

Visual perception training

User Guide

10. February 2017

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1 General

dob is an educational software suited for the promotion of basic visual and visuomotor skills. It is especially designed for the needs of visually impaired persons. The high extent of individualisation further allows its use in various fields of the curative as well as the special education, in rehabilitation, and as an assisting and observatory instrument in early education.

dob offers a broad range of exercises, covering easy stimulations, generally basic tasks as well as the training of cognitive skills.

Photosensitive Warning

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a computer screen may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy.

2 Setting up **dob**

2.1 **dob** online

This software can be used immediately in a modern browser. **dob**'s most efficiant use is with Chrome or Firefox where it has been extensively tested. Simply bookmark your interface, create a shortcut on your desktop, or add the respective start icon on your iPad/ Android-Tablet.

After starting **dob**, press F11 (Windows) / $\uparrow \Re F$ (Mac) to switch to full screen mode. If you are using an iPad or Android tablet start **dob** by tapping the icon on the home screen.

Delete the browser history after program updates for new features to be adapted properly.

2.2 **dob** App

Download the app from the App Store on your iPad. Tap on **dob** tile to launch the app.



Create an icon on the Home screen (iPad/Android tablet)

3 Using **dob**

3.1 Requirements

3.1.1 General

Through the use of different entry options (touchscreen, switching device, mouse or keypad) the programm takes into account the special conditions of multiply retarded people. In most of **dob**'s exercises, the user's options are limited to a number of two: *confirm* and *continue*, commanded by the keys SPACE > and ENTER χ . Those two commands can also be defined on a switching device, allowing a most individual approach within each exercise. In general, those learning with **dob** should be accompanied by a professional who can explain the exercises and give support where needed.

3.1.2 dob online

dob online can be used on desktop-computers as well as on laptops and tablets.

Desktop computers and laptops: Control by mouse, computer keyboard and switching devices. Connected with a Touchscreen, **dob** can be controlled by gestures additionally. Tablets: Control by gestures. External bluetooth keyboards are not supported.

3.1.3 dob App

dob App works on iOS tablets.

Control with gestures. Connected with an external bluetooth-keyboard, the App supports all **dob** shortcut keys.

3.2 To Start Program

After starting **dob**, press F11 (Windows) / ↑ℜF (Mac) to switch to full screen mode.

3.3 Main Menu and Navigation

After starting the program, the main menu will be displayed. It can be displayed at any time using the key combination 1 + M or gesture \fbox{I} . At the end of a lesson the menu will be displayed automatically.

Usually, the following functions are available:

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€	

Home Back to the main menu

Start Alternative: SPACE

 \rightarrow overview of all keyboard shortcuts and touchscreen gestures It can be displayed at any time using the key combination + \blacksquare .



Main menu

4 Exercise Selection

4.1 Two Approaches

You have access to the individual exercises of **dob** either by choosing a module or by choosing a visual skill.

A module is a specific type of exercise. Within a module, different skills can be trained.



Module selection \rightarrow descriptions of the modules

Visual perception ability requires different skills. The selection of an exercise can also be done by choosing a particular competence of vision.

🔅 Exercise Selection			Module	0	Skill					습
	*			•						
Attention Motility	Coordination	Motion	Contrast	Faces	Color	Crowding	Shape	Memory	Strategy	

Skill selection \rightarrow list of skills and subskills

Press **T** to invert the order of the approaches.

4.2 Choose an Exercise by Module

	Exercise Selection	Module Skill	
Module selection	spot spotPlus zoom track	trace stimula	
	Type identify the direction of the lines	edefined Exercises	Individual Exercises
Draviour and description	Fixat opacity: 25%	Frequency Differentiation L_pos_01, gratings	NO EXERCISES
	Gaze	Frequency Differentiation L_pos_02, gratings	
	Smo	Frequency Differentiation L_pos_03, gratings	
	Mov	Frequency Differentiation L_pos_04, gratings	
- (.	Cont	Frequency Differentiation L_pos_05, gratings	
Type of exercise	- Frequency		
	Recognition	Frequency Differentiation L_pos_07, gratings	
Supplement	Differentiation	Frequency Differentiation L_pos_08, gratings	
	Face	Frequency Differentiation L_pos_09, gratings	
Exercise name and		Frequency Differentiation L_pos_10, gratings	
	Figure-Ground	Frequency Differentiation L_pos_11, gratings	
	Optotypes	Frequency Differentiation L pos_12, gratings	
	Shape	Frequency Differentiation L_pos_13, various pattern	
	Clock	Frequency Differentiation L_pos_14, various pattern	
	Character	Frequency Differentiation L_pos_15, various patient	
		Frequency Differentiation L_pos_10, gradings contrast	
		requency onrerentiation L_col_1, various pattern	
Start exercise or SPACE —			
Start Chereise of Sime			

4.3 Choose an Exercise by Competence

	Exercise Selection	Module Skill	位
Skill selection	Attention Motility Coordination Mo	tion Contrast Faces Color Crowding Shape Memory Strategy	
	Subskill	Predefined Exercises Individual Exercises	
Partial Skill selection	Figure	Search and Find Shape L_pos_c_1, bw 💀 No Exercises	
	Optotypes	Search and Find Shape L_pos_c_2	
		Search and Find Shape L_pos_C_3	
Proviow and description		Search and Find Shape L pos d 2	
		Search and Find Shape L_pos_d_3, tool outline	
	Shape	Search and Find Shape L_neg_c_1, bw	
	Alien	Search and Find Shape L_neg_c_2	
Exercise name and	Search and Find	Search and Find Shape L_neg_c_3	
associated module	Where is?	Search and Find Shape L_neg_d_1, bw	
	Fixation	Search and Find Shape L_neg_d_2	
	Eccentric Fixation	Search and Find Shape L_neg_d_3, outline office	
	Gaze Switching	Search and Find Shape L_col_c_1	
	Smooth Pursuit	Search and Find Shape L_col_c_2	
	Size	Search and Find Shape L_col_d_1	
	Spatial Relations	Search and Find Shape M_pos_c_1, bw	
		Search and Find Shape M_pos_d_1, bw	
Start exercise or SPACE			-)

4.4 Predefined Exercises

dob consists of more than 2000 predefined exercises. \rightarrow overview of all exercises sorted by category on www.dob.li.

