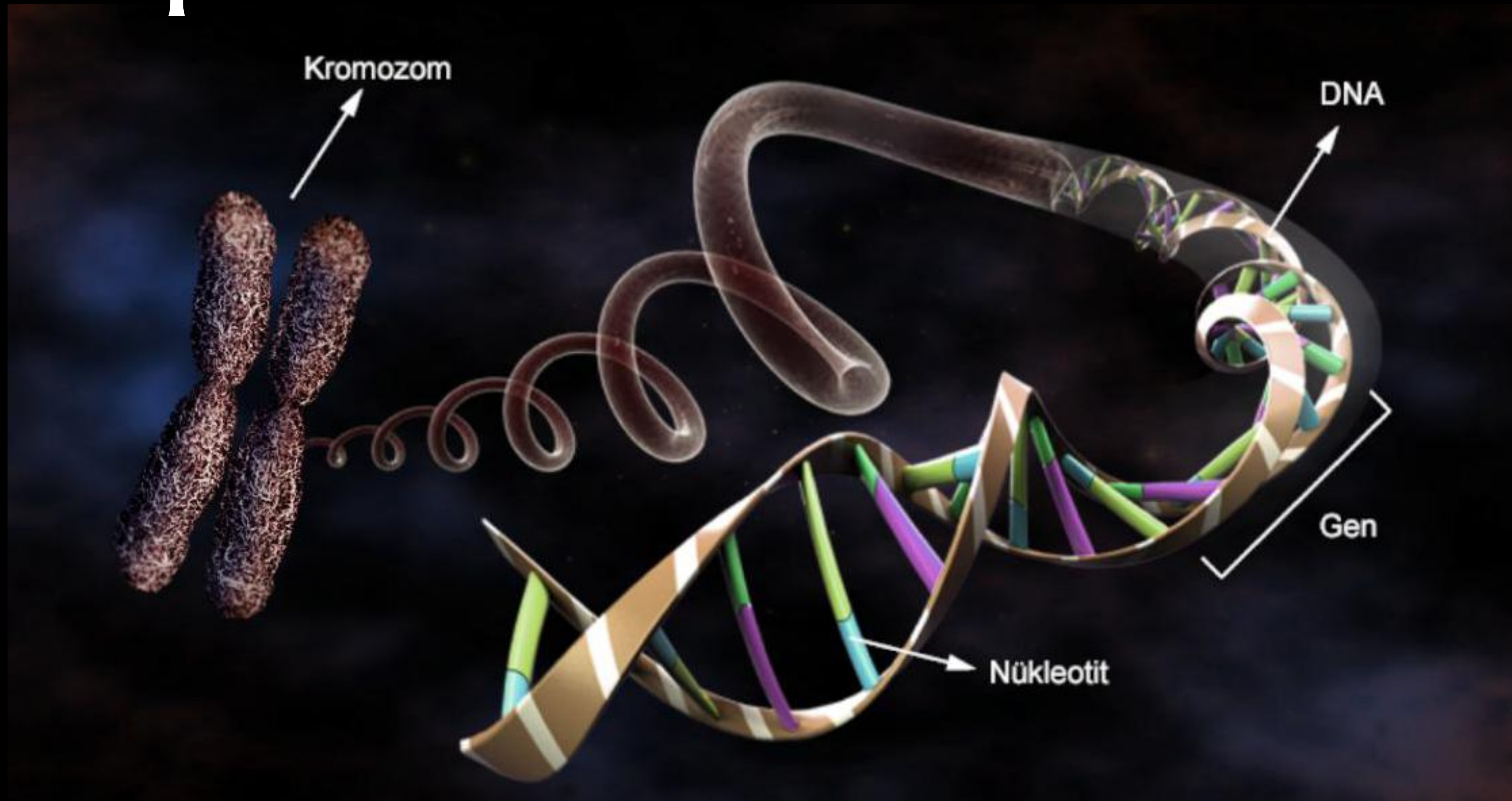


Genetikk, nevrobiologi og atferdsanalyse

Once upon a time...



Once upon a time...



12th fetal week



15 weeks



18 weeks



22 weeks



28 weeks



32 weeks



35 weeks

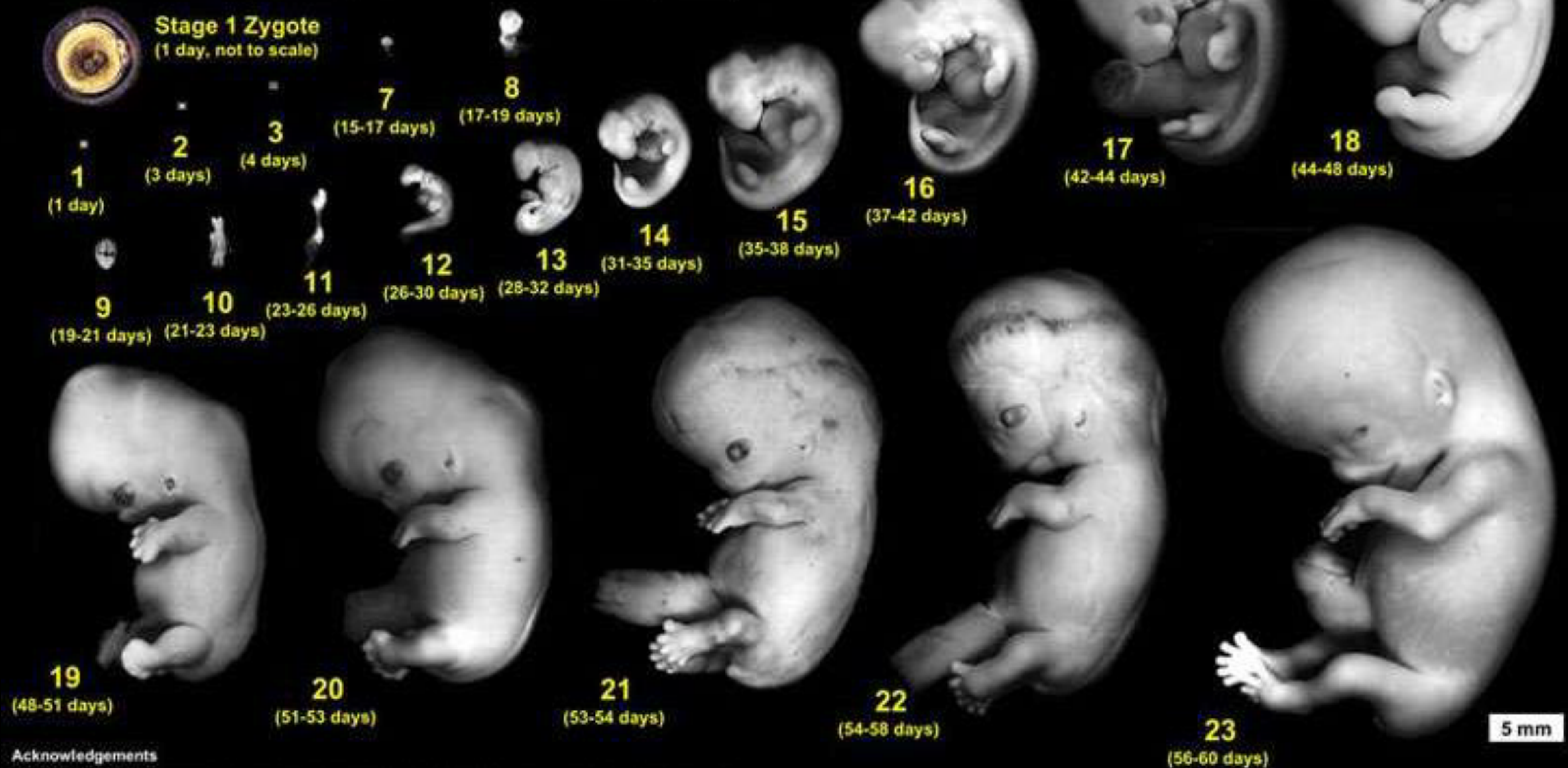


Birth

Once upon a time...

