

Lifelong learning IBE-BIV “*Back to school*” programme

Leloup Frédéric
IBE-BIV WG A – Lighting Sciences

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IBE-BIV

BELGISCH INSTITUUT voor VERLICHTINGSKUNDE
INSTITUT BELGE de l'ECLAIRAGE
CIE NATIONAL COMMITTEE – NBN SECTOR OPERATOR

Lifelong Learning – IBE-BIV Back to School programme

MET DE STEUN VAN
AVEC LE SOUTIEN DU



Lifelong learning - Introduction

- Lifelong learning (LLL)
 - Adult / Elderly education, skills for work,...
 - *“...learning is lifelong and life-wide, from birth to death (anytime) and exists in and out of the education system (anywhere). Learning is undertaken by people of all ages (anyone), takes place through a range of modalities, including face to face, at distance and, increasingly, online, and concerns all domains of knowledge (anything)”*

UNESCO Institute for Lifelong Learning (UIL)

Lifelong learning - Introduction

- Need
 - Substantial transformation in the labour market due to the 4th industrial revolution
 - Disruptions caused by effects of climate change, demographic shifts, etc.
- Most recently Covid-19
 - Disruption in education systems (and people's lives)
 - ➔ widespread use of digital learning practices in education and training across the EU

Opportunity:

Rethink how learning may contribute to create a sustainable society

European Commission - Digital Education Action Plan 2021-2027

Lifelong learning - Introduction

- Key action points
 - ...
 - Place digital technology at the service of LLL
 - Encourage and support LLL initiatives
 - ...

“Embracing a culture of lifelong learning – Contribution to the Futures of Education initiative”

UNESCO Institute for Lifelong Learning (UIL)

Lifelong learning @ IBE-BIV

- 2020-2021: ° **series of 6 webinars**
 - Zhaga – Les normes et la normalization de la communication sans fil en éclairage extérieur / Normen en normalisatie van draadloze communicatie in buitenverlichting
 - L'Eclairage Sportif intérieur et extérieur : vers des solutions LED / Sportverlichting Indoor & Outdoor: renoveren naar LED oplossingen - NBN EN12193
 - Inspections de luminaires / Keuring van Armaturen – ENEC en ENEC+
 - L'Eclairage des Tunnels et Passages Routiers Souterrains / Regels van goed vakmanschap voor verlichting van wegtunnels en ondergrondse doorgangen - NBN L 18-003
 - Life Cycle Assessment
 - Lichtfestivals / Festivals de la Lumière

Lifelong learning @ IBE-BIV

- 2021-2022: ° **“back to school” programme**
 - Series of short lectures around specific topics
 - Human (colour) vision
 - Non-visual effects of lighting / Light & Health
 - Glare assessment
 - Smart lighting
 - ...

