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Visio 

## The Charles Bonnet Syndrome

An update

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## Scheme of presentation

- Diagnostic criteria
- Prevalence
- Characteristics
- Examples
- Risk factors
- Consequences
- Treatment options
- Towards a model for understanding CBS



Charles Bonnet  
1760

*Essai analytique sur les facultés de l'âme*

## Definition of hallucination

Perception of visual, auditory, tactile, olfactory, or gustatory experiences without an external stimulus and with a compelling sense of their reality

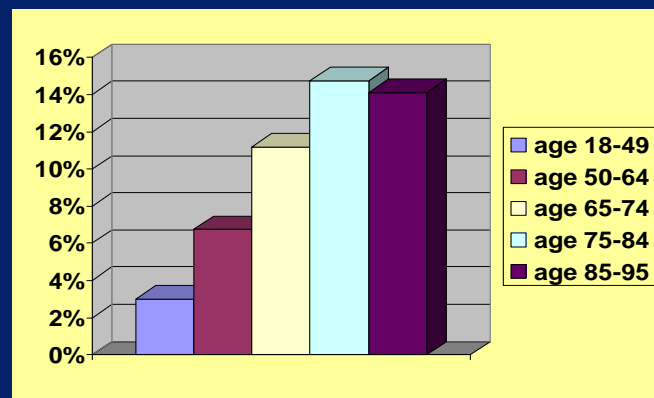
## Diagnostic criteria CBS

- Complex visual hallucinations
- Insight into unreal nature of the hallucinations
- Absence of hallucinations in other sensory modalities
- Absence of delusions

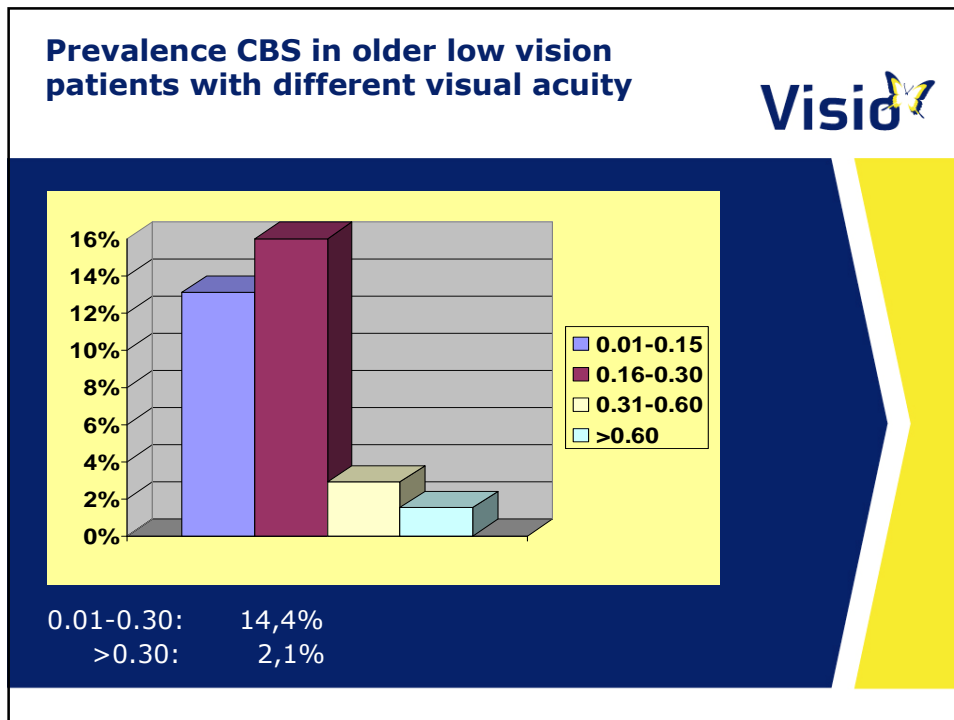
## Differential diagnosis

- Hallucinations of widowhood
- Hypnagogic hallucinations
  - half awake → half asleep: when falling asleep
- Hypnopompic hallucinations
  - half asleep → half awake: when waking up
- Hallucinations as symptoms of epileptic or migraine attacks
- Hallucination due to the use of hallucinogenic drugs
- Hallucinations in exceptional stressful situations
- Hallucinations during PTSD re-experiences
- Hallucinations in case of delirium
- Hallucinations in case of dementia