Carnegie Stages of Human Development

Dr Mark Hill, Cell Biology Lab, School of Medical Sciences (Anatomy), UNSW

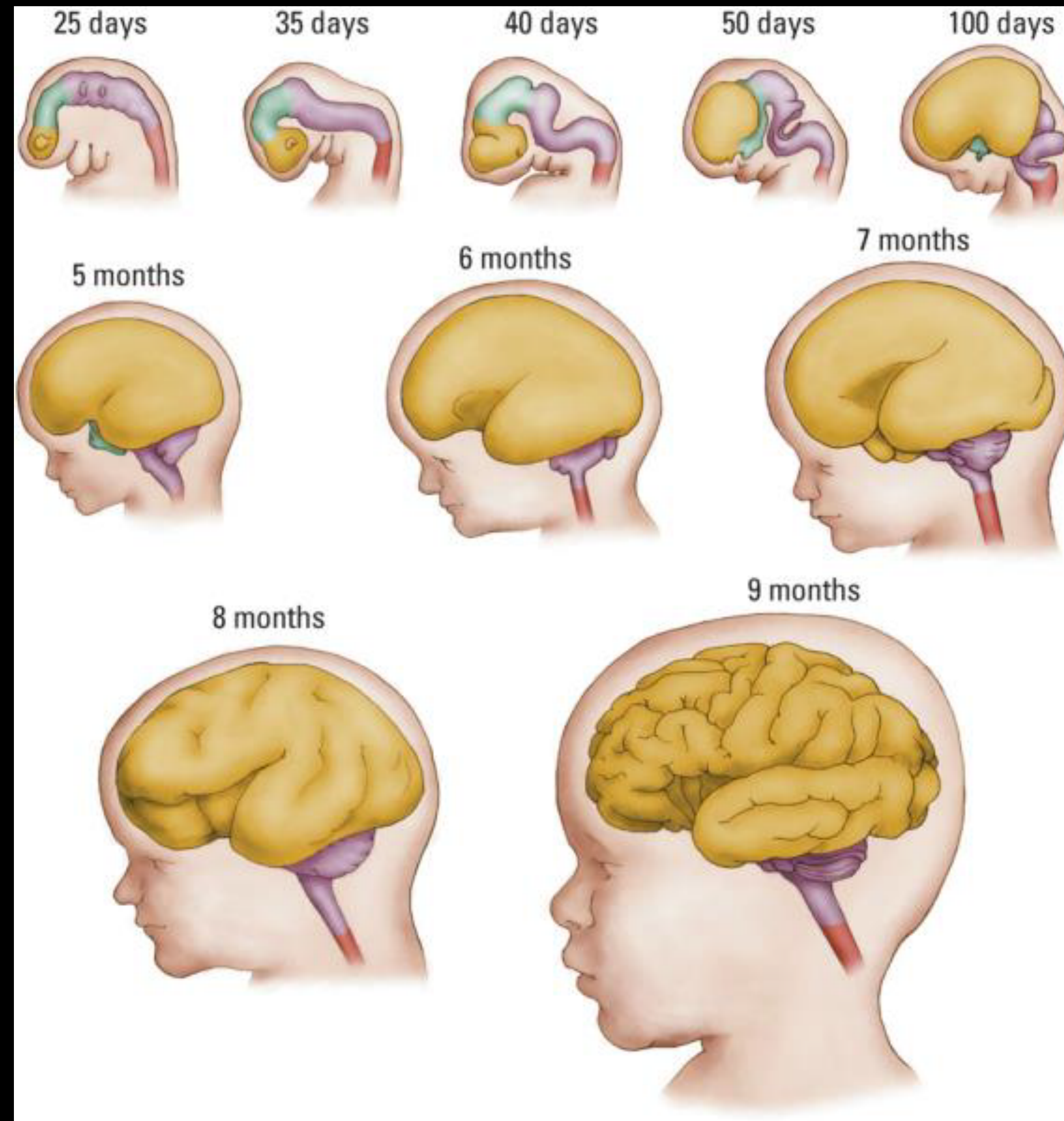


Acknowledgements

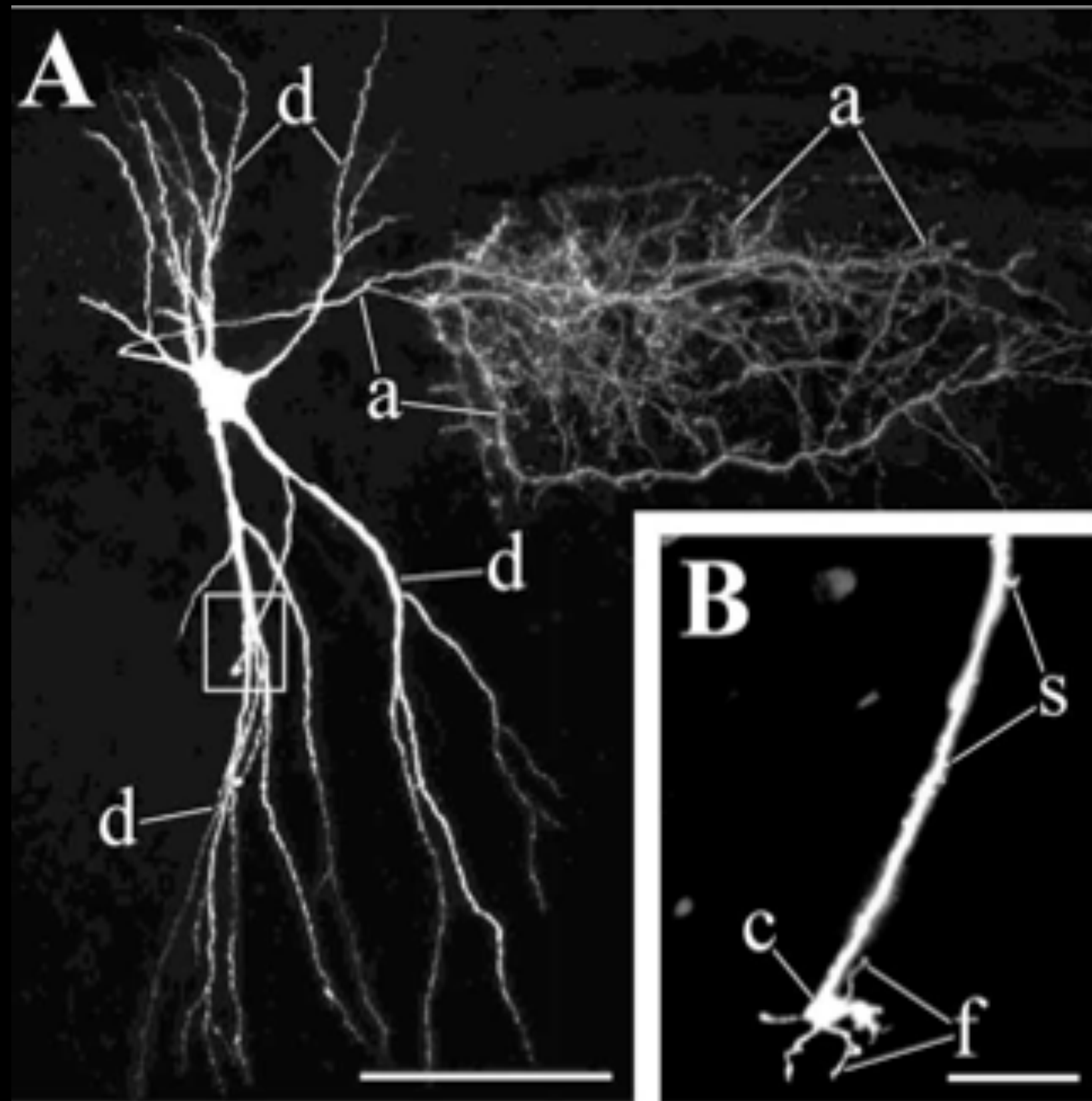
Special thanks to Dr S. J. DiMarzo and Prof. Kohel Shlota for allowing reproduction of their research images and material from the Kyoto Collection and Ms B. Hill for image preparation.

© M.A. Hill, 2004

Once upon a time...



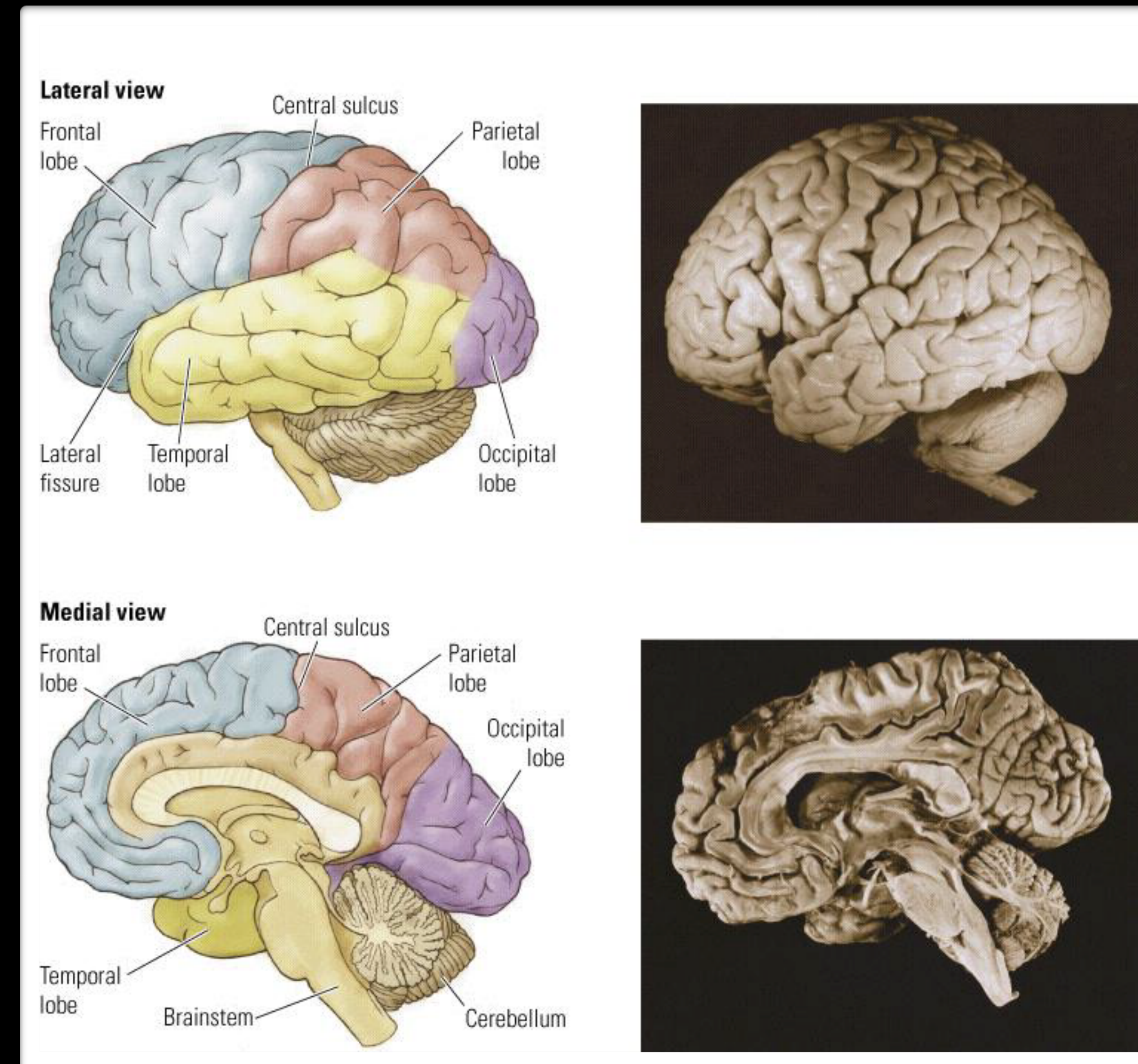
Once upon a time...