Back to school @IBE-BIV: Human Vision

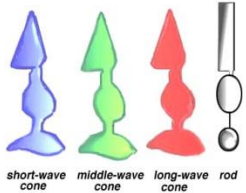
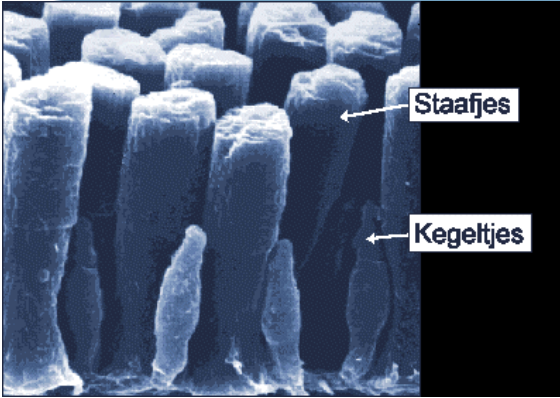
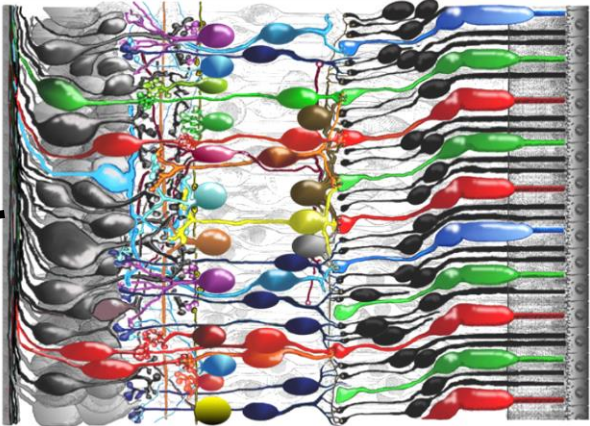
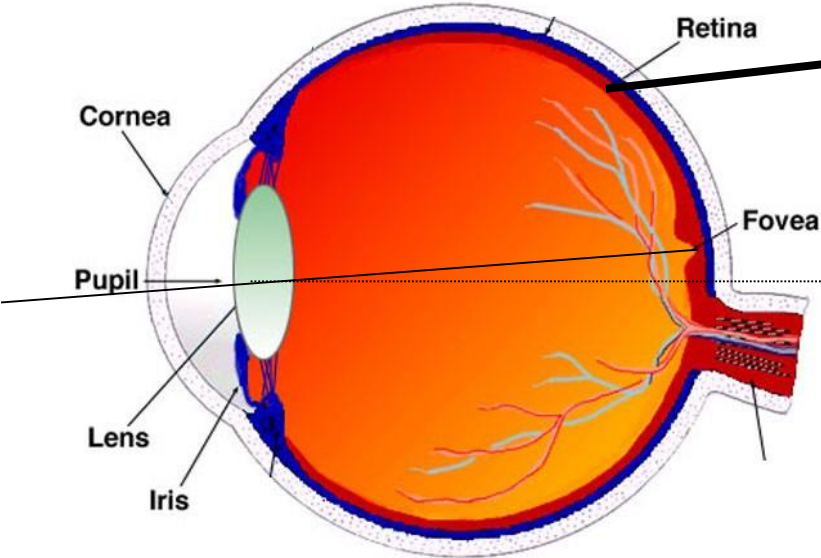