## Prevalence CBS in 300 low vision patients of different age groups



Age 18-64: 5,1%  
Age >64: 13,1%



- ### Formal characteristics according to Teunisse
- Frequency and duration are variable
  - Usually with eyelids open
  - Sometimes integrated in actual environment, sometimes not
  - Usually not moving along with eye movements
  - Compared with normal images just as clear or even more clear
  - Usually normal colour

## Formal characteristics according to Schultz et al

- Alert
- Eyelids open
- Sharply focused image
- Appears suddenly
- No apparent trigger
- No voluntary control
- Present for seconds
- No movement
- Vanishes suddenly

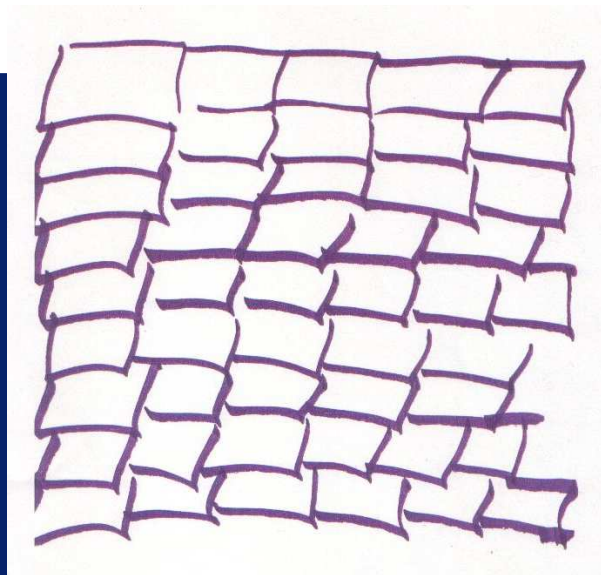
## Content characteristics according to Teunisse

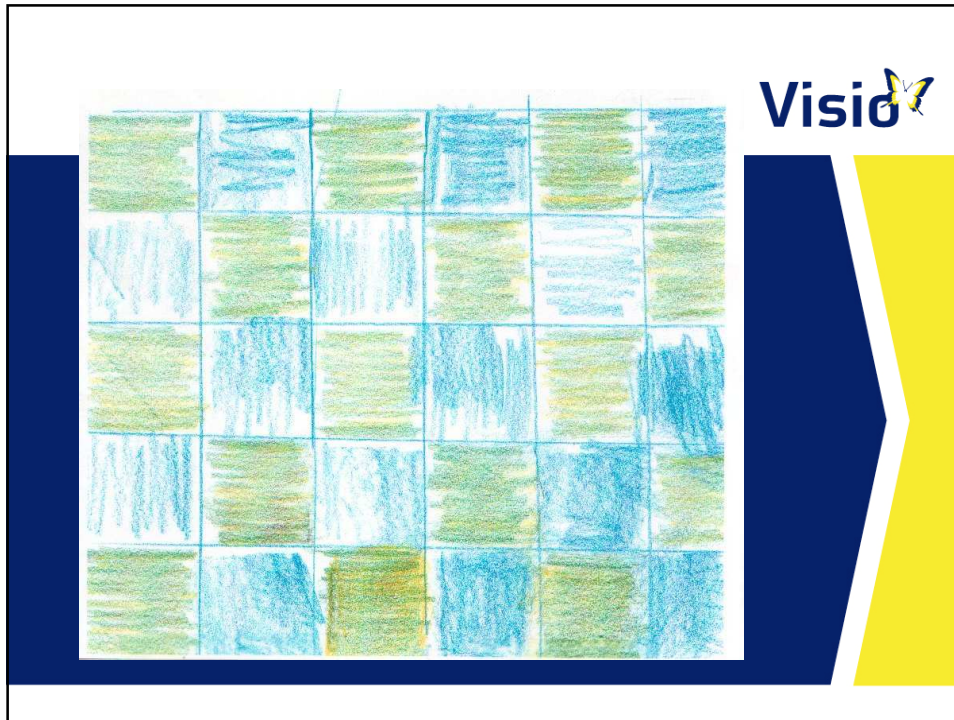
- Hallucinated objects can be:
  - Persons
  - Animals
  - Plants
  - Trees
  - Buildings
  - Landscapes
  - Utensils
- Intrinsic movement or not
- Recurring objects or not
- Usually unfamiliar objects
- Usually personally irrelevant