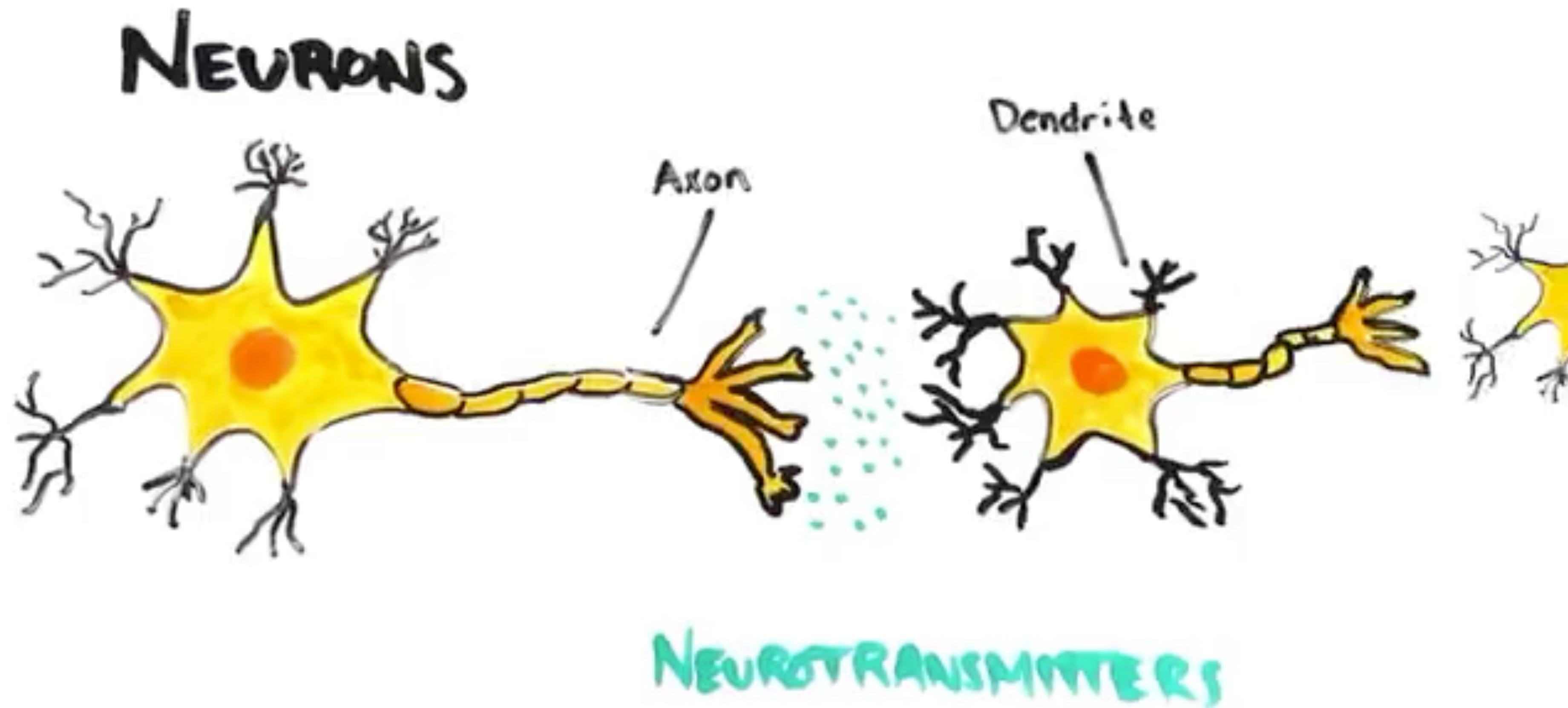


2% av kroppsvekt

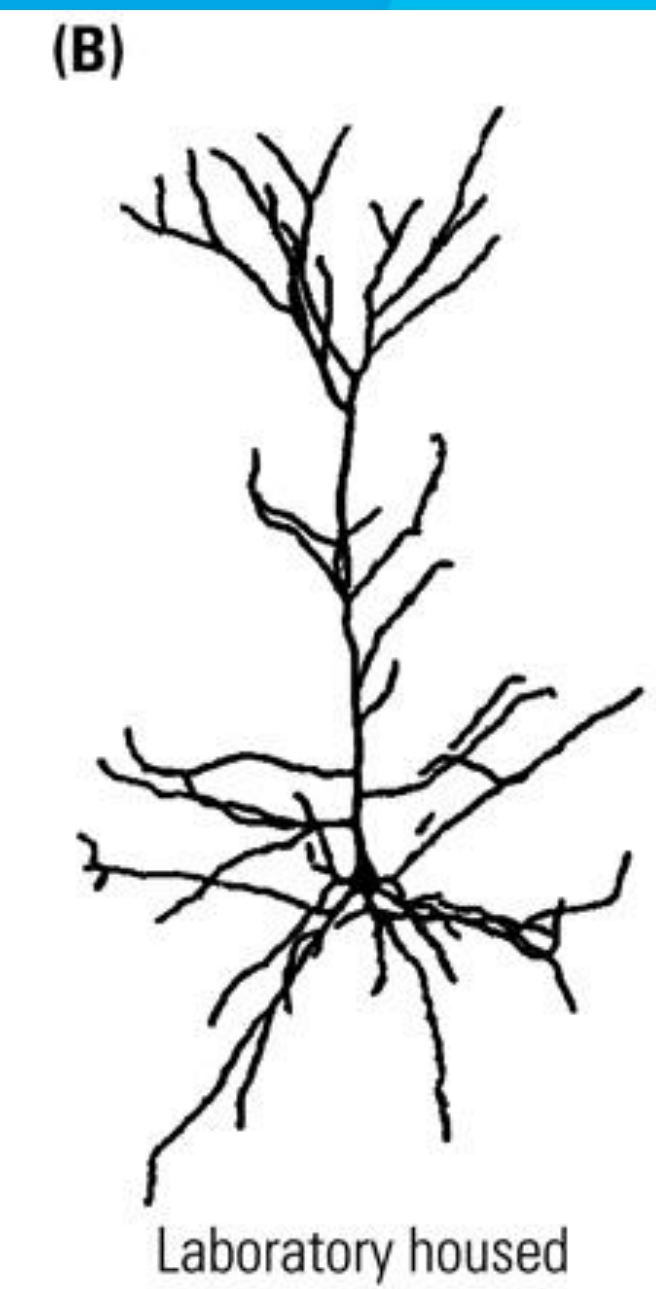
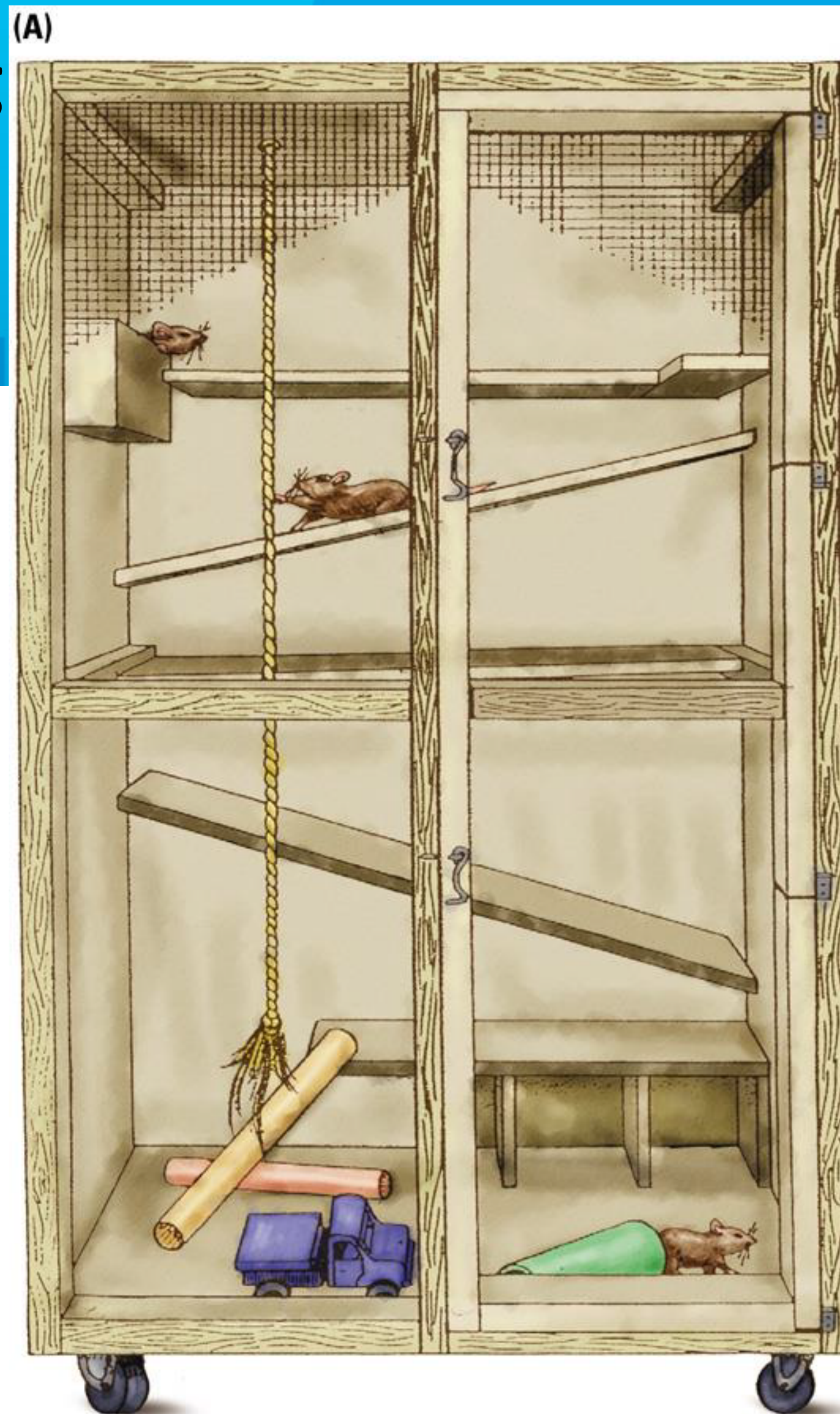
20% av kroppens energiforbruk

100 milliarder nevroner

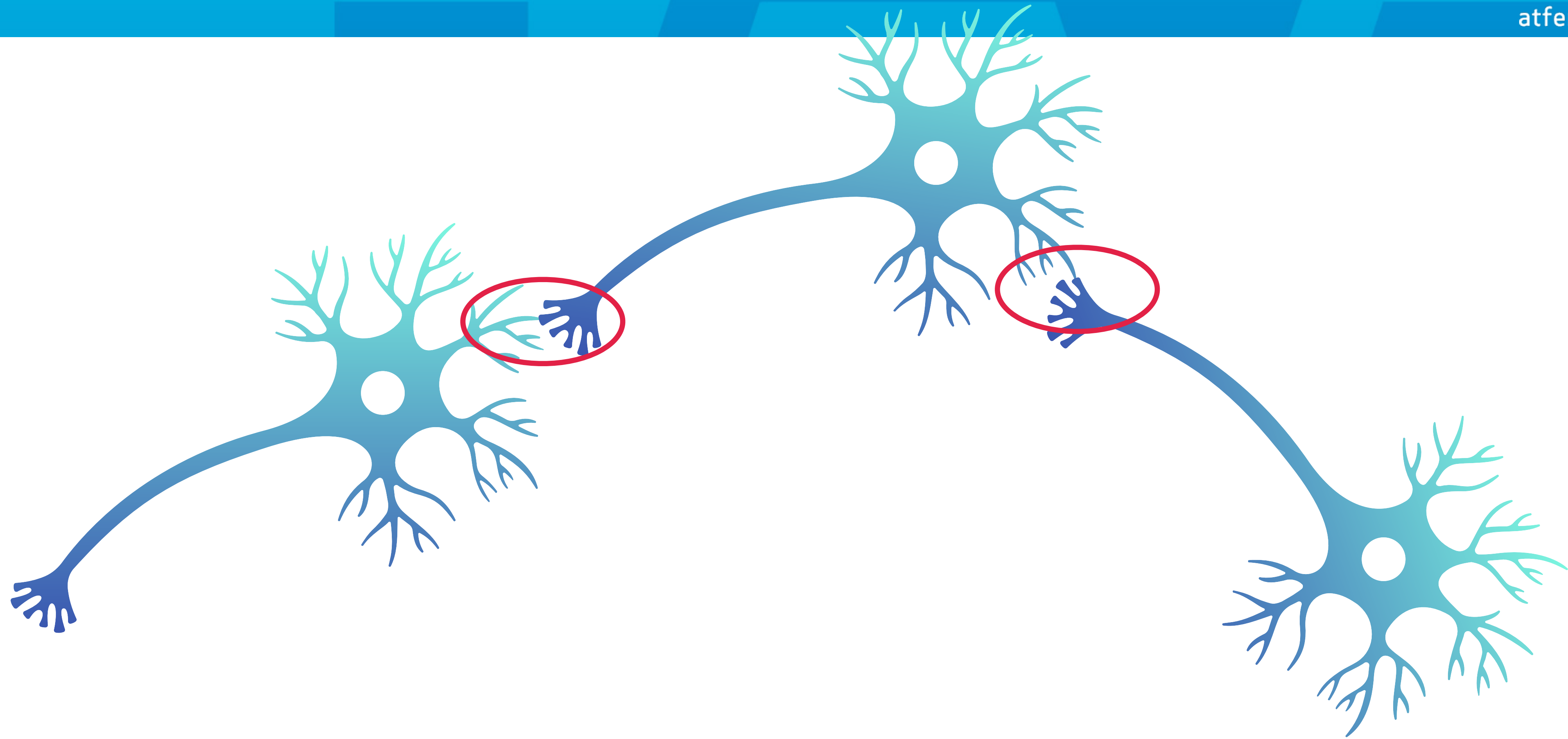




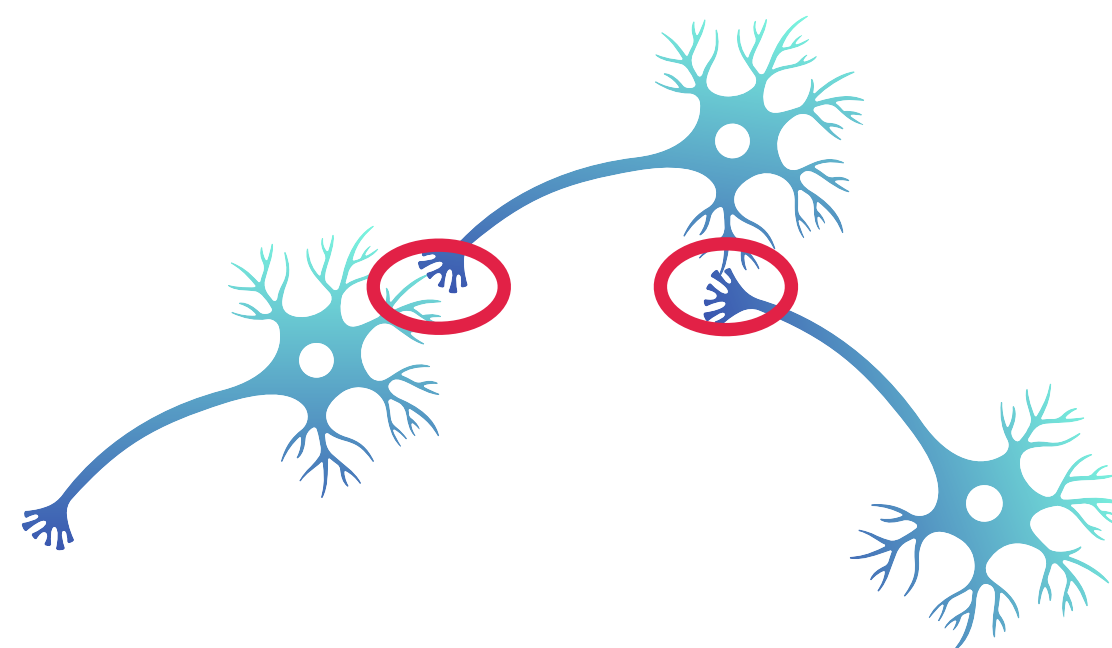
Genetikk, nevrobiologi og atferdsanalyse