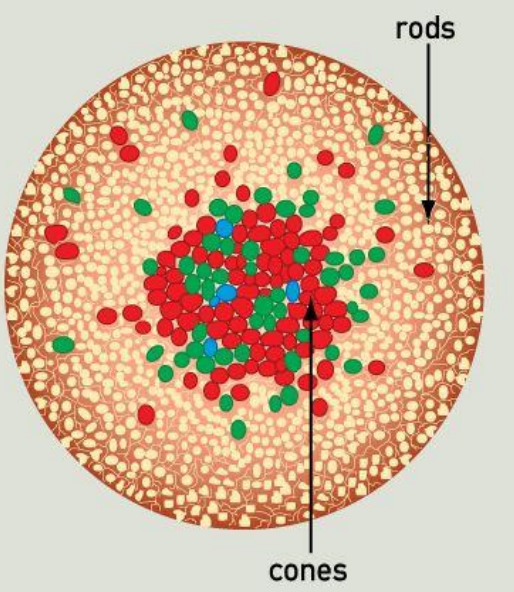
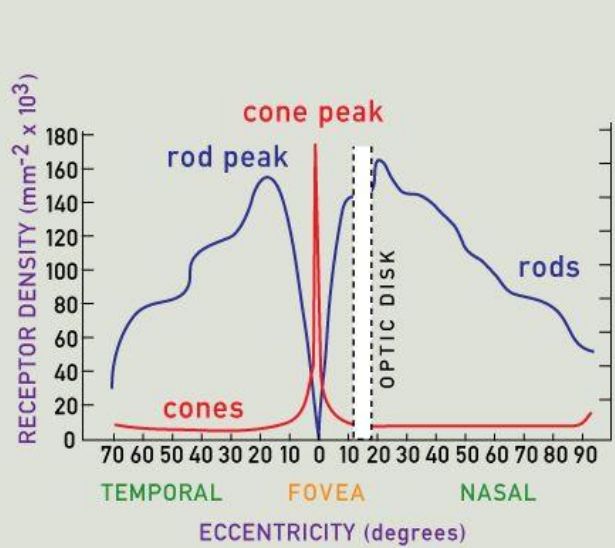
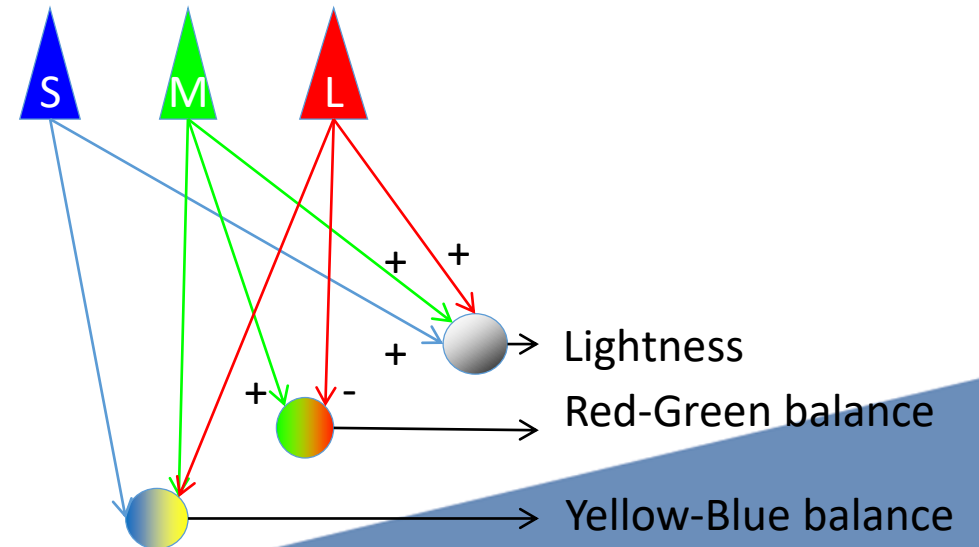
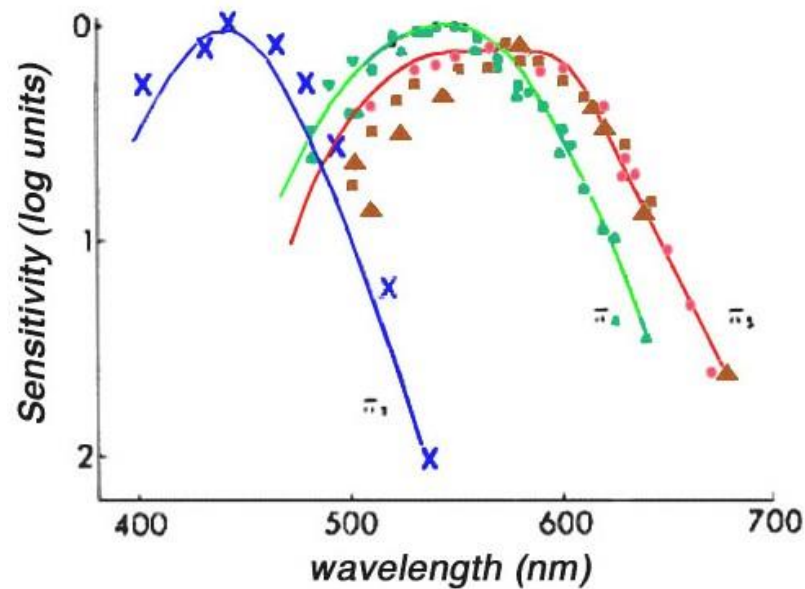