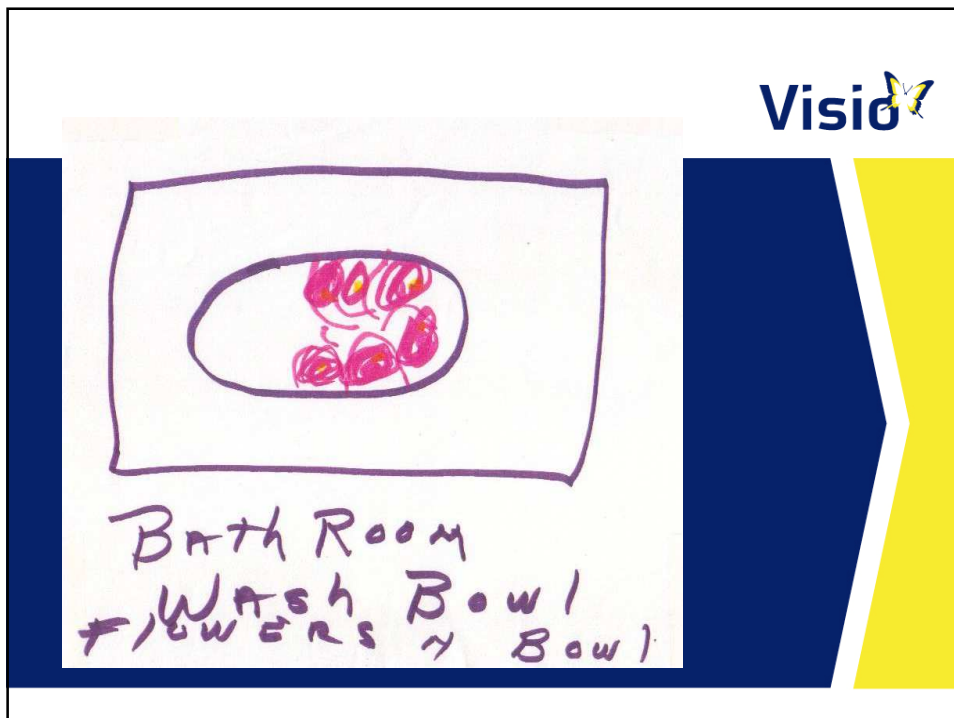
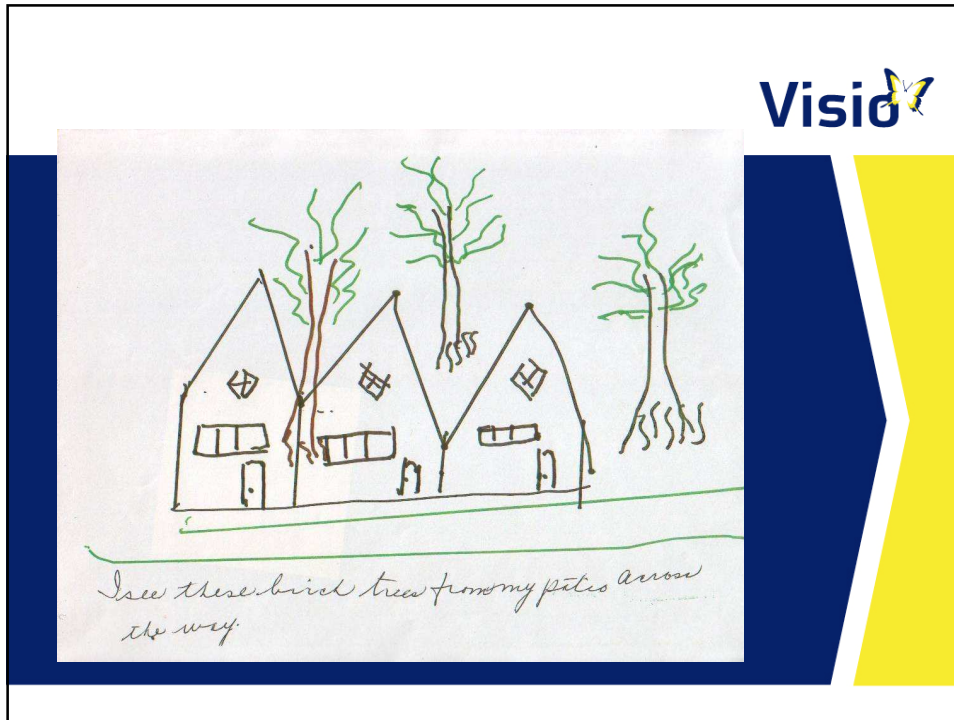
## Content characteristics according to Ffytche