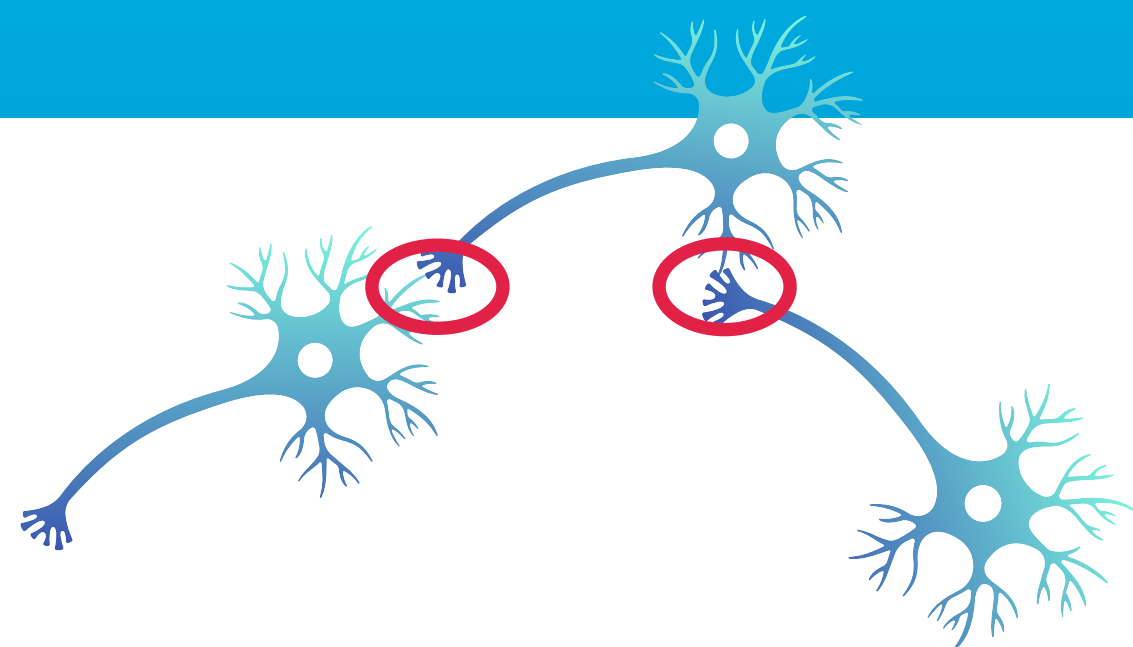


Genetikk, nevrobiologi og atferdsanalyse



Læring



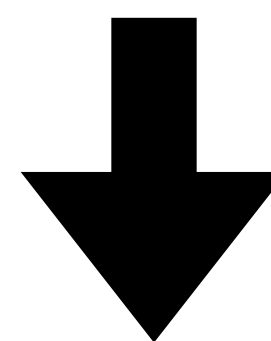


Endring i atferd som resultat av erfaringer (Passer & Smith, 2012)

Den fysiske og funksjonelle endringen i hvordan nervesystemet flytter informasjon, som et resultat av stimulering (Brodal, 2017)

+

«Antok at det fantes læringsmekanismer som gjaldt for alle organismer» (Passer & Smith, 2011)



Habituering

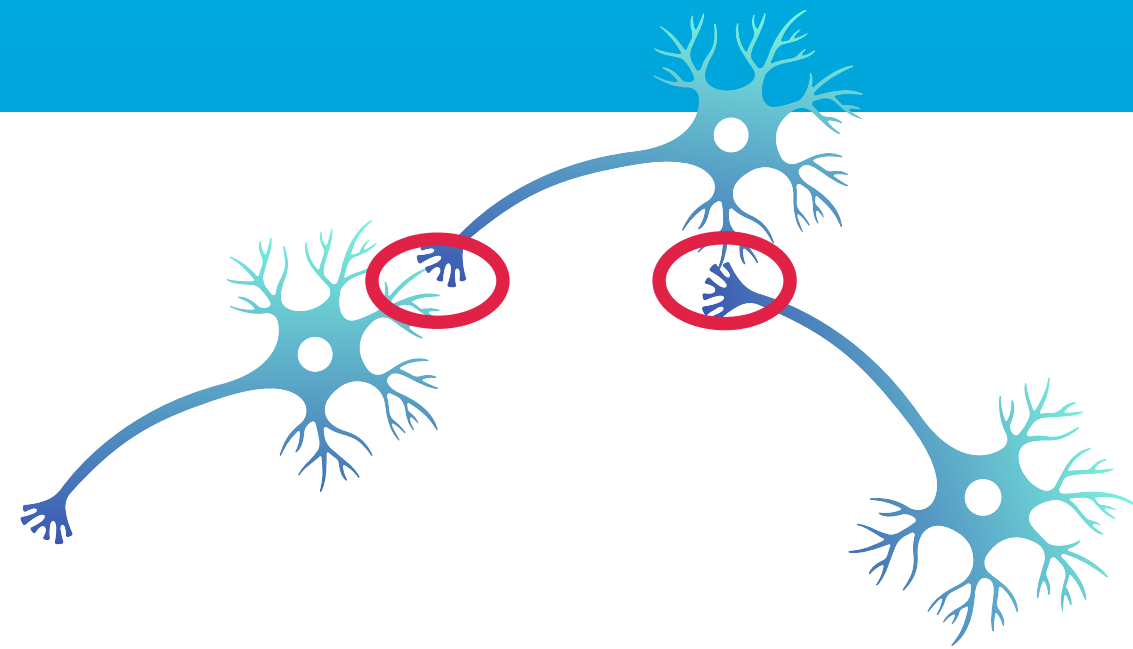
Sensitivering

Respondent
betinging

Operant
betinging

Imitering

Læring



Habituering

Sensitivering

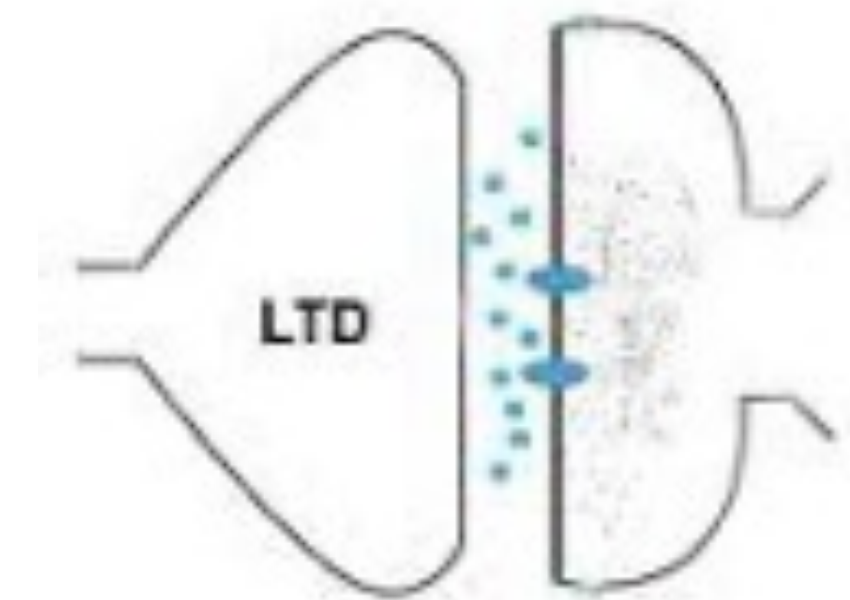
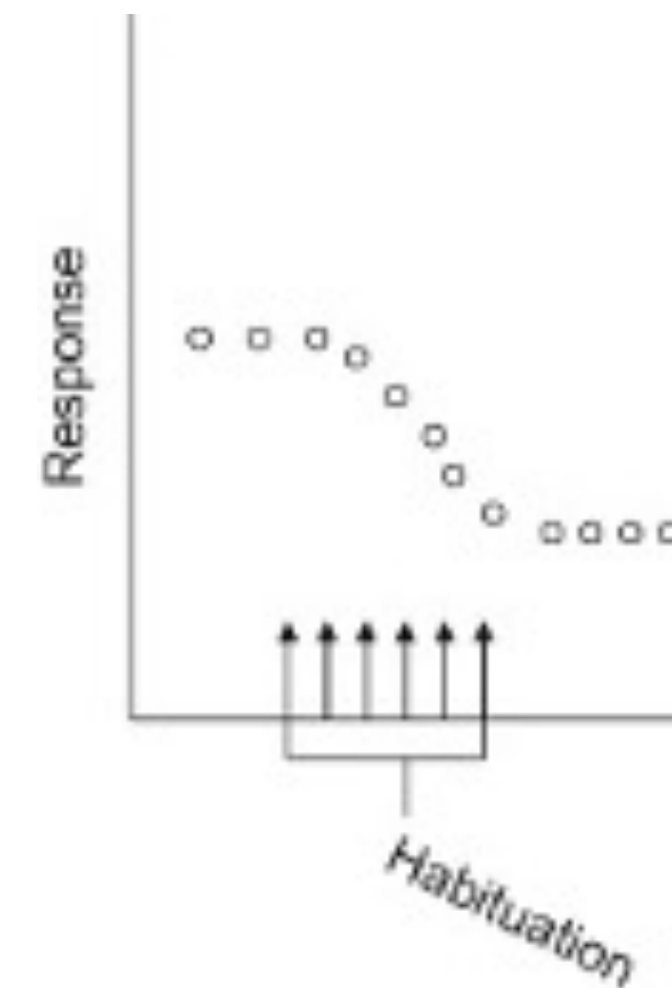
Respondent
betinging