Fig. 13. There are four photoreceptor types in the human retina. Short-wavelength cones (blue), medium wavelength cones (green), long wavelength cones (red) and rods.



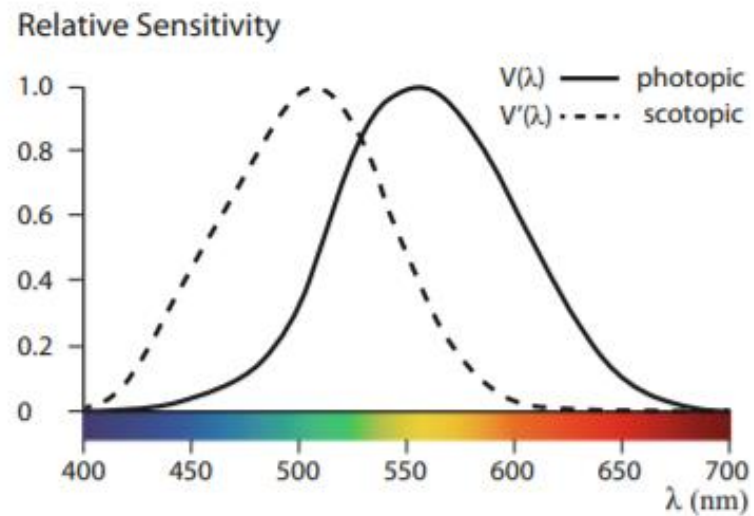
Back to school @IBE-BIV: Human Vision

- Perception
 - 5 types of photoreceptors
 - Rods
 - 3 types of cones: L-, M-, S-cones
 - Intrinsic photosensitive Retinal Gnglion Cells (ipRGC)



Back to school @IBE-BIV: Human Vision

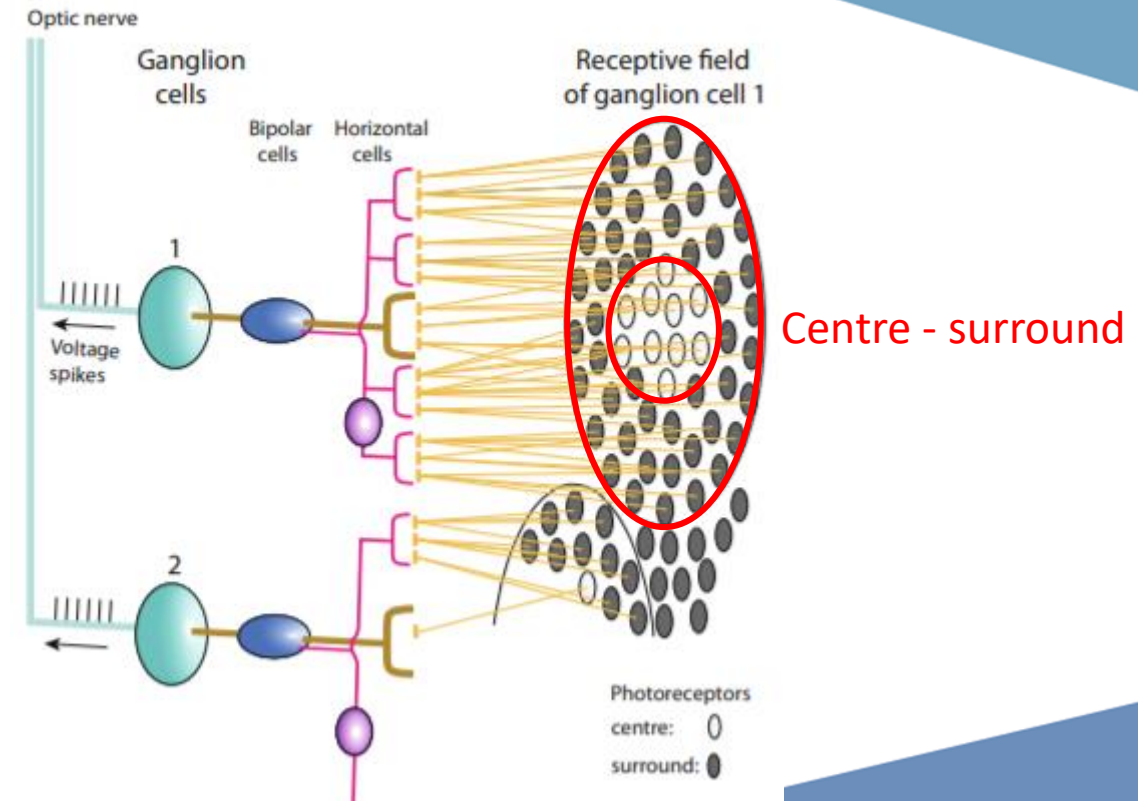
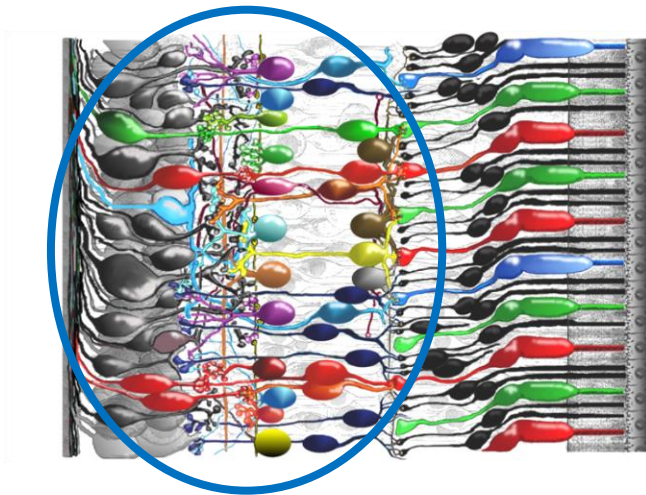
- Perception
 - 5 types of photoreceptors
 - Rods → **scotopic vision**
 - 3 types of cones: L-, M-, S-cones → **photopic vision**