- Hallucinated objects can be:
  - Simple unformed: flashes, lines, dots
  - Geometrical: grids, lattice, fence, brickwork
  - Disembodied faces: grotesque, distorted
  - Figures: costumes, uniforms, hats
  - Branching forms: trees, branches, shrubs
  - Polyopia: multiple copies of same objects in rows/columns
  - Perseveration: veridical object persists on looking away
  - Text: letters, notes
  - Particulate: visual field covered by dots, particles
  - Vehicles: cars, lorries, buses

## Examples thanks to Lylas Mogk









## Example own collection



## Risk factors according to Teunisse

- Loss of energy
- Comorbid somatic disorders
- Beta-blocking medication
- Loneliness
- Low extraversion
- Shyness

## Risk circumstances according to Teunisse

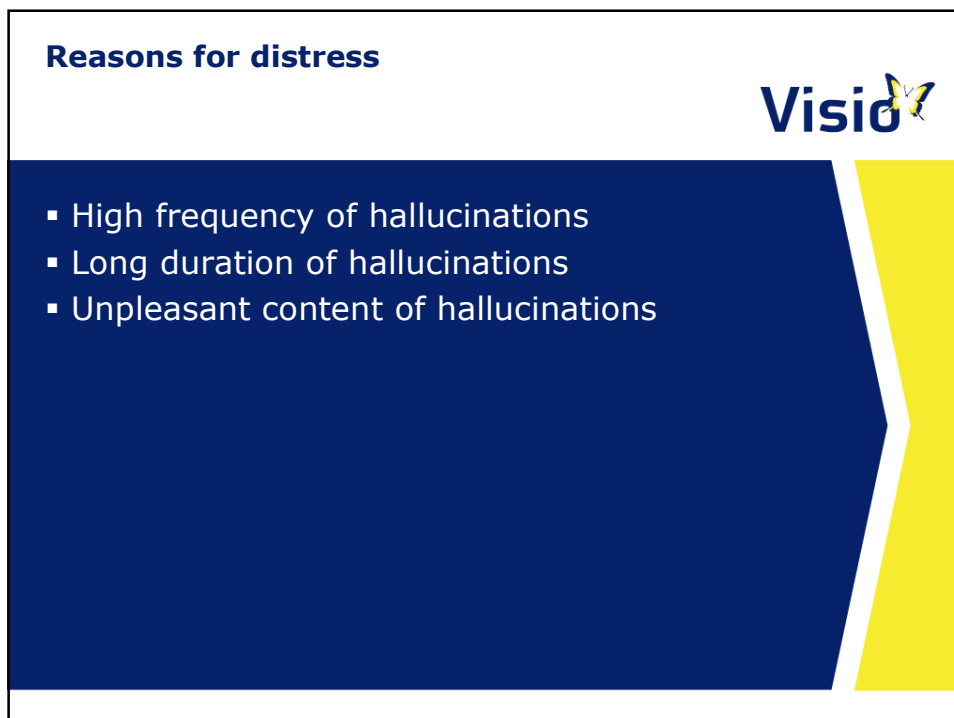
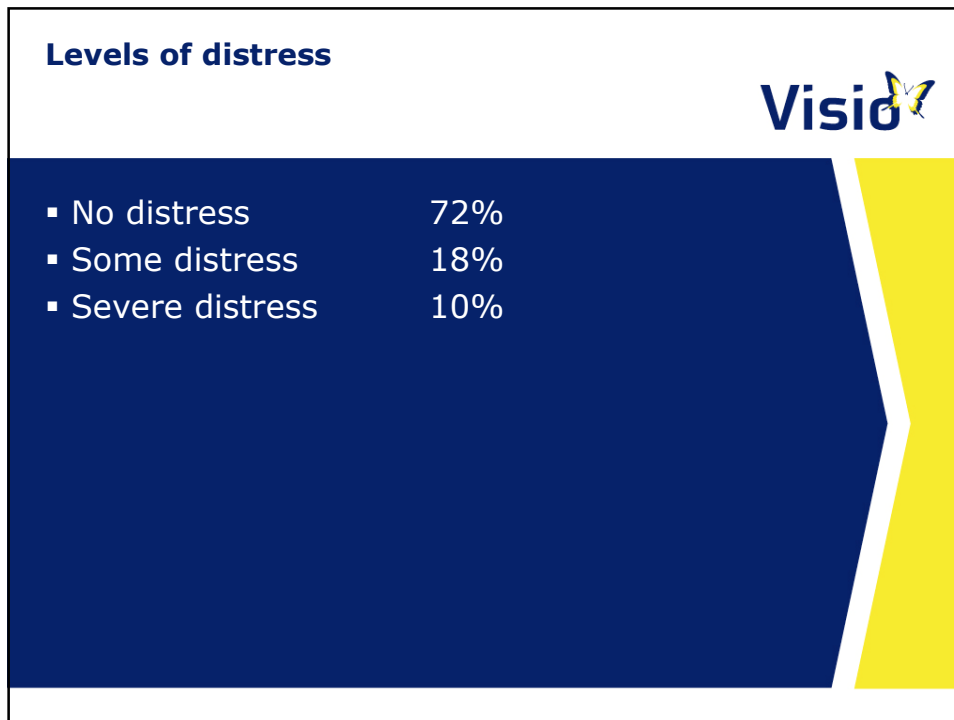