Operant
betinging

Imitering

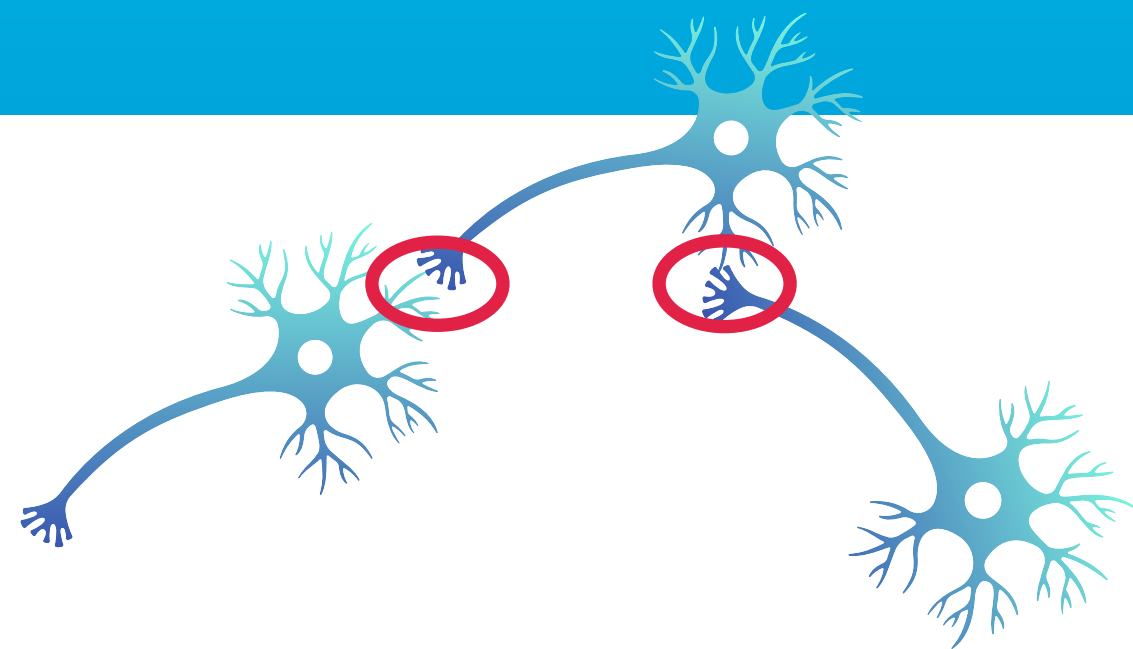
S ↓ R

Svekkelse i celled responser til repetert stimulering



Orienteringsrespons

Læring



Habituering

Sensitivering

Respondent
betinging

Operant
betinging

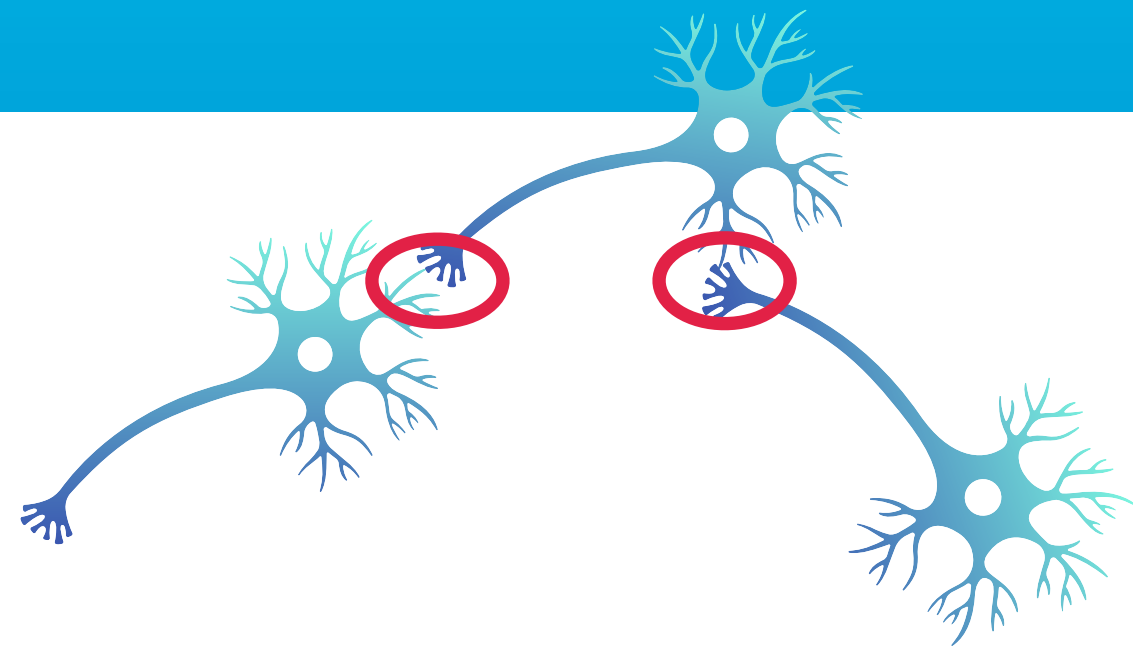
Imitering

S + R



<https://www.youtube.com/watch?v=dlilZh6oqdA&t=33s>

Læring



Habituering

Sensitivering

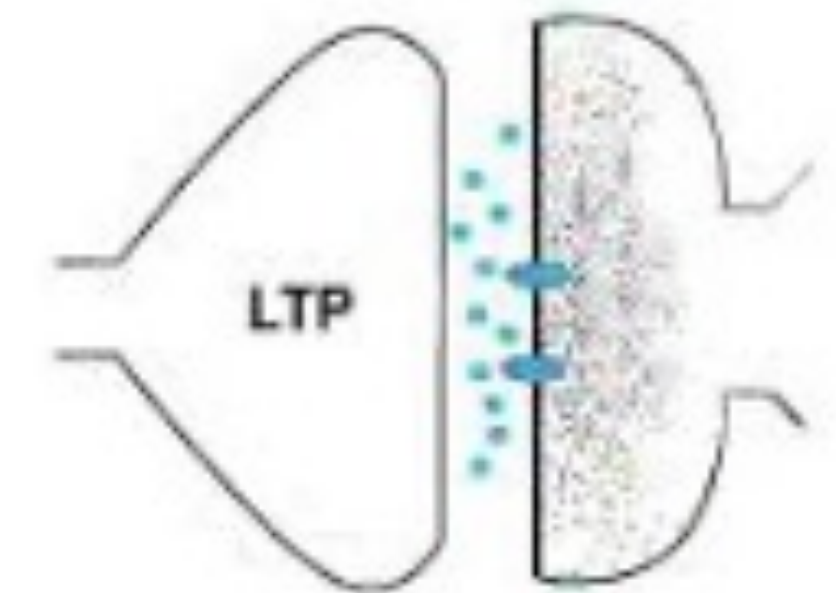
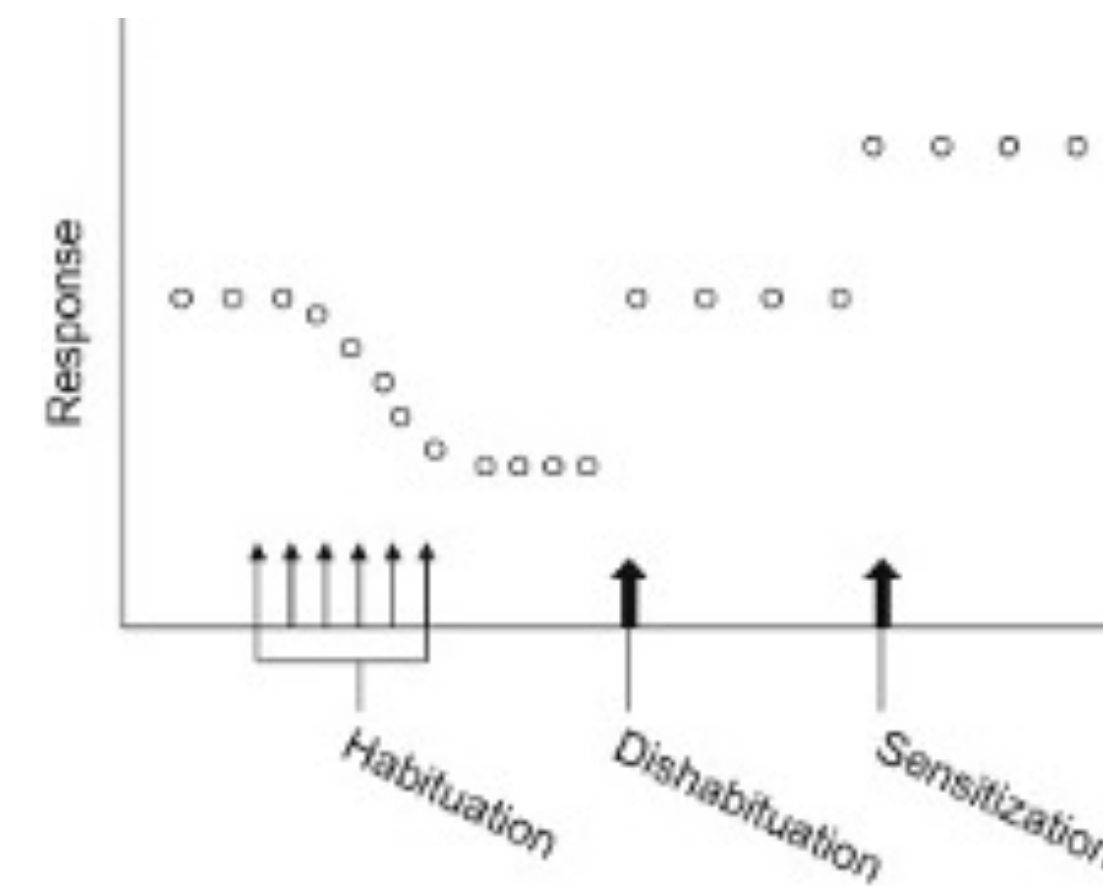
Respondent
betinging

Operant
betinging

Imitering

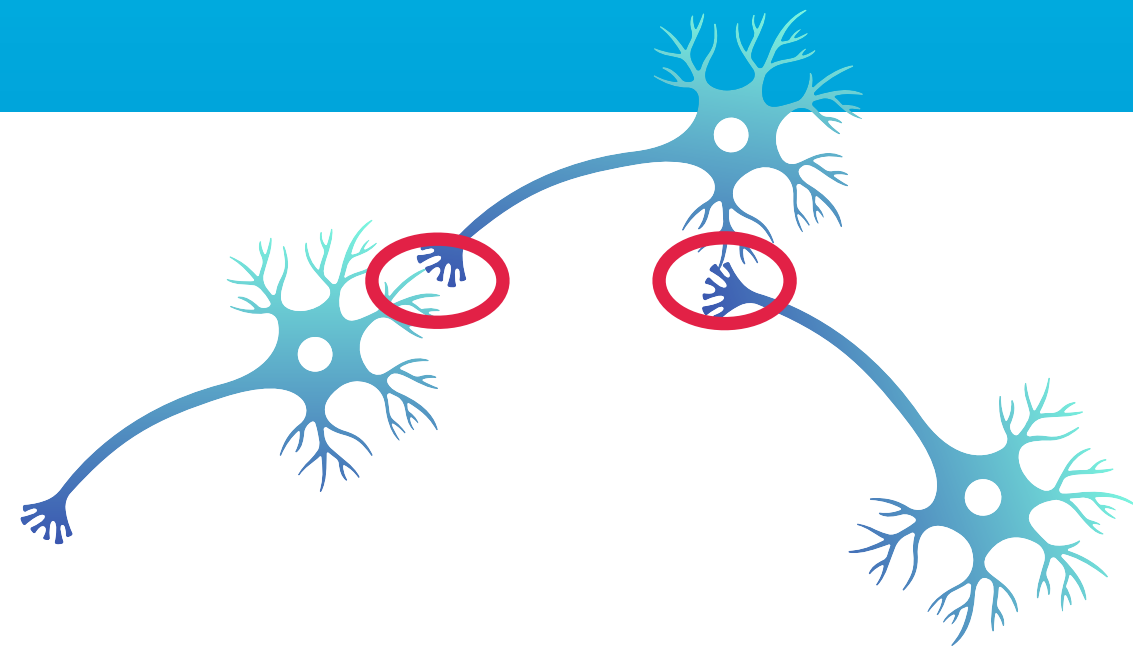
S ↑ R

Styrking i celles responser til repetert stimulering



Stress-responser

Læring



Habituering

Sensitivering

Respondent
betinging

Operant
betinging

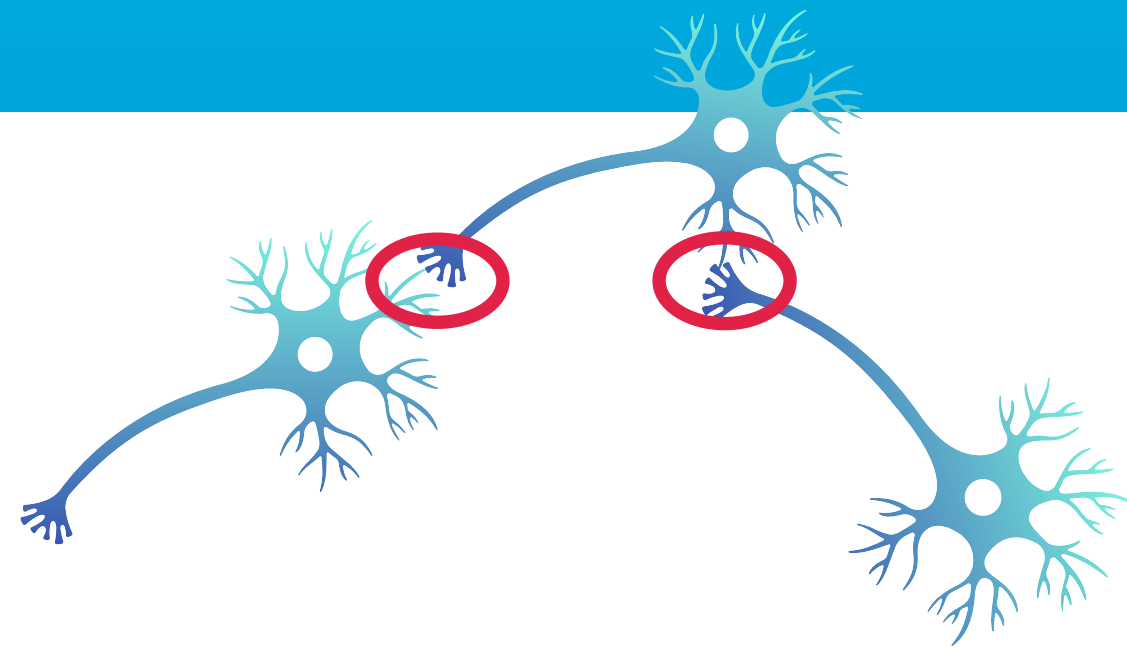
Imitering

S ↑ R



https://www.youtube.com/watch?v=bmC3-HosS_Q

Læring



Habituering

Sensitivering

Respondent
betinging

Operant
betinging

Imitering

CS - UCS - R

Klassisk betinging

Pavloviansk betinging

*Etableres en **assosiasjon** mellom **stimulus** som utløser
en naturlig forekommende **refleks**, og en **annen**
nøytral stimulus*