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Back to school @IBE-BIV: Human Vision

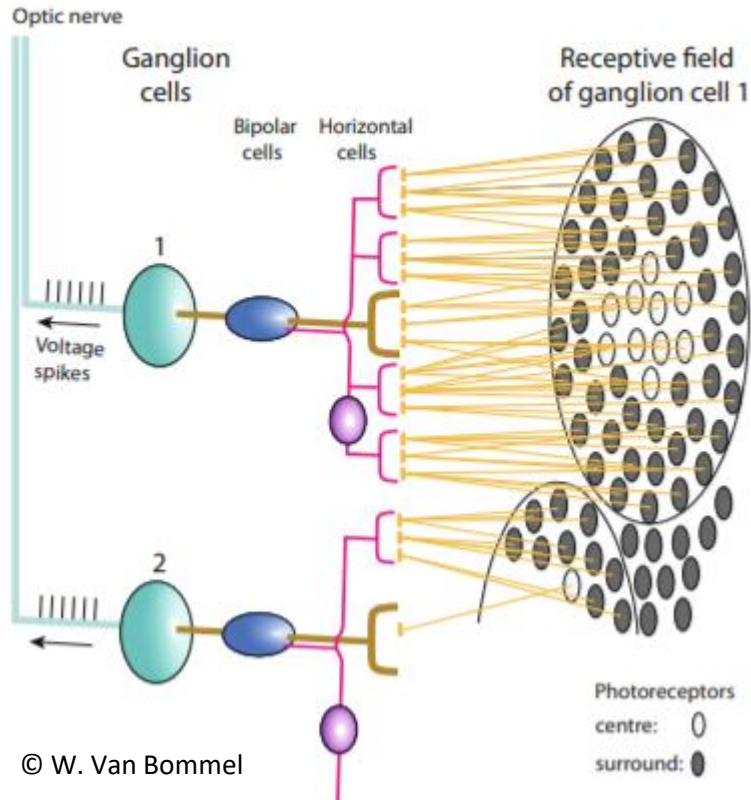
- Perception: **Receptive fields**
 - Bipolar & Ganglion cells: first processing



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Back to school @IBE-BIV: Human Vision

- Perception: **Receptive fields**
 - Ganglion cells:

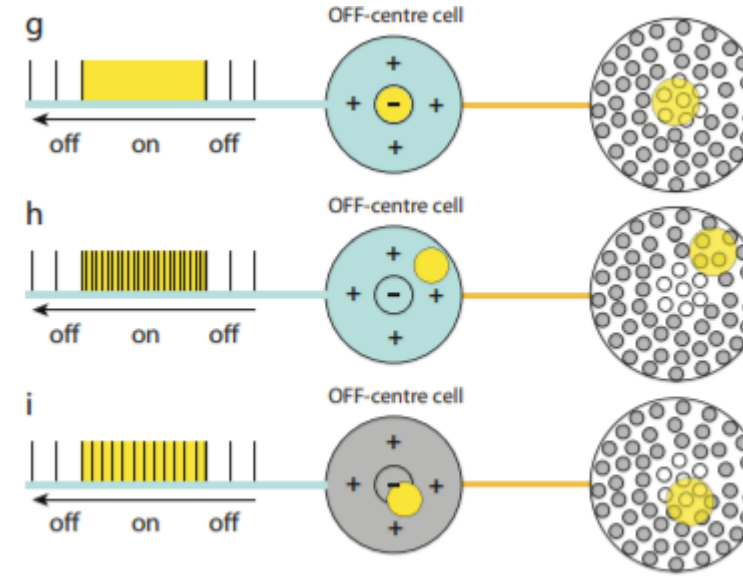
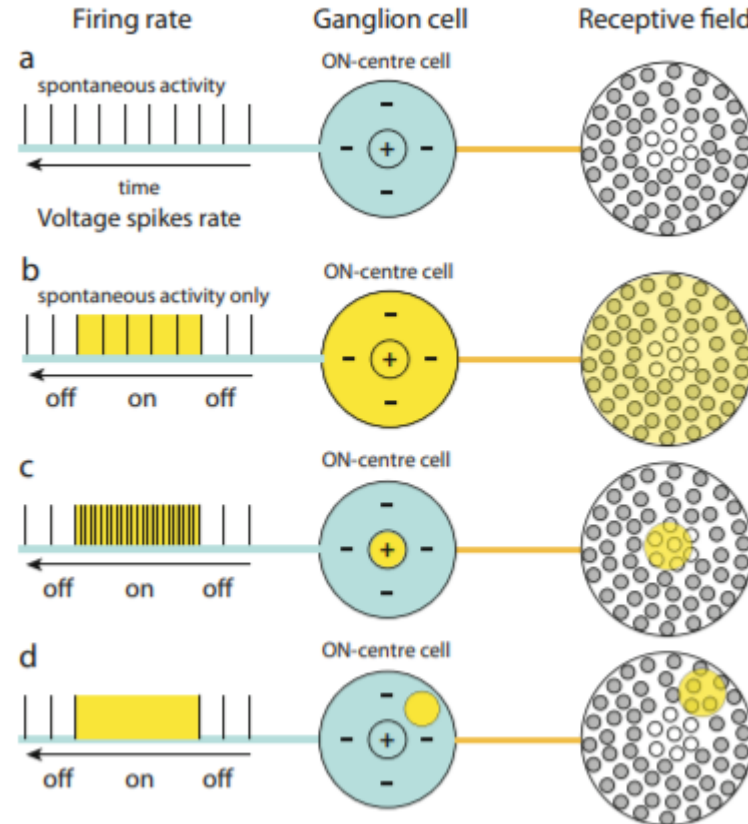


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ON-centre cells

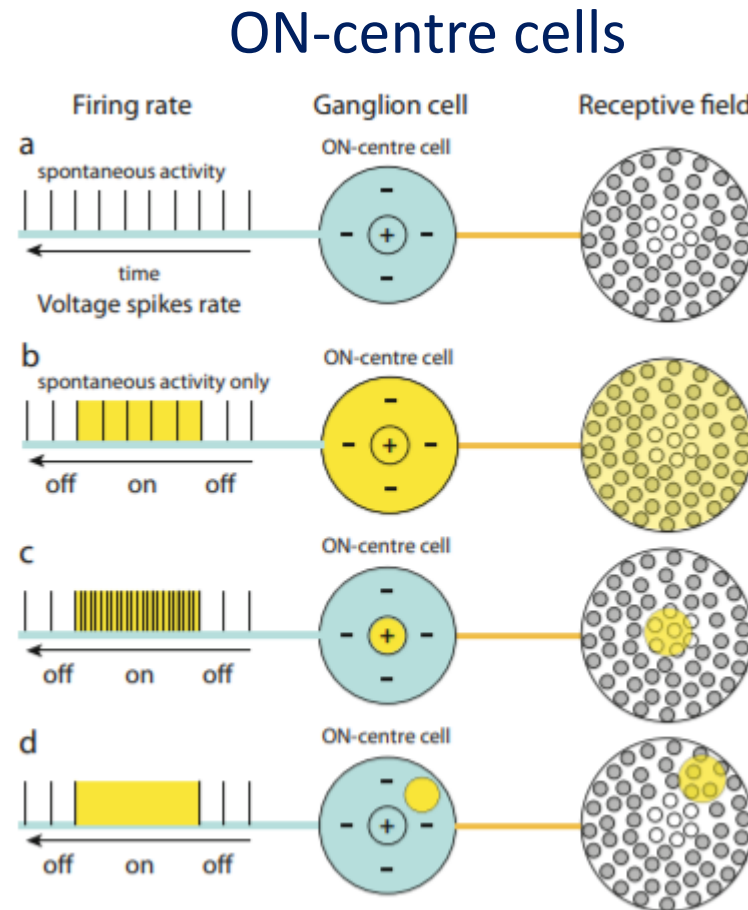
vs.