- Evening / night
- Less light intensity
- Being alone
- Domestic environment
- Tiredness
- Stress

## Risk factors according to Ffytche



- Physiological: age, sleep onset/offset, sensory deprivation, photic stimulation
- Neurological: lesions in the visual pathways, epilepsy, migraine, Parkinson's disease
- Psychiatric: delirium, neurodegenerative processes (Alzheimer, Lewy Body dementia), psychosis, bereavement
- Iatrogenic: anti-cholinergic medication, L-dopa



## Treatment options

- Anti-psychotic medication does not work!
- No proven effective interventions
- However:
  - Visual treatment
  - Pharmacological treatment
  - Psycho-social treatment and psychotherapy

## Visual treatment

- Improving acuity
- Optimizing residual vision

## Pharmacological treatment



- Replacing beta-blocking medication
- Optimizing physical condition
- Carbamazepine
- Valproate
- Ondansetron
- Cisapride

## Psychological treatment



- Psycho-education
  - Individual
  - Group approach
- Traditional psychotherapy
- Cognitive behaviour therapy (CBT)

## Psycho-education

- Reassurance by explaining:
  - Many older people with sight loss experience these visual hallucinations
  - It's an official syndrome, called the Charles Bonnet syndrome
  - It is not a sign of a psychiatric disorder, you are not going crazy
- Passing techniques to stop hallucinations

## Techniques to stop hallucinations

- Closing eyes
- Opening eyes
- Blinking
- Moving eyes swiftly
- Looking away or walking away
- Approaching the hallucinated object
- Visual fixation on hallucinated objects
- Putting on a light
- Concentrating on something else / looking for distraction
- Hitting the hallucinated object
- Shouting at the hallucinated object

## Group approach: content



- Aim: reassurance and opportunity to share experiences
- Information
  - Characteristics of CBS
  - Risk factors
  - Techniques to stop hallucinations
- Sharing and exchange of experiences with CBS
- Sharing and exchange of experiences to stop hallucinations

## Group approach: structure



- Open structure
- Build-up is the same every meeting
- Usually clients only participate once, though some want to attend more than one meeting
- Total meeting takes about two hours
- Conducted by a psychologist and a social worker.