4.4.1 Name of Predefined Exercises

The titel of an exercise generally contains a two-part name, a code and is possibly followed by a specification. The first part of the name describes the type of the exercise (e.g. Gaze Switching), the second additional word (e.g. vertical) further limits the type of exercise. The code gives reference to the design of the visual environment. \rightarrow Exercise Catgories and Primary Skill

Example: Gaze Switching vertical L_col_2, animated

Task	Objec	t size	Colors, contrasts Number				
	XXL	maximum size	pos	Dark object on a			
	XL	very large		light background			
	L	large	neg	Bright object on a			
	М	medium		dark background			
	S	small	col	Colored object on a			
	XS	very small		colored or patterned background			
	XXS	minimum size		5			
	R	range, sequence					

The supplements after the code indicate further special features.

bw:	Black object on white background, optimum contrast
	second background color: light gray (glare sensitivity)
animated:	Animated object
vehicles (for example):	Representational objects of a certain category

4.5 Individual Exercises

4.5.1 Copy Predefined Exercises

Predefined exercises can be transferred to *individual exercises*. All exercises defined by the editor will be saved as *individual exercises* as well. To create individual Exercises \rightarrow Editor.



4.5.2 Manage Individual Exercises

Management options

L

- - Add exercise to lessons
- Add exercise to the export area

Copy the selected exercise to Individual Exercises

O Delete exercise

• Open the exercise in the editor

5 Favorites

5.1 General

Favorites takes you to a selection of exercises out of various modules. It can also be adapted according to individual needs. The list can be filtered by skill or by module. Click/ tap on a thumbnail to start the exercise.

5.2 Costumize favorites

Click/tap on 🖉 to edit the list.

<complex-block>

Change the order

Drag the thumbnail with your finger (touchscreen) or mouse to place it wherever you want.

Drag the thumbnail to the edge of the screen to move it to a different page.

Restore

 \checkmark

Restore default settings All changes will be lost!

Exit editing mode

5.3 Save exercises as favorites

Predefined exercises as well as individual exercises can be added

Exercise has already been saved as a favorite.

Individual Exercises will be saved with the module icon and their

Add selected exercise to favorites/Remove exercise

6 Lesson

6.1 General

A lesson consists of several exercises. They can be chosen and combined from all modules or skills.

6.2 Save exercises for lessons

6.3 Create a New Lesson

Before creating a lesson, it is advisable to collect the desired exercises in a separate list or to mark them with the L-function.

Click/tap + below the \rightarrow list of lessons to generate a new lesson. Note: Predefined exercises are marked with a star at the end of the name. Individual exercises are listed at the very end.

6.3.1 Create a lesson by module or skill

6.3.2 Create a lesson by selection L

6.4 Edit a Lesson

Ecsson Selection	Click/tap on to access the settings of the lesson.
Lesson	
01 Horizontal Eye Movement	
02 Contrast	List of exercises in this lesson
03 Ishihara — Color Differentiation	
04 Shape Diffentiation	
05 Figure-Ground — Joshua_april_2013	
	Remove selected exercise
	Change the order
	Move up exercise
	✓ Move down exercise

7 Export

7.1 General

Export and import function allows users to exchange predefined and own exercices or to provide learners with exercises centered around a certain topic.

7.2 Save exercises for the export

7.3 Manage export data

Click/tap the *Export* button in the main menu to reach the administrative area of the exercises intended for export. Here, a maximum of five exercises can be prepared for export, encoded as a QR-Code and then exported as an image file.

Prepare the export

Øpen editing options

Drag exercises determined for export with your finger (touchscreen) or mouse into the light grey target area.

Übung aus dem Export entfernen

7.3.1 Export exercises dob online

Exercises in the light gray area will be encoded to QR-Code (maximum five)

QR-Code will be exported as an image file.

7.3.2 Export exercises **dob** App

Exercises in the light gray area will be encoded to QR-Code (maximum five)

Save the QR code: Press and release the Sleep/Wake button and the Home button at the same time. The screenshot is added to your camera roll album.

8 Import

8.1 General

Favorites takes you to the area to import exercises and manage them.

The exercises of **dob pro** can be completed by additional exercises. They are provided by other **dob pro** users as a QR-Code.

8.2 Import exercises **dob** online

Organisieren • Neuer Ordner Figure-Ground - Joshua October 2014.png Dateiname: Figure-Ground - Joshua October • Alle Dateien							<u></u>
Organisieren • Neuer Ordner Figure-Ground - Joshua October 2014.png Dateiname: Figure-Ground - Joshua October • Alle Dateien Öffnen • Abbrechen Abbrechen	- U - E	port dob		• ⁽ 7	Export dob durc	hsuchen	٩
Figure-Ground - Joshua October ZU14.png Dateiname: Figure-Ground - Joshua October Alle Dateien Alle Dateien Öffnen	Organisieren 🔻	Neuer Ordno	er			•	0
Dateiname: Figure-Ground - Joshua October 🔹 Alle Dateien 💌 Öffnen 💌 Abbrechen	Figure-Ground - Joshua October 2014.png						
		Dateiname:	Figure-Ground - Joshua Oo	tober 🔻	Alle Dateien	Abbreche	• n

8.3 Import exercises **dob** App

₹

1. Tap *Import* 2. Tap *Select file*

3. Choose the QR-code and confirm the selection

Exercises will be extracted and displayed in the import area.

Note: An image of the QR-Code can actually not be taken and imported by tablet camera.

Clic on *Import* gives access to the code scanner. Move the green frame over the code image. It will automatically be scanned and the exercices will be loaded to in the import area. 9 Modules

Recognize an object 1 spot

9.1.1 Task

9.1

An object will appear on the screen. Locate, recognize and name it. Alternative: The object on the screen is in motion.

9.1.2 Course of Exercise

- If necessary, a preview of the requested object will be shown.
- Click/tap on the start button or press SPACE.
- An object will appear on the screen. Locate, recognize and name it. The preview can be shown within the task using Shift + H.
- Alternative: The object is in motion.
- Click/tap on the object. Alternative: SPACE

Within exercises, animation, object size, contrast, background color and pattern can be changed using keyboard shortcuts.