OFF-centre cells

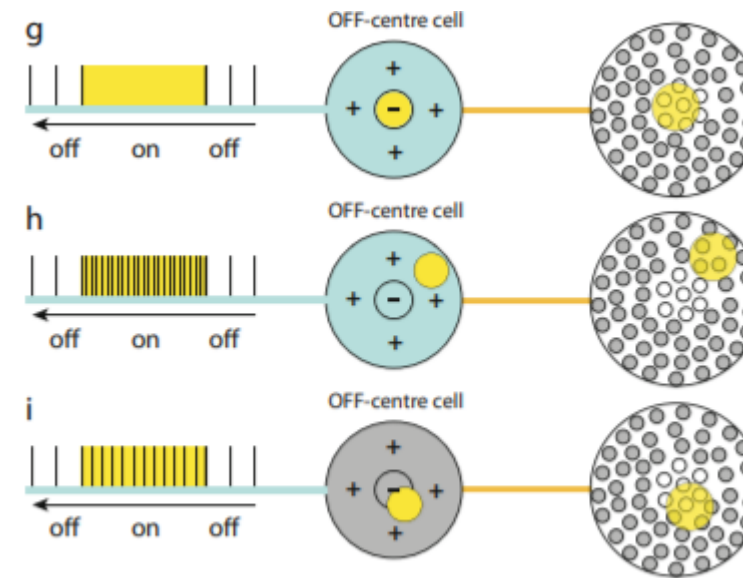


Back to school @IBE-BIV: Human Vision

- Perception: **Receptive fields**
 - Ganglion cells:

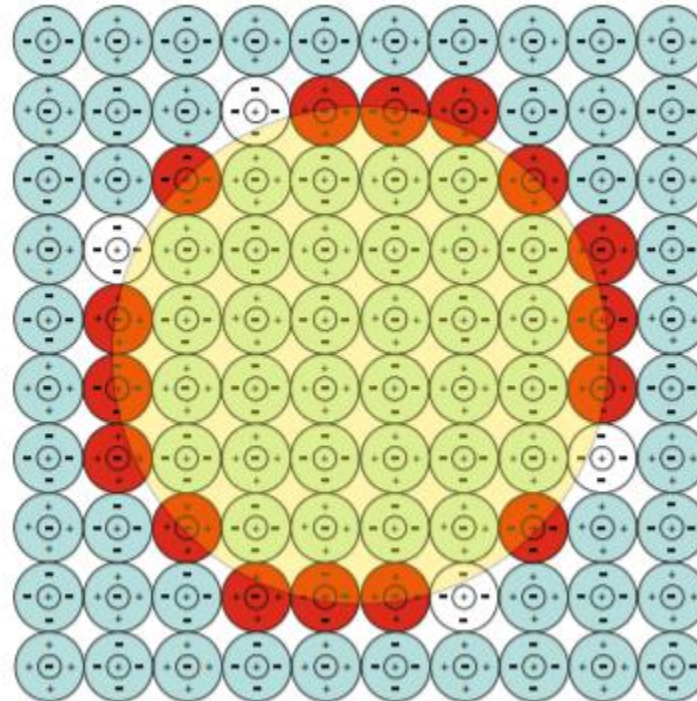


vs. OFF-centre cells



Back to school @IBE-BIV: Human Vision

- Perception: **Receptive fields: ON-OFF processing**



Increased activity



EDGE detection

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More to come...

Thank you

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