## Group approach: experiences



- A group-size of 8 persons would be ideal, but in practice we had small groups of 4 or 5 participants
- The planned frequency for these groups was once every month, but the actual frequency turned out to be once every three months
- The groups were originally planned for visually impaired elderly with CBS, but we included their spouse too.

## Traditional psychotherapy

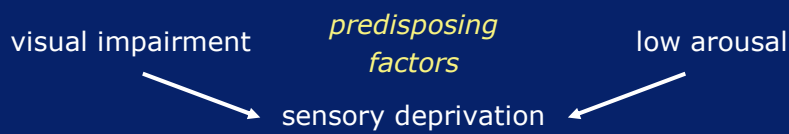


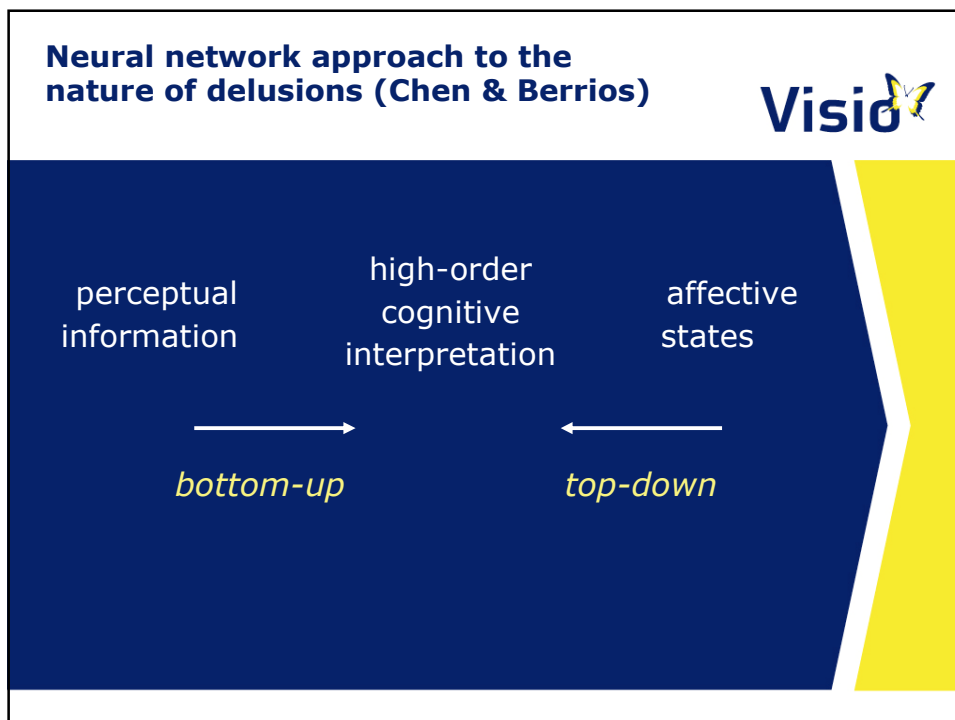
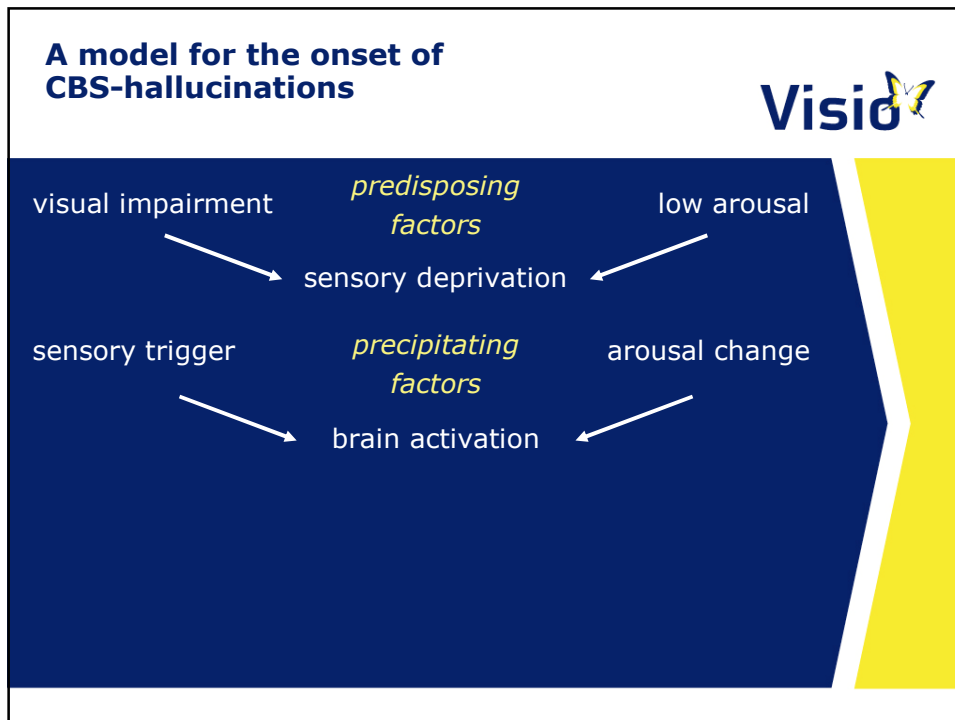
- Exploration of symbolic content of CBS-hallucinations
- Aimed at emotional coping with vision loss