Reflekser

Angst/fobi

Smak

Emosjoner

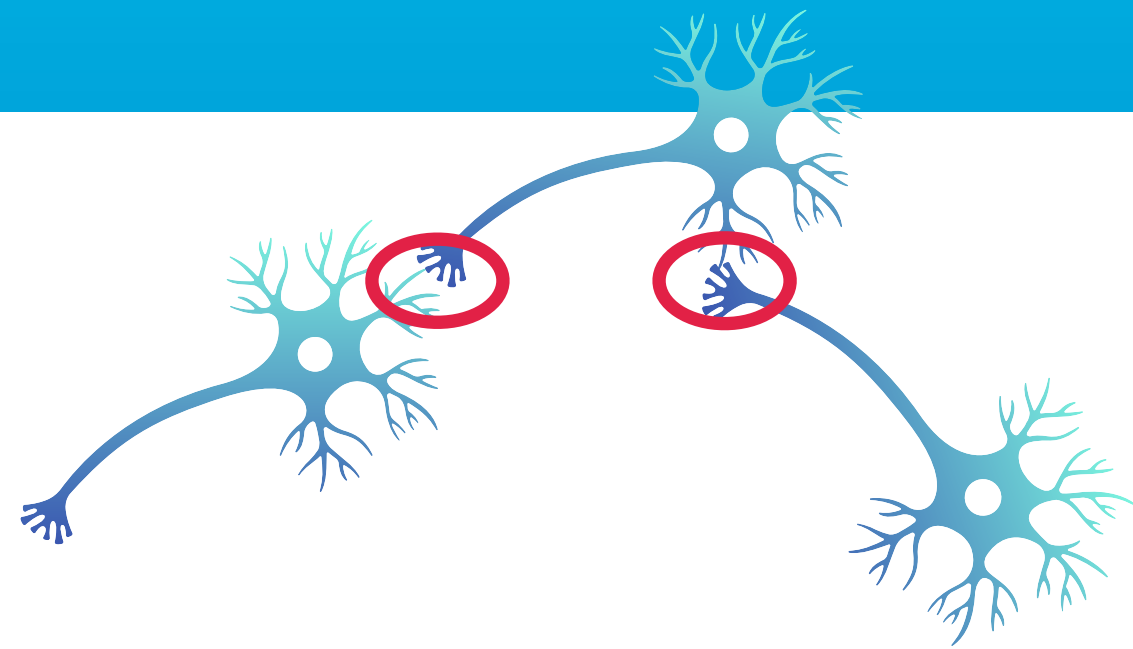
Forelskelse

Smerte

Forskjellig fra sensitivering

Ulike
nevrotransmittere

Læring



Habituering

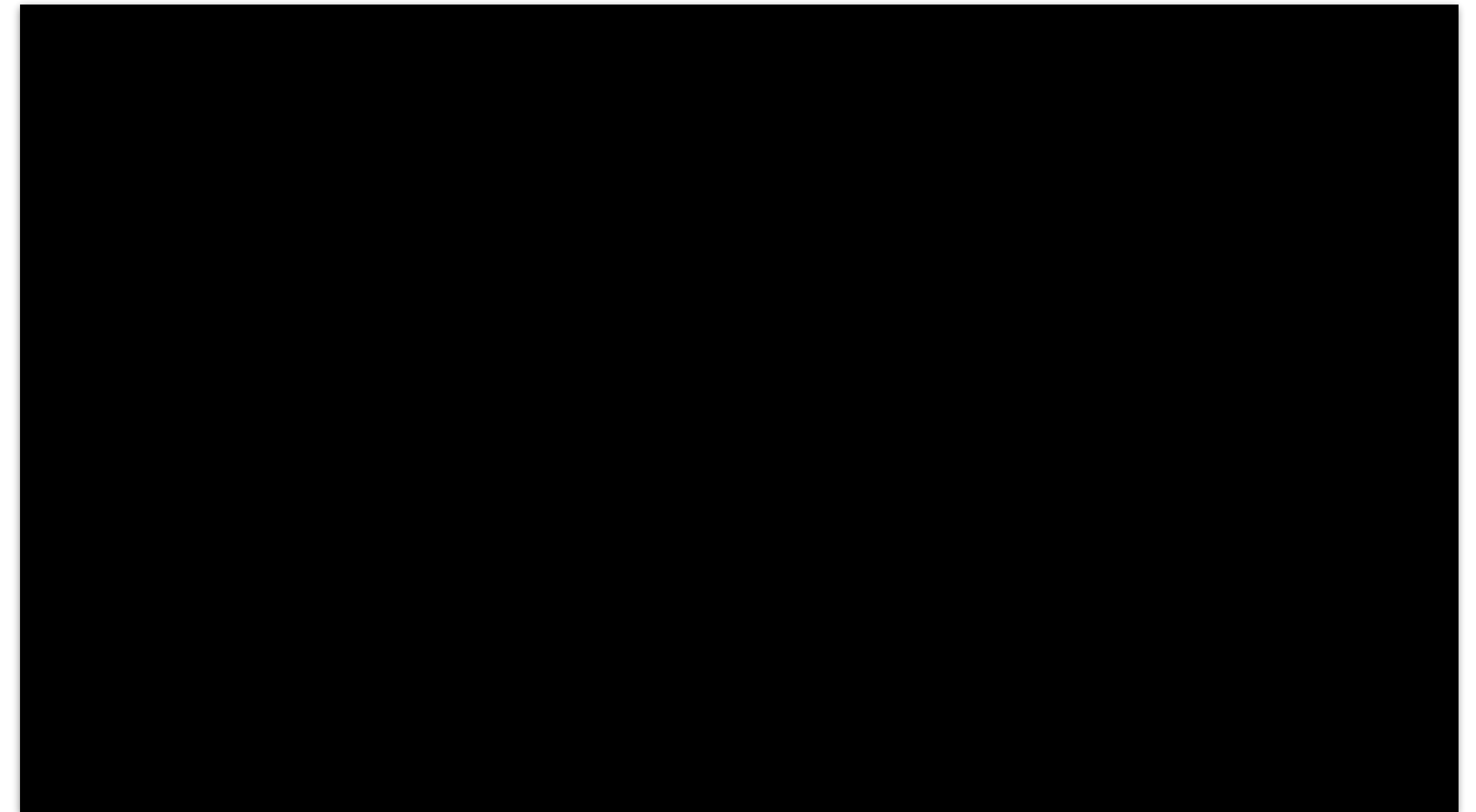
Sensitivering

Respondent
betinging

Operant
betinging

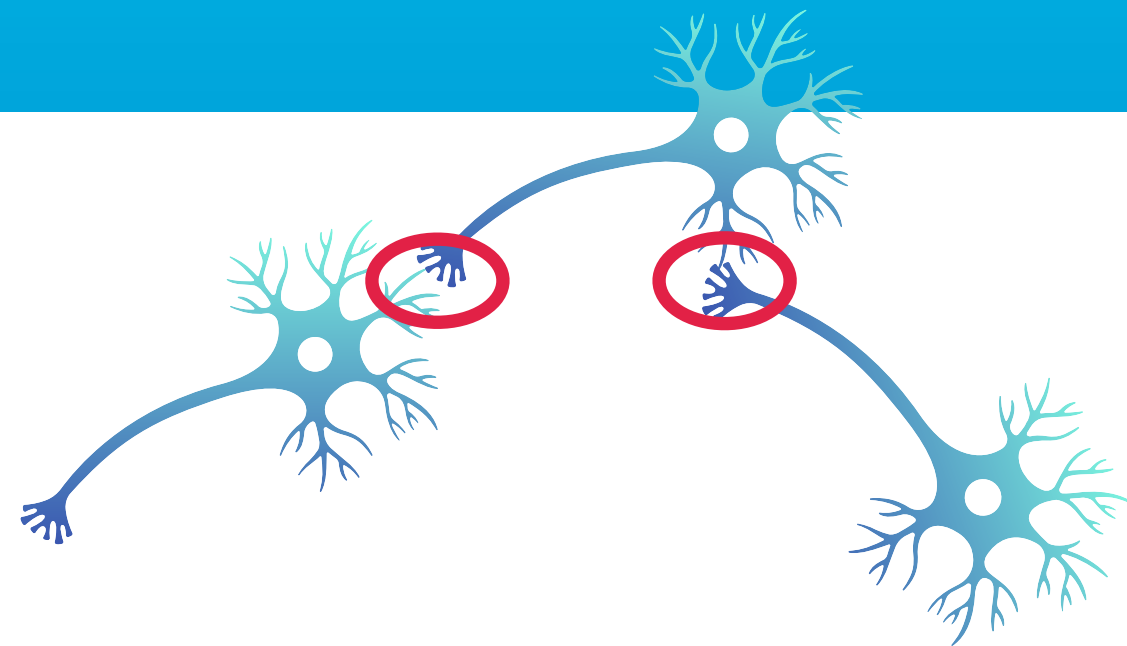
Imitering

CS - UCS - R



<https://www.youtube.com/watch?v=BwnIG3xgaoU>

Læring



Habituering

Sensitivering

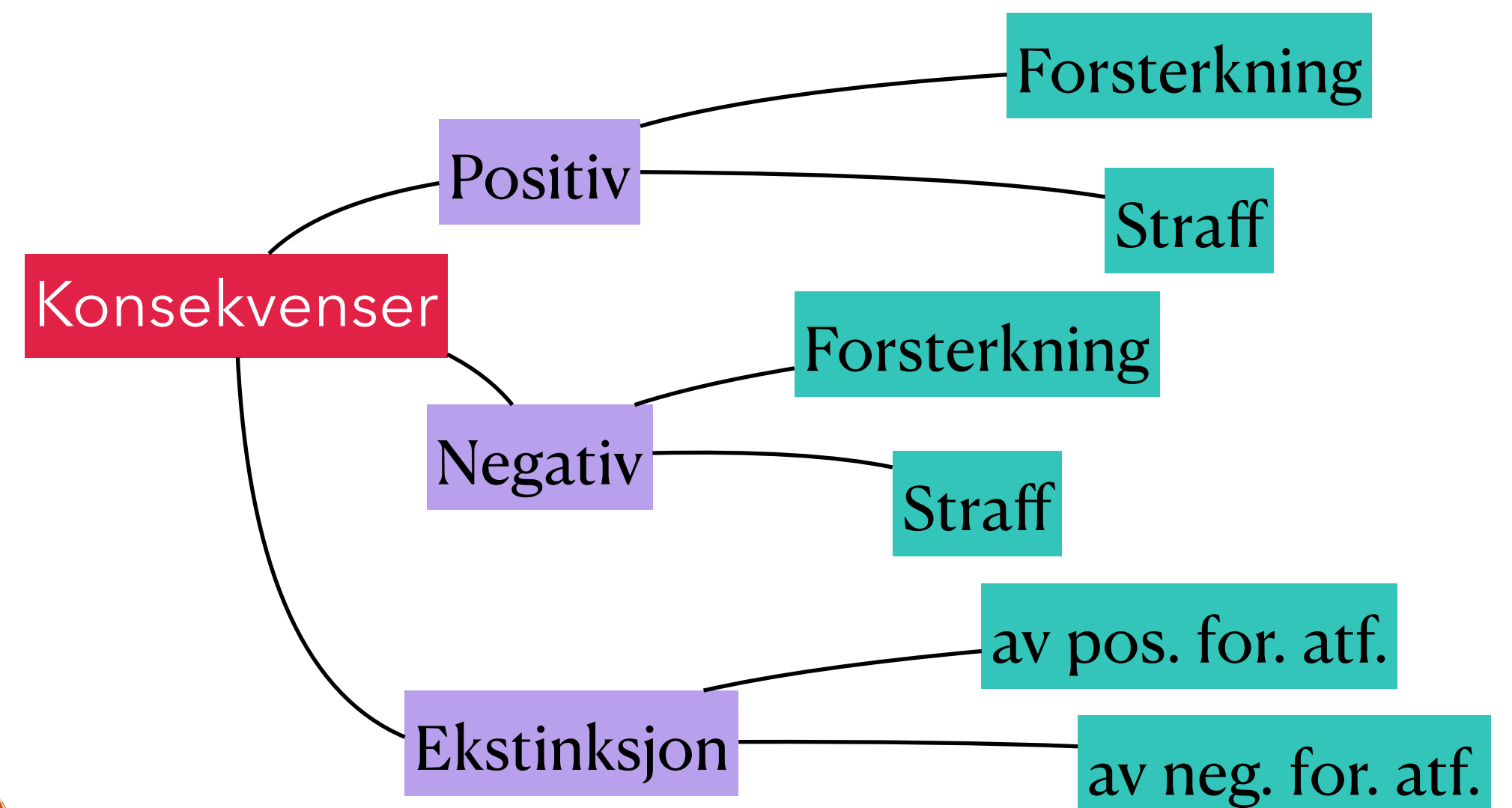
Respondent
betinging

Operant
betinging

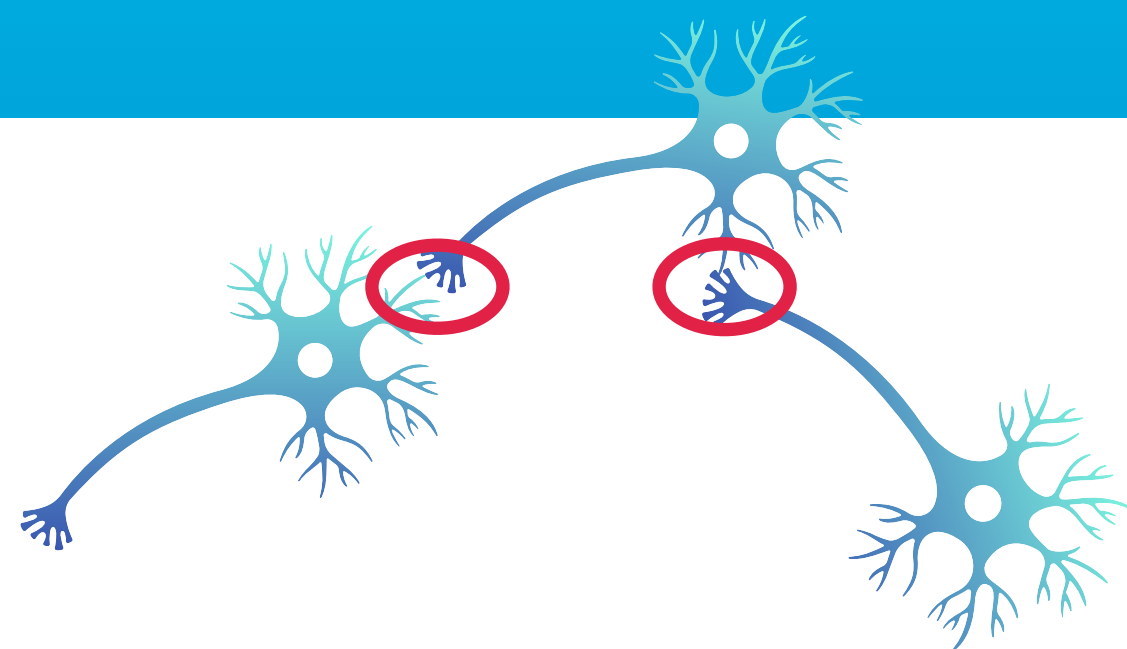
Imitering

SD - R - SC

Konsekvenser som kommer etter responsen, øker eller senker sannsynligheten for at responsen forekommer i samme miljø senere