- \rightarrow Shortcut keys all modules, individualization module **spot**
- → Create individual exercises: Editor all modules, editor module **spot**

9.1.3 Exercises

- Fixation random, peripheral right-left, peripheral up-down
- Visual Field right, left, up, down
- Gaze Switching horizontal, vertical, diagonal
- Smooth Pursuit *horizontal, vertical, diagonal, circle, square, triangle*
- Movement central
- Contrast
- Frequency Recognition, Differentiation
- Color Recognition, Differentiation
- Face Recognition, Interpretation
- Figure-Ground
- Optotypes Lea-Symbols, Landolt Rings, Tumbling E
- Shape Recognition, Scanning, Recognition
- Clock
- Character Letters, Numbers
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Examples

Gaze Switching horizontal | M_pos_1, bw

Smooth pursuit eye movements diagonal | L_col_3, funicular

Face Interpretation | XL_pos_1

Figure-Ground | L_col_2

Frequency Recognition | L_pos_1, gratings

Clock | XL_pos_4

spotPlus Recognize an object and distinguish it from others

9.2.1 Task

An object will be indicated. It will then appear either singular or multiple with other objects, differentiating in shape and/or color. Locate and name the indicated object.

9.2.2 Course of Exercise

- A preview of the requested object properties will be shown.
- Click/tap on the start button or press SPACE.
- The object will appear either singular or multiple with differing objects. The preview can be shown within the task using Shift + H.
- Click/tap on the requested objects. If there are only two objects, confirmation with SPACE is possible.
- → Shortcut keys all modules, individualization module **spotPlus**
- → Create individual exercises: Editor all modules, editor module **spotPlus**

9.2.3 Properties

Color or color combination Opacity \rightarrow Color combinations

It's possible to search by individual properties or combinations of properties as well.

One property

Task (Example):

Combination of properties

- Collect all the blue objects. Shape, opacity and size are irrelevant.

Size

Task (Example): Collect all the red triangles. Opacity and size are irrelevant.

 $(\mathbf{\tilde{e}})$

 (\cdot)

(تت)

Separation | XL_col_b_1

Character Letters | L_neg_d_1

Where is ...? | S_col_d_1, birds

Crowding Framework | S_pos_c_2

Examples

 \bigcirc

(

Eccentric Fixation right | M neg a 2

Alien | M_col_a_1, emoticons

9.2.4 Layout

There are five possibilities to arrange the objects on the screen:

- a Line horizontal, vertical or skewed and diagonal
- b Circle
- c Grid arranged in a grid, for example 5x4 objects
- d Random minimum distance between objects, distributed over the entire screen
- e Crowd minimum distance, the objects move closer

There is a hint to the layout in the title code.

Example: *search and find: Shape S_neg_c_1* Sought in this exercise: Small bright shapes on a dark background arranged in a grid.

9.2.5 Exercises

- Eccentric Fixation *right, left, up, down, random, circle*
- Visual Field *right, left, up, down, up right, up left, bottom right, bottom left, random*
- Contrast
- Frequency Recognition, Differentiation, Comparison
- Color Recognition, Differentiation
- Face Recognition, Interpretation
- Crowding Area, Framework, Outline, Optotypes
- Separation Area, Framework, Outline
- Shape Differentiation
- Figure-Ground
- Optotypes Lea-Symbols, Landolt Rings, Tumbling E
- Character Letters, Numbers
- Spatial Relations
- Alien
- Pattern Recognition
- Search and Find Shape, Color, Size, Shape and Color
- Where is ...?
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Examples

Line: Spatial Relations | M_col_a_1

Grid: search and find Color | S_neg_c_1

Crowd: Color Differentiation | XS_pos_e_2

Random: Frequency Differentiation | M_col_d_1

9.3.1 Task

An object will appear on the screen that is either too small or too big. The size of the object will vary until you recognize it.

Alternative: An object with either low or high opacity will appear on the screen. The opacity of the object will vary.

Stop the variation with the S-key.

9.3.2 Course of Exercise

- If necessary, a preview of the requested object will be shown.
- Click/tap on the start button or press SPACE.
- An object will appear on the screen that is either too small or too big. The size of the object will vary until you recognize it.
- Alternative: The opacity of the object will vary until you recognize it/until you can't recognize it any more.
- Click/tap on the object. Alternative: SPACE

The variation can be stopped by the S-key.

- \rightarrow Shortcut keys all modules, individualization module **zoom**
- \rightarrow Create individual exercises: Editor all modules, editor module zoom

9.3.3 Properties

Object size and/or opacity will increase < or decrease > either continuously or gradual.

There is a hint to the type of modification in the title code. Example: *Shape Detection XS_col_<_2, fruits* Requested: Fruits on a colored background. Object size increases.

9.3.4 Exercises

- Movement central
- Contrast
- Frequency Recognition, Differentiation
- Face Recognition, Interpretation
- Optotypes Lea-Symbols, Landolt Rings, Tumbling E
- Shape Scanning, Recognition, Detection
- Character Letters, Numbers
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Examples

Shape Detection | XS_col_<_3, fruits

Shape Scanning | XXL_col_>2, animals

Contrast | XL_pos_<_1, Hiding Heidi

Optotypes Tumbling E | XS_neg_<_3

Frequency Differentiation | M_col_<_1

Movement central | S_col_<_1

9.4.1 Task

Move an object with the mouse, the arrow keys or your finger (touchscreen) along a line.

9.4.2 Course of Exercise

- An object on a track will be shown.
- The object that is to be moved, flashes.
- Move it with the mouse, the arrow keys or your finger (touchscreen) along the line.
- Alternatives:
- A target object is placed at the end of the line.
- Several target objects are placed along the line.
- Move it with the mouse, the arrow keys or your finger (touchscreen) along the line to the target object(s).
- In the categories without goal you will receive a feedback. It will tell you the number of bumps or falls (optional).
- A feedback at the end of the task will tell you the number of bumps or falls (optional).

Within exercises, line type, width and contrast of the line, animation of target object, background color and pattern can be changed using keyboard shortcuts.

- \rightarrow Shortcut keys all modules, individualization module track
- \rightarrow Create individual exercises: Editor all modules, editor module track

Exercises

- Stay in lane with goal
- straight lines, corner, curve, spiral, stair, geometric shape, free shape
- Stay in lane without goal straight lines, corner, curve, spiral, stair, geometric shape, free shape, loop
- Balancing with goal
- straight lines, corner, curve, spiral, stair, geometric shape, free shape
- Balancing without goal straight lines, corner, curve, spiral, stair, geometric shape, free shape, loop
- Collecting goals, track straight lines, corner, curve, spiral, stair, geometric shape, free shape
- Collecting goals, line straight lines, corner, curve, spiral, stair, geometric shape, free shape
- \rightarrow Track List (pdf) on www.dob.li.
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Examples

Stay in lane with goal stair | L_neq_2

Stay in lane without goal straight lines | L_col_5 vertikal

Balancing without goal spiral | M pos 2

Collecting goals, line corner | M_col_1

Balancing without goal loop | L pos 7

Collecting goals, line curve | M_pos_2

9.5.1 Task

Move an object with the mouse, the arrow keys or your finger (touchscreen), to follow another object.