## Cognitive behaviour therapy


- ABC-scheme in which the hallucination is the activating event (A), the meaning attached to this hallucination is the belief (B) and distress through fear or anxiety is the consequence (C)
- By discussing and trying to change B, also C will be changed

## A model for the onset of CBS-hallucinations

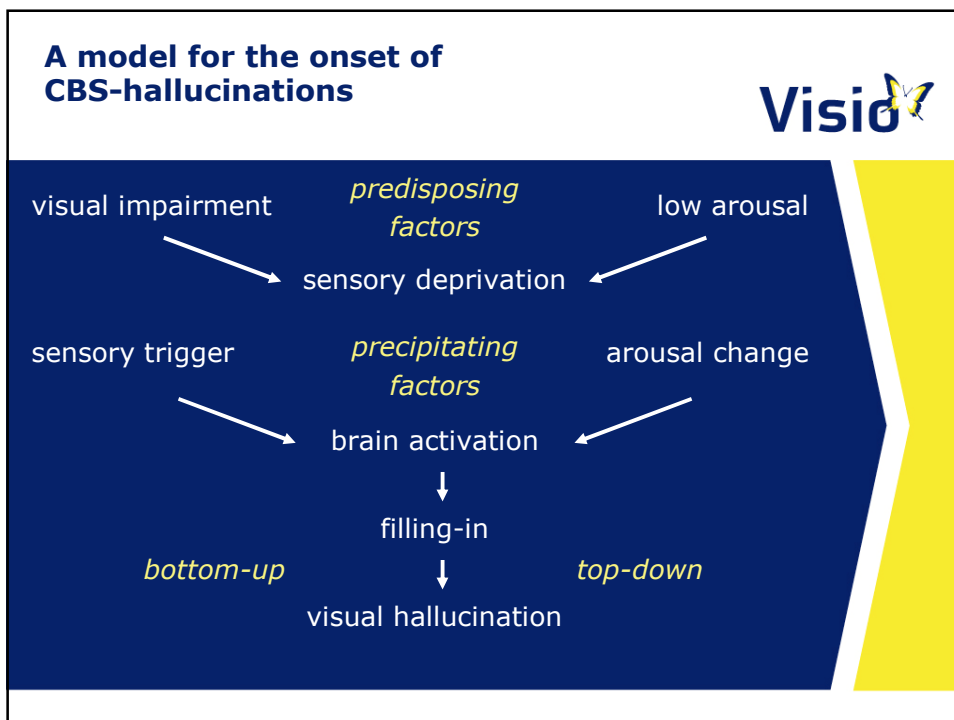





### Neural network approach to CBS-hallucinations



<i>Direction</i>	Bottom-up	Top-down
<i>Source</i>	External sensory triggers	Changing visual attention



### Neural network approach to CBS-hallucinations



<i>Direction</i>	Bottom-up	Top-down
<i>Source</i>	External sensory triggers	Changing visual attention
<i>Content</i>	Related to sensory circumstances	Related to psychological affects
<i>Close to</i>	Illusions	Dreams