Læring



Habituering

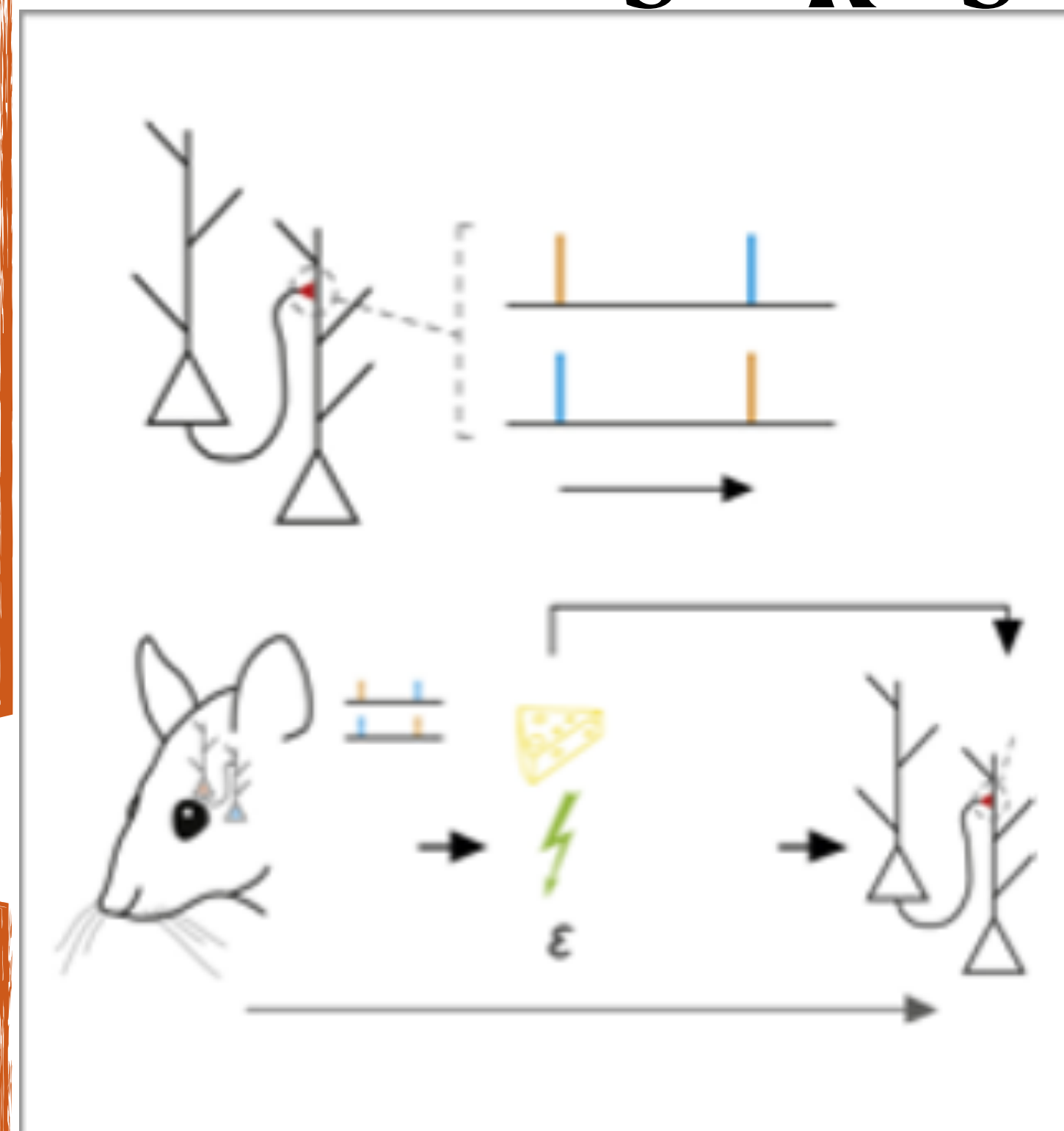
Sensitivering

Respondent
betinging

Operant
betinging

Imitering

SD - R - SC



Konsekvenser

SR

SP

SE

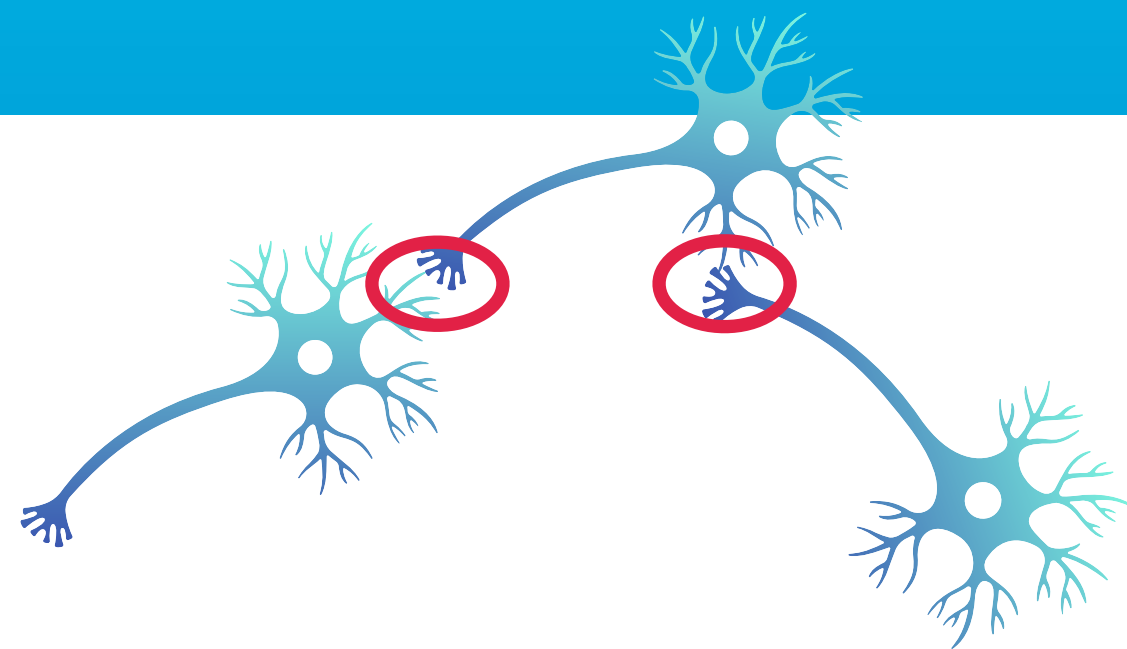
Modulerer

SD - R

Via

Nevromodulatorer

Læring



Habituering

Sensitivering

Respondent
betinging

Operant
betinging

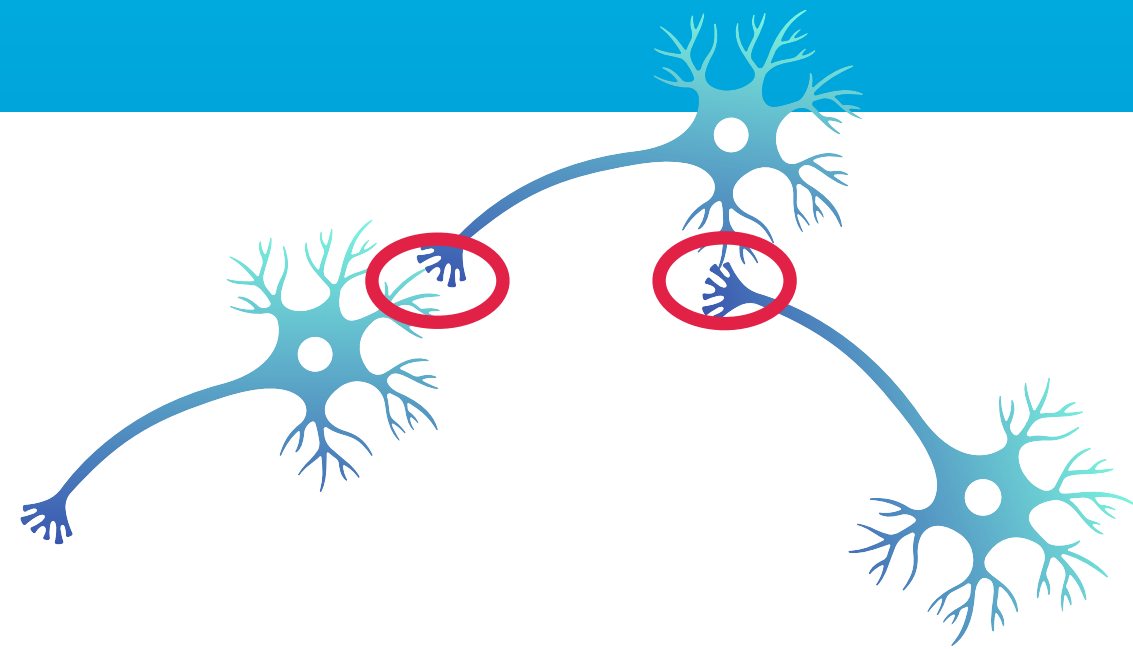
Imitering

SD - R - SC



<https://www.youtube.com/watch?v=NeK8GNLylkc>

Læring



Habituering

Sensitivering

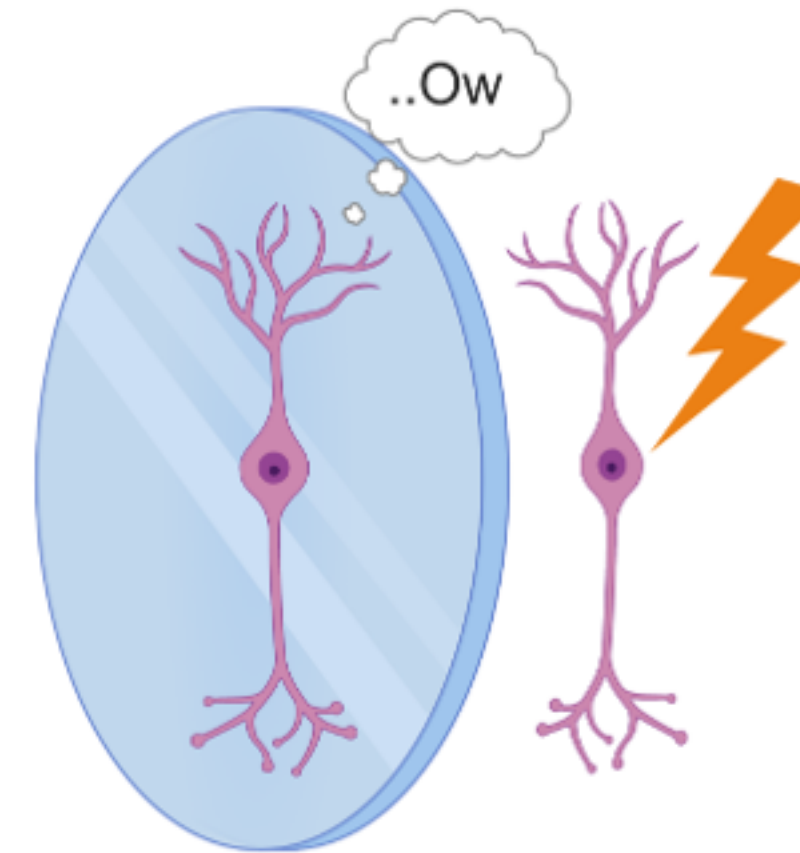
Respondent
betinging

Operant
betinging

Imitering

S = R

*Stimuli utløser spesifikke responser
uten tidligere læringshistorie i
individets utvikling*