9.5.2 Course of Exercise

- An object and a target object on a track will be shown.
- The object that is to be moved, flashes.
- As soon as the object is moved, target object will also move. The track will disappear.
- Move the object with the mouse, the arrow keys or your finger (touchscreen) and follow the target object as closely as possible.
- The object is not tied to the line. In contrast to the exercises in track, it can be moved freely on the screen.
- At the end of each task you will receive a feedback. It will show you the precision of your track (a. follow an object) or the number of object catches (b. catch an object) (optional).

Within exercises type of appearance and animation of target object, background color and pattern can be changed using keyboard shortcuts.

- \rightarrow Shortcut keys all modules, individualization module trace
- \rightarrow Create individual exercises: Editor all modules, editor module trace

Exercises

- Follow an object

straight lines, corner, curve, spiral, stair, geometric shape, free shape, loop, random

- Catch an object

straight lines, corner, curve, spiral, stair, geometric shape, free shape, loop, random

- \rightarrow Track List (pdf) on www.dob.li.
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Examples

Follow an object corner | XL pos 1

Follow an object loop | L pos 10

Follow an object spiral | L_neg_2

Catch an object curve | M_col_1

Catch an object geometric shape | L_col_04

Catch an object stair | M_pos_2

9.6.1 Task

Look at patterns differentiating in color, shape, size or location. Press the E-key or run over the objects with the mouse or finger (touchscreen) for a surprise.

9.6.2 Course of Exercise

- A pattern will be shown that is changing color, shape, size or position.
- Press E or touch the highlighted objects to trigger an additional effect.
- Some exercises respond to mouse movements. Touchscreen: Slide your finger on the screen.

Within exercises contrast, movement speed and direction, background color and pattern can be changed using keyboard shortcuts.

- \rightarrow Shortcut keys all modules, individualization module stimula
- \rightarrow Create individual exercises: Editor all modules, editor module stimula

9.6.3 Exercises

- Spot
- Line
- Area
- Interactive
- OKN
- \rightarrow Overview of all exercises sorted by category on www.dob.li.

Photosensitive Warning

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a computer screen may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy.

Examples

Stimulation Spot 1000

Stimulation Spot 1005

Stimulation interactive 8010

Stimulation Spot 1003

Stimulation Spot 3000

Stimulation OKN | L_pos_2

10 Program Control Using Keys and Touch Screen

Key commands or gestures on a touchscreen enable learners to adapt the visual environment while using the program and therefore matching their individual needs.

 \rightarrow Keyboard shortcuts and touchscreen gestures (pdf) on www.dob.li.

10.1 Program Control

Keys	Gestures	Description	Effect	
1 + 1		Information	List of shortcut keys and gestures	
1 + M	[Menu	Show / Hide main menu	

10.2 Within an Exercise

Keys	Gestures	Description	Effect	
	>	SPACE	Start task / Confirm task	
enter	X	ENTER	Start / Quit exercise	
1 + P	\bigcirc	Preferences	Preferences of the current exercise	
1	\checkmark	1	1st background color and pattern	Gesture: Change between the two background colors
2	\checkmark	2	2nd background color and pattern	Gesture: Change between the two background colors
3		3	Change background pattern <	
4		4	Change background pattern >	
5		5	Reduce size of background pattern	
6		6	Increase size of background pattern	
7		7	Reduce distance of background pattern	
8		8	Increase distance of background pattern	
0		0	No background pattern	
N		Normal	Restore the initial settings of the task	
1 + ctrl + N		Normal	Restore the initial settings of the exercise	
Keys	Gestures	Description	Effect	
---------------------	----------	-------------	-------------------------------	--
① + ctrl + 3			Move background left	
1 + ctrl + 4			Move background right	
1 + ctrl + 5			Move background up	
(î) + (ctrl) + 6			Move background down	
(î) + (ctrl) + (8)			Slow dow background movement	
1 + ctrl + 9			Accelerat background movement	

10.3 Individualization spot: fixed object

spot					
Keys	Gestures	Description	Effect		
	T	KEY DOWN	Reduce the object		
	l	KEY UP	Enlarge the object		
	•	KEY LEFT	Reduce the object's opacity		
	-	KEY RIGHT	Increase the object's opacity		
A		Animation	Start / Stop the animation	Flicker (opacity) -> Stop -> up / down -> Stop	
1 + H	\bigtriangleup	Hint	Show the requested object	Only tasks with preview	

10.4 Individualization spot: object in motion

spot				
Keys	Gestures	Description	Effect	
	T	KEY DOWN	Slow down the movement	
	Ţ	KEY UP	Accelerate the movement	
	Ī	KEY DOWN	Reduce the object	
① + Ctrl + ▲	Ţ	KEY UP	Enlarge the object	
	•	KEY LEFT	Reduce the object's opacity	
		KEY RIGHT	Increase the object's opacity	
A		Animation	Start / Stop the animation	Flicker (opacity) -> Stop -> up / down -> Stop
S		Start / Stop	Start / Stop movement	
D		Direction	Reverse direction of movement	
T		Тіре	Change type of movement	stop + go -> yoyo hard -> yoyo soft -> continuous
1 + H	\bigtriangleup	Hint	Show the requested object	Only tasks with preview

10.5 Individualization spotPlus

spotPlus					
Keys	Gestures	Description	Effect		
	T	KEY DOWN	Reduce requested objects		
	l	KEY UP	Enlarge requested objects		
		KEY LEFT	Reduce requested objects' opacity		
	-	KEY RIGHT	Increase requested objects' opacity		
A		Animation	Start / Stop the animation	Flicker (opacity) -> Stop -> up / down -> Stop	
① + Ctrl + ▼	Ţ	KEY DOWN	Reduce all objects		
① + Ctrl + ▲	L	KEY UP	Enlarge all objects		
① + Ctrl + ◄		KEY LEFT	Reduce opacity of all objects		
① + ctrl + ►	-	KEY RIGHT	Increase opacity of all objects		
1 + ctrl + A		Animation	Start / Stop the animation of all objects	Flicker (opacity) -> Stop -> up / down -> Stop	
1 + H	\bigtriangleup	Hint	Show the requested objects	Only tasks with preview	

10.6 Individualization zoom

zoom				
Keys	Gestures	Description	Effect	
	T	KEY DOWN	Zoom slow	
	l	KEY UP	Zoom fast	
	Ī	KEY DOWN	Reduce the object	at the end of zooming
	Ţ	KEY UP	Enlarge the object	at the end of zooming
	•	KEY LEFT	Reduce the object's opacity	
	-	KEY RIGHT	Increase the object's opacity	
A		Animation	Start / Stop the animation	Flicker (opacity) -> Stop -> up / down -> Stop
S		Start / Stop	Start / Stop movement	
1 + H	\bigtriangleup	Hint	Show the requested object	Only tasks with preview

10.7 Individualization track

track					
Keys	Gestures	Description	Effect		
	T	KEY DOWN	Move down object		
	Ţ	KEY UP	Move up object		
	•	KEY LEFT	Move object left		
	-	KEY RIGHT	Move object right		
A		Animation	Start / Stop the animation of the target object		
Τ		Тіре	Change type line	dotted -> dashed 1 -> dashed 2 -> dashed 3 -> dashed 4 -> dahed 5 -> solid	
① + ctrl + ▼	T	KEY DOWN	Reduce line width		
û + ctrl + ▲	Ţ	KEY UP	Increase line width		
	•	KEY LEFT	Reduce track's opacity		
	-	KEY RIGHT	Increase track's opacity		

10.8 Individualization trace

trace				
Keys	Gestures	Description	Effect	
	T	KEY DOWN	Move down object	
	Ţ	KEY UP	Move up object	
	•	KEY LEFT	Move object left	
		KEY RIGHT	Move object right	
A		Animation	Start / Stop the animation of the target object	

10.9 Individualization stimula

stimula					
Keys	Gestures	Description	Effect		
	T	KEY DOWN	Slow down movement		
	L	KEY UP	Accelerate movement		
	•	KEY LEFT	Reduce objects' opacity		
	•	KEY RIGHT	Increase objects' opacity		
E		Effect	Special effect		
S		Start / Stop	Start / Stop movement		
D		Direction	Reverse direction of movement		
	T	KEY DOWN	stimula 8000: Reduce the object	stimula 8000 only	
	l	KEY UP	stimula 8000: Enlarge the object	stimula 8000 only	
		KEY LEFT	OKN: More stripes (wide stripes)	OKN only	
		KEY RIGHT	OKN: Less stripes (narrow stripes)	OKN only	

11 Overview

11.1 Modules

Module		Aim
	spot	Recognize an object 1
	spotPlus	Recognize an object and distinguish it from others
_	zoom	Recognize an object 2
	track	Follow a track
	trace	Follow an object
*	stimula	Stimulation

11.2 Exercise Categories and Primary Skill

Category	Supplement	Primary Skills
Stimulation	Spot Line Area Interactive OKN	Attention Shifting Attention Attention Shifting Attention Attention Sustaining Attention Coordination Hand and Eye Coordination Motility Optokinetic Nystagmus
Fixation	random peripheral right-left peripheral up-down	Motility Fixation
Eccentric Fixation	right left up down random circle	Attention Visual Field
Visual Field	right left up down up right up left down right down left random	Attention Visual Field
Gaze Switching	horizontal vertical diagonal	Motility Saccadic jumps
Smooth pursuit	horizontal vertical diagonal circle square triangle	Motility Smooth pursuit eye movements

Category	Supplement	Primary Skills
Stay in lane with goal	straight line corner curve spiral stair geometric shape free shape	Coordination Hand and Eye Coordination
Stay in lane without goal	straight line corner curve spiral stair geometric shape free shape loop	Coordination Hand and Eye Coordination
Balancing with goal	straight line corner curve spiral stair geometric shape free shape	Coordination Hand and Eye Coordination
Balancing without goal	straight line corner curve spiral stair geometric shape free shape loop	Coordination Hand and Eye Coordination
Collecting goals, track	straight line corner curve spiral stair geometric shape free shape	Coordination Hand and Eye Coordination

Category	Supplement	Primary Skills
Collecting goals, line	straight line corner curve spiral stair geometric shape free shape	Coordination Hand and Eye Coordination
Object Pursuit		Coordination Hand and Eye Coordination
Movement	central	Motion Perception central
Contrast		Contrast Sensitivity Contrast
Frequency	Recognition Differentiation Comparison	Contrast Sensitivity Frequency
Face	Recognition Interpretation	Face Perception Recognition Face Perception Interpretation
Color	Recognition Differentiation Matching	Color Recognition Color Color Recognition Color Color Recognition Color Association
Crowding	Area Framework Outline Optotypes	Separation Ability Crowding
Separation	Area Framework Outline	Separation Ability Figure-Ground Perception
Figure-Ground		Separation Ability Figure-Ground Perception
Optotypes	Lea-Symbols Landolt Rings Tumbling E	Shape Recognition Figure

Category	Supplement	Primary Skills
Shape	Scanning Recognition Differentiation Detection Completion	Motility Visual Scanning Shape Recognition Figure
Clock		Shape Recognition Figure
Character	Letters Numbers	Shape Recognition Figure
Spatial Relations		Shape Recognition Spatial Relations
Alien		Shape Recognition Figure
Image	Reproduction Completion	Shape Recognition Figure
Pattern	Recognition Reproduction Completion	Visual Memory Pattern
Arrangement	Size Color Family	Visual Memory Sequences
Search and Find	Shape Color Size Shape and Color Shape and Size Color and Size	Strategies Search Strategies
Where is?		Strategies Search Strategies
Paint		

11.3 Skills and Assignment of Modules

Skill		Subskill	Assignment of Modules
	Visual Attention	Sustaining Attention Shifting Attention Visual Field Dividing Attention	spot, zoom, track, trace, stimula spot, track, trace, stimula spot, spotPlus, track, trace track, trace
	Motility	Fixation Visual Scanning Visual Comparison Saccadic jumps Smooth pursuit eye movements Optokinetic Nystagmus	all modules spot, zoom, track, stimula spotPlus, track spot, track, trace spot, track, trace stimula
*	Coordination	Hand and Eye Coordination	track, trace
•	Motion Perception	Central Motion Radial Motion	spot, zoom, track, trace, stimula
0	Contrast Perception	Contrast Spatial Frequency	spot, spotPlus, zoom spot, spotPlus, zoom
	Face Perception	Recognition Interpretation Completion	spot, spotPlus spot, spotPlus
9	Color Recognition	Color Grey Black White Color Association	spot, spotPlus spotPlus
	Separation Ability	Figure-Ground Perception Crowding	spot, spotPlus spotPlus
0	Shape Recognition	Figure Size Spatial Relations	spot, spotPlus, zoom spotPlus, zoom spot, spotPlus
	Visual Memory	Short-term Memory Pattern Sequences	spotPlus spotPlus sort
6	Strategies	Search Strategies	spotPlus

12 Evaluation exercise

While you are working, **dob** captures any typing and clicks on your computer screen, whether these are right or wrong and measures the time span between any action on the computer screen. A simple click on the \bigcirc button in the main menu will open evaluation settings.

Note: Exercises are not evaluated in module *stimula*.

12.1 Evaluation settings



Exercise data are stored.

Data are not stored.

Access to the stored evaluations

dob can only store a limited number of exercices.The number depends on the complexity of the data.Take screenshots of important evaluations to store them permanently.

12.2 General options

		Navigate through Delete evaluations evaluation	Module	Exercise name and thumbnail	Back to the main menu
	🔅 Evaluation de l'exercice	$\langle \rangle \Theta$	spot	Optotypes Lea-Symbols XL_pos_2, colored	ඛ
Personal notes	Jacob / identified all shapes				
Date and time		Date	Time		
Total Duration: Time per complete exercise		2016-08-24	07:56		
Sum Tasks: Duration minus the time for	Exercise: Duration	Total Duration [sec]	Sum Tasks [sec]		
confirmations and rewards = pure exercise time		40.0	23.7		2
Task list					
	1 1.00		4.4		
	2 1.00		6.1		
	3 1.00		6.0		
	4 1.00		7.1		
Average time per task	Task: Duration		Average [sec] 5.9		

Notes, objects and values

Activities on the screen

12.3 Evaluation examples

Depending on module or exercise category, evaluation shows different values and presents the activities on a single or on several screens.

12.3.1 Evaluation 1: Module spot – Gaze Switching horizontal

	🔅 Exercise Evaluation	$\langle \rangle \Theta$	spot	Gaze Switching horizontal S_neg_1
Personal notes	Jacob / Difficulties on the right	t – animated object in task 12 to support detecti	on	
		Date 2016-08-23	Time 16:07	
	Exercise: Duration	Total Duration [sec] 58.0	Sum Tasks [sec] 58.0	
Task / Opacity / Time between beginning task and click / Thumbnail object	Task / Opacity 1 1.00	Error after [sec]	Correct after [sec]	
Click outside any object (error time) Task 2:	2 1.00 3 1.00	4.5 7.5	11.2	1 6 10 8 27 11 😤
Task 12: 2 Clicks on the left side above the object	4 1.00 5 1.00		1.9	*
Observations and interpretations • Needs much more time for objects	6 1.00 7 1.00		2.2	
at the right edge of the screen.At the right side many clicks outside	8 1.00 9 1.00		1.9	The activities on the screen are dis
 Restrictions of the visual field? 	10 1.00		2.4	played on one screen for following exercise categories:
	11 1.00 12 1.00	5.7 10.5	3.0	 Fixation spot Gaze Switching spot Visual Field spot, spotPlus
	Task: Duration		Average [sec]	

4.8

12

22

匬

12.3.2 Evaluation 2: Module spotPlus – Search and find shape

	🔅 Exercise Evaluation	$\langle \rangle \Theta$	spotPlus	Search and find shape R_neg_c_1	습
Personal notes	Jacob / Confuses shapes (filled squ	uare with frame)			
		Date	Time		
	Exercise: Duration	2010-08-24 Total Duration [sec]	IZ:UZ Sum Tasks [sec]	V 🝙	1
		290.0	212.1		— 4
Task / Time until click on the	Aufgabe		Klick nach [sec]		•••
correct object / Object	1		3.0 • 3.9 •		Ö
	2		3.0 💙 4.2 💟	V	😫 🔼
Time until click on the wrong object / Object	3	5.6 🔲 9	9.1 13.6 17.2	rs 🧐 🗱	8 8
Task 3, 5, 8: Click on the wrong object	4	10	0.1 🔀 13.1 🔀 15.9 👥	41 18	(7) 18 (2)
	5 5.5	9.8 12.9	3.6 🔳 23.4 🔳 28.5 💻		🧶 🤷 🖪
	6	5.4 🐹 10.1 🔀 14	4.0 🔀 26.1 💓 34.5 🔀		
Time until click outside the object	⁷ 8.3 13.3 17	.5 💽 21.4 25.6 💽 30	5.0 💽 41.6 💽 47.3 💽	6 M Q	
Task 7: 2 clicks beside object	8 6.8 🔲 11.6	26.2 34.9 4	3.0 48.9 52.7		
Skipped task (SPACE) Task 9 and 10: breaking off	9		5.2		
	10		2.8		
Observations and interpretations					
Confuses shapes (filled square with frame)			21.2	9 10 SP.	ACE
No systematic search					

 Overwhelmed with increasing number of objects

Practice search strategies

Activities are displayed on 6 screens. Exercises with more than 6 tasks share clicks of several tasks (e.g. task 1 and 2) on one screen.

12.3.3 Evaluation 3: Module zoom – Contrast

	🔅 Exercise Eva	luation	<	Э	zoom	Face interpretation L_pos_<_1	
Personal notes	Jacob / Faster de	tection of objects on the	e left side				
			2016-08	Date -23	Time 16:42		
Task /	Exercise: Duration		Total Duration	sec] 8.0	Sum Tasks [sec] 57.9		4
Opacity: Change from 0 to 100% /	Task: Opacity	from	to	Click at	Duration [sec]	*	
Time until click / Object	1	0.00	1.00	0.28	2.8 😟		3
<i>Object detected at 70% opacity after 7 seconds</i>	2	0.00	1.00	0.77	7.7 🕥		
	3	0.00	1.00	0.70	7.0 🖭		
	4	0.00	1.00	0.81	8.1 🖲		
Clicks outside object	5	0.00	1.00	0.22	2.2 😨		
Task 2 and 9: One click outside object	6	0.00	1.00	0.39	3.9 🙁	5	
	7	0.00	1.00	0.61	6.1 🙁		
	8	0.00	1.00	0.18	1.8 😁		
	9	0.00	1.00	0.83	8.3 🙂		10
Observations and interpretations	10	0.00	1.00	1.00	10.0 😨	9	

Observations • Enjoys working with emoticons

- Can interpret facial expressions
- Faster detection of objects on the left side
- Restrictions of the visual field?

Task: Duration

Average [sec]

5.8

Activities are displayed on 6 screens. Exercises with more than 6 tasks share clicks of several tasks (e.g. task 5 and 6) on one screen.

12.3.4 Evaluation 4: Module track – Collecting goals

	្ល៊ែ ស	ercise Evaluation	<	<	> Θ	trac
Personal notes	Jacob /	Difficulties with mov	ements away	from and	l towards the b	ody
					Date 2016-08-24	Tim 12:3
	Exercise: D	uration		T	Total Duration [sec] 151.0	Sum Tasks [sec 112
Task /	Task / Nurr	ber of hits				Hit after [see
Time until reaching the target	1	-				9.0
	2	2				5.8 9.4 15.3
Time until collision	3	2				7.9 10.0 21.0
Task 2: Collided after 5.8 and 9.4 seconds on vertically mounted track. Reached target at 15.3 seconds	4	4				7.1 8.4 14.5 17.3 21.2
monited tack. Reactica target at 15.5 seconds.	5	3				4.8 6.5 8.2 24.0
	6	2				13.4 14.6 20.6
	Task: Durat	ion				Average [see
						18.

Observations and interpretations

- Knows the collected objects
- Increasing muscle spasms
- Difficulties with movements away from and towards the body

The 6 tasks can be displayed on six different screens.

俞

13 Editor

In editor, predefined execises can be adjusted to individual needs or fundamentally redefined and saved. Some general settings are defined the same way in each module whereas others may only be applicable for a certain module.

13.1 General

13.1.1 Open Editor

It is advisable to select as a template an existing exercise that already corresponds in a high degree to the desired settings.

- Choose the module in which a new exercise shall be created.
- Choose and start an exercise that already corresponds in a high degree to the desired settings.
- Open the editor using the key combination 1 + P or gesture ().
- Confirm that you would like to create and edit a copy.

Click/tap on *Preferences* to access the settings of individual exercises in *Exercise* Selection \rightarrow Manage Individual Exercices.

13.1.2 Settings and Preview



13.1.3 Type of Selection

\frown	Single Value	A single value for the entire lesson
\odot		\rightarrow example previous page: Object color: Black without outline in all tasks
	Selection	Several values, randomly assigned to a task
\bigcirc		\rightarrow example previous page: Four different shapes (Lea-Symbols), randomly assigned to the tasks.
•••	Range	Continuous change of a value within the defined range.
		\rightarrow example previous page: Continuous decrease of opacity from task to task. Click/tap on the points above the preview to navigate through tasks (not possible in every case)
	Accurate	Exactly defined value in each task.
*		\rightarrow example previous page: Exactly defined size in each task. Click/tap on the points above the preview to navigate through tasks (not possible in every case).
	No value	All tasks without this property.
		\rightarrow example previous page: No animation, no background pattern.
	Same value	Module spotPlus only Value does not differ → Definition requested.

13.2 Settings – All Modules

13.2.1 Task

Task Number Transition Feedback	6	
Number	only single value	
Task	\otimes	
Number		Move the slider to set number of tasks. Alternative: Enter a value in the text box.
		Minimum value: 1 Maximum value: 18

Transition from task to task only single value – Identical transitions during the whole exercise

Task Transition	
🚫 Break	No pause between tasks
🚫 Crossfade / Fade In, Fade Out	No crossfade Objects will disappear and appear immediately, with or without pause between.
🚫 Preview	No preview

Task Transition

 \otimes

O Break

🚫 Crossfade / Fade In, Fade Out



Pause

Duration of the transition in seconds.

Crossfade / Fade in, Fade out Negative values: crossfade Value 0: fade in – fade out Positive values: fade In – pause – fade out Note: Crossfade, fade In, fade out can not be used in combination with the task preview.

1 +

-

Preview before Exercise

Preview

 \bigcirc

Preview before each Task



3 options:

- No preview

Preview

- Preview before exercise
- Preview before each task

Move the slider to set the size of the preview or check the box to choose the size of the object in task (preview task only).

Alternative: Enter values into the text box.

Feedback	only single value
Task Feedback	\otimes
Reward	
Animation	
C)) Sound	

Reward Correct solution of the task: The object will be animated and/or a sound will be played.

58

13.2.2 Object

Object	Shape Color Opacity Size		* * * *	
Shape		Single Value / Se	lection or Accurate	
Object Shape		• Selection	\otimes	
Shape			(+)	Add object.
Task			\oplus	
بغ	2415			
Inverse				
A	2441		⊖ ●	Remove object.
Inverse				
i.	2412		\ominus	
Inverse	•			<i>Inverse</i> enabled: The object will be flipped vertically.
Object Shape		Selection	\otimes	Change of object 3
Shape 3			\otimes	
2412				Click/tap on a field to open the object list.
2441			•	Scroll down and then click/tap on the desired object.
i 2442				Alternative: Enter the object number in the text box.
\$ 2443				\rightarrow List of all objects (pdf), see www.dob.li.
2444				

Color



Object categories and assignment of the colors

	<i>Category</i> One-color	1 red objects		Category Two-color	2 red objects			<i>Category</i> Multicolor without o	3a red objects utline		Category Multicolor with outli	3b red objects ne			
0bject			Ø	O	C	Ö		(%)		K)					ALS Gerved
1 st Color	#93117E	#93117E	transparent	#93117E	#93117E	#93117E	#93117E	no 1 st Color	no 1 st Color	no 1 st Color	#000000 Outline- color	#000000 Outline- color	#93117E	transparent	transparent
2 nd Color	no 2 nd Color	no 2 nd Color	no 2 nd Color	#FF8000	#FF8000	transparent	transparent	defined	defined	transparent	defined	defined	transparent	defined	transparent
Outline	No outline	#009EE0	#009EE0	No outline	#009EE0	No outline	#009EE0	No outline	#009EE0	#009EE0	No outline	#009EE0	No outline	No outline	#009EE0

Category 1: one-colored object

1st color available, no 2nd color, outline available

Types of objects: geometric surfaces, Landolt Rings, Tumbling E, letters, numbers, black confetti

Category 2; two-colored object

1st color, 2nd color and outline available Types of objects: geometric frames, frequency, Lea-Symbols, spatial relations, emoticon, icon, dice, clock

Category 3a, multicolored object without its own outline

no 1st and 2nd color defined, outline available Types of objects: flags, traffic signs, colored confetti

Category 3b, multicolored object with its own outline

1st and 2nd color defined, outline available 1st color: outline within the illustration 2nd color: Colors of the illustration Types of objects: representational illustrations

Opacity	Single Value / Selection	or Accurate		
Object Opacity	Selection	\otimes		
Opacity	- 1 +	(+)	 Add value. Move the slid Alternative: E 	ler to set opacity. Inter values into the text box.
0	- 0.5 +	⊖ ●	— Remove value	e.
			Single Value: Selection: Accurate:	A single value for the entire lesson. Several values. Randomly allocated to the task. Select a specific value for each task.
Opacity		Range		
Object Opacity	💮 Range	\otimes		
Opacity from to				
	- 1 +		Slider 1	Set opacity for the first task.
-0-	- 0.1 +		Slider 2	Set opacity for the last task.
			Continuous cl	nange of the opacity within the defined range.
			Minimum val Maximum val	ue: 0.01 lue:1
			Value 1 corres Value 0.1 corr	sponds to an opacity of 100%. esponds to an opacity of 10%.

Size	Single Value / Selection	or Accurate	
Object Size	Selection	\otimes	
Size	- <u>1</u> +	⊕→	 Add value. Move the slider to set the size of the object. Alternative: Enter values into the text box. Remove value.
			Single Value:A single value for the entire lesson.Selection:Several values. Randomly allocated to the task.Accurate:Select a specific value for each task.
Size		Range	
Object Size	💮 Range	\otimes	
Size from to	- 2.5 + - 0.5 +		Slider 1Set the size of the object for the first task.Slider 2Set the size of the object for the last task.Continuous change of the size within the defined range.
			Minimum value: 0.05 Maximum value: 4

The longer side of an object of size 4 corresponds approximately to the screen height. Example: A square of size 4 fills the height of the screen.

13.2.3 Background



Gradient: Direction



Gradient: 1st Color 2



2nd Color



First background contains a gradient from first color background to first color gradient. Second background from second color background to second color gradient.

Direction of gradient: Towards the selected field

]	
	_	

towards the left (downwards)



upwards to the right



towards the center





Background pattern enabled

Style

Selection of pattern style. Click/tap in a symbol.

Pattern Color Click/tap on the color box to open the color palette.

Opacity Move the slider to set the opacity of the pattern.

Size Move the slider to set the size of the pattern..

Distance

Move the slider to set the space of the pattern.

Alternative: Enter values into the text box.

The background pattern is in motion. Click or tap on a field to set direction of the motion.

Move the slider to set the speed.

Minimum value: 0.1 Maximum value: 10

13.3 Settings – Specific Module

13.3.1 spot

Layout Location Animation Motion	 ○ ○ ○ ○ 	*		
Location	No value, Single Value / S	election or Accurate		
Layout Location	💽 Single	\otimes		
Location		÷ •	Add a combin	ation.
On a Line Edge / Center (exactly)			Active fields w Without tickin within the sel	within the grid will determine the position of the object Ig the option <i>Edge / Center (exactly),</i> the object will appear at any locati ected area.
			No value: Single Value: Selection: Accurate:	No determined location. The object will appear randomly somewhere on the screen. A single combination for the entire lesson. Several combinations. Randomly allocated to the task Select a specific combination for each task.

Location

Single Value / Selection or Accurate Edge or Center exactly enabled

Location

On a Line enabled (only single value possible)



Location - On a Line

The object will appear on a line in random sequence. The fields set the beginning and end of this line.



Animation

No value, Single Value / Selection or Accurate

Layout Animation	(Selection	\otimes	
Animation			÷ •	 Add a combination consisting of one or several types of animation.
Counterclockwise				Click/tap on one or several fields to determine the type of animatio Multiple selection will cause a combination of these animations. Note: It is recommended to combine a maximum of 3 types.
swing	up / down	back / forth		
rotate slow	rotate fast	V pulse (size)		
flash (opacity)	flicker (opacity)			
Counterclockwise			⊖ ●	- Remove combination.
	🔲 up / down	back / forth		 Counterclockwise enabled: The object rotates counterclockwise (only in combination with <i>rotate slow</i> or <i>rotate fast</i>)
rotate slow	rotate fast	pulse (size)		No value: The object isn't animated. Single Value: A single combination for the entire lesson.
flash (opacity)	flicker (opacity)			Selection:Several combinations. Randomly allocated to the taskAccurate:Select a specific combination for each task.
Movement



Туре

4 options:

- Inear No change in direction, constant speed
- stop & go Circle, square, triangle: no change in direction, break at the highest point Line: break and change of direction at the beginning and end of the line
- yo-yo hard Change of direction at the highest point without changing velocity
- yo-yo soft change of direction, slow down and accelerate at the highest point

Velocity

Move the slider to set the speed. Alternative: Enter a value in the text box.

13.3.2 spotPlus

General

spotPlus s concerned with the differentiation of objects or the search for an object with certain characteristics. Unlike **spot** or **zoom**, multiple objects generally appear on the screen. The editor specifies the number of objects appearing on the screen and how many are requested. The search criterias can be defined in the folder labeled *Requested*.

Overview

Object	Number (total) Shape Color Opacity Size		$\odot \odot \odot \odot \odot$	* * *
Wanted	Number Shape	3	\odot	*
	Color Opacity Size		• •	*

Total number of objects.

Settings of all objects or rather of all of objects not requested (strangers).

Number of requested objects (part of the total number).

Search criteria Example: The requested objects do not differ in size and opacity but in shape and color . Requested: Objects of a certain shape and color.

Feedback	only single value
Task Feedback	\otimes
Feedback Sound Strangers Sound Wanted	

Acoustic feedback when the wrong object is selected. Example: disabled

Acoustic feedback when the correct object is selected. Example: enabled

Number (total)	Single Value / Selection or Accurate	
Object Number (total)	Selection	
Number	- 12 +	Add number. Move the slider to set the total number of objects. Minimum value: Minimum value: Highest number of requested objects + 1 Maximum value: 300
•	- 16 +	Remove numberSingle Value:Total number for the entire lesson.Selection:Several numbers. Randomly allocated to the task.Accurate:Select a specific number for each task.
Number Requested	Single Value / Selection or Accurate	
Requested Number	Selection 😣	
Number	- 3 +	Add number. Move the slider to set the number of requested objects. Minimum value: 1 Maximum value