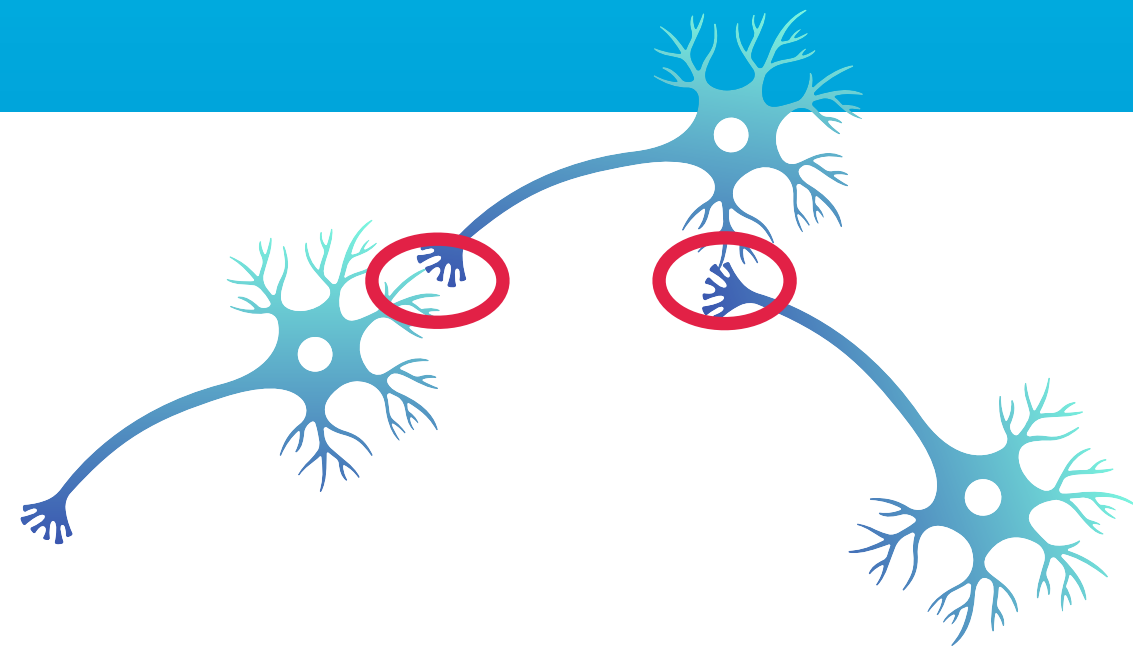
Motoriske responser

Emosjoner

Persepsjon/sensasjon

Kommunikasjon

Læring



Habituering

Sensitivering

Respondent
betinging

Operant
betinging

Imitering

S = R



Nevrobiologi og atferdsanalyse

Nevrobiologi og atferdsanalyse

Et eksempel

Læring er fundamentalt cellulært

Medfødte forskjeller

Barn og unge som ofte responderer intensivt emosjonelt til stimuli i miljøet

«Reaktive barn»

«Mindre reaktive barn»

Hvem lærer mest effektivt?

Nevrobiologi og atferdsanalyse

Et eksempel

«Reaktive barn»

Temperament



Medfødt forskjell i hvordan organismer reagerer på stimuli fra miljøet og hvordan reaksjonen reguleres

Sammenheng mellom individuelle forskjeller i reaktivitet og læring (Pavlov, 1928)

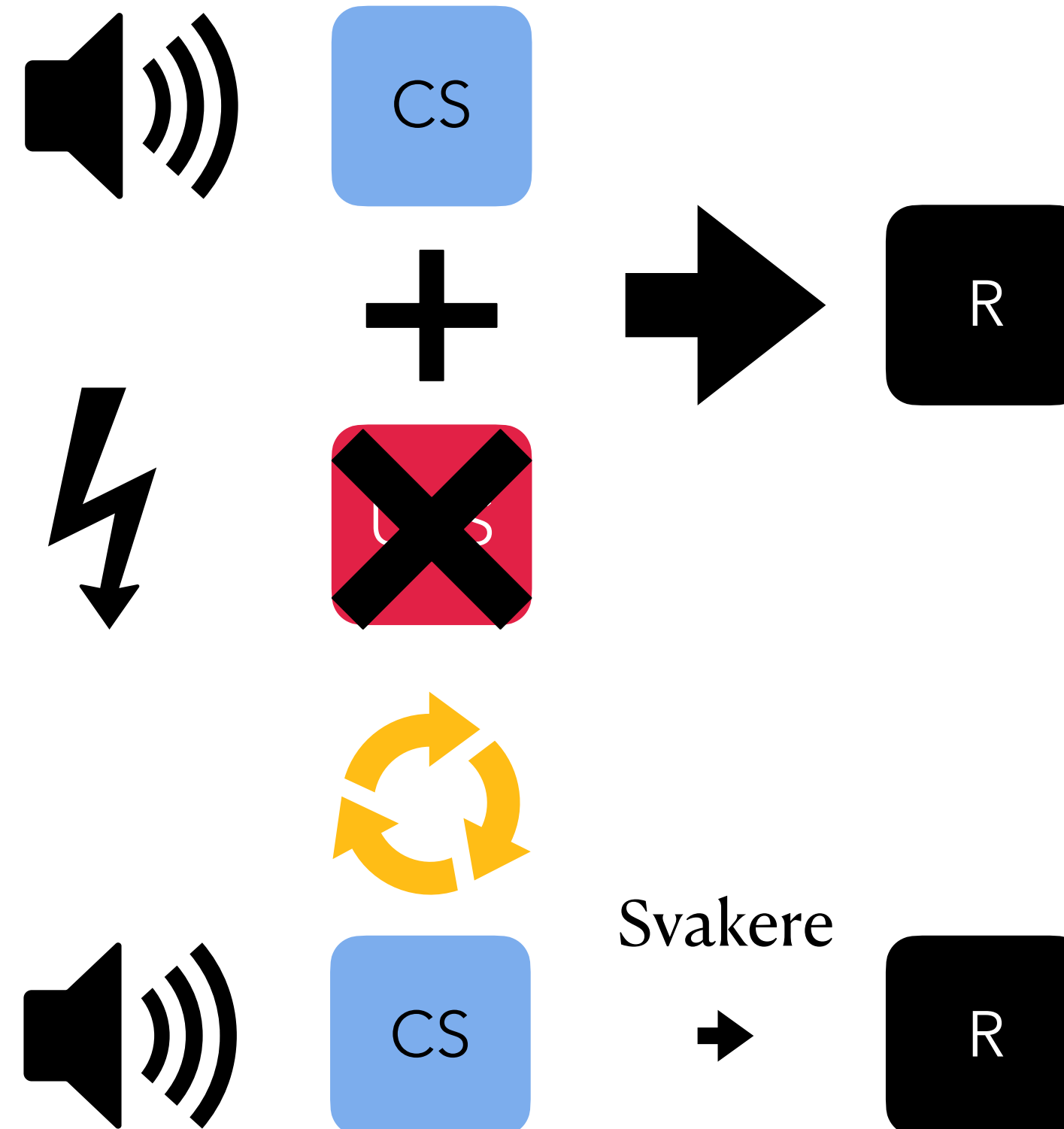
Ser ut til at reaktive organismer lærer «tregere»

Nevrobiologi og atferdsanalyse

Et eksempel

«Reaktive barn»

Respondent ekstinksjon

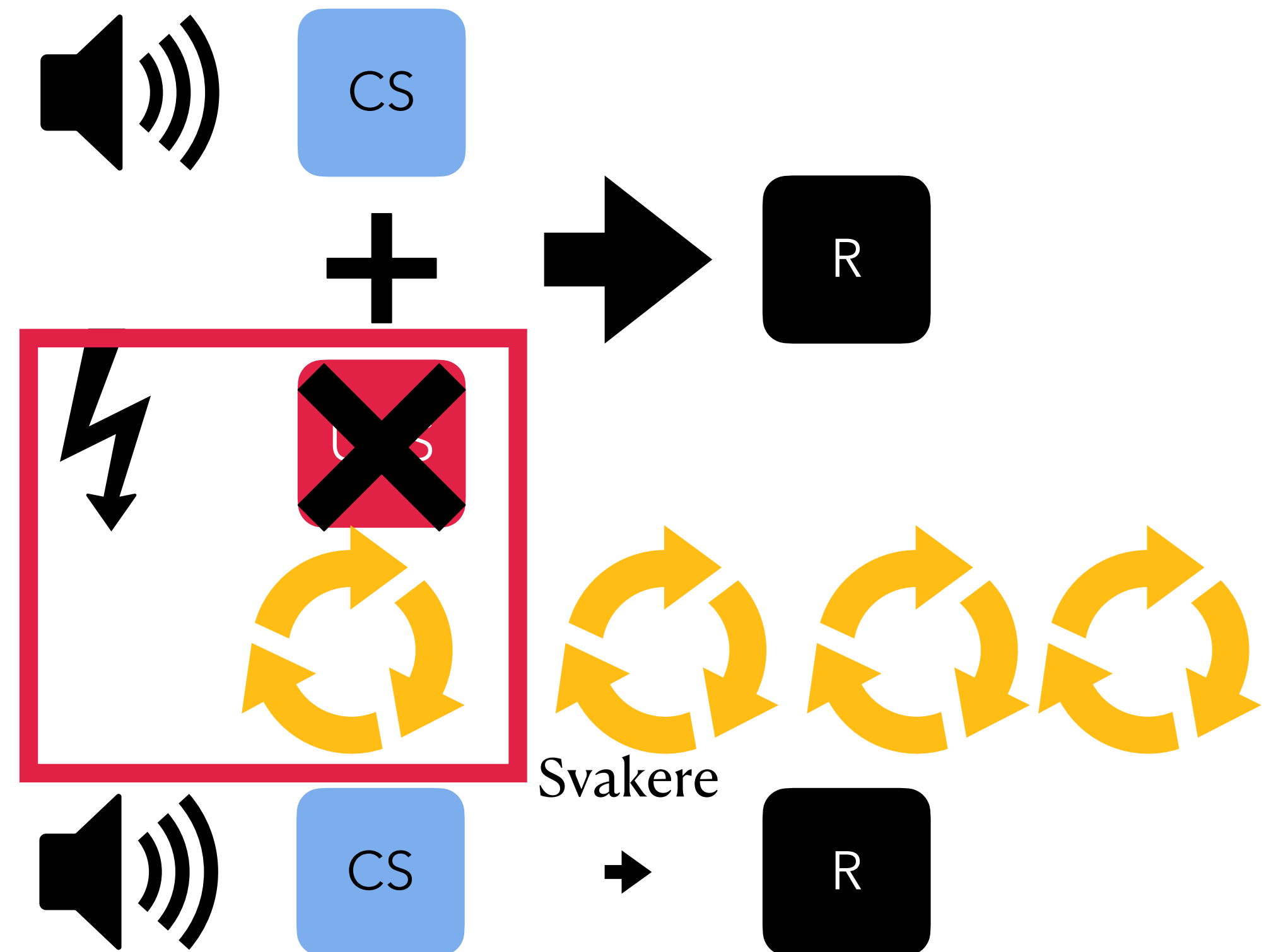


Nevrobiologi og atferdsanalyse

Et eksempel

«Reaktive barn»

Reaktivt temperament



Nevrobiologi og atferdsanalyse

Et eksempel

Reaktivt temperament påvirker respondent ekstinksjon

Krever flere gjentakelser

Lettere spontant tilbakefall

Andre faktorer som påvirker respondent ekstinksjon

«Reaktive barn»

Alder

Kjønn

Men hva betyr så dette i praksis

Søren....

Men hva betyr så dette i praksis Søren...



<https://www.youtube.com/watch?v=BwnlG3xgaoU>

«Dette» tar lengre tid

Temperament kan «trenes» til en viss grad

Støtter antakelse om at en må jobbe med
emosjonelle responser først

Kan være en faktor å se på hormonell syklus når
man arbeider med eksponeringstrening hos jenter

Tidlig intervensjon er mye mer gunstig!

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- Se ellers Respondent ekstinksjon, synaptisk plastisitet og dets sammenheng med temperament - Skår, 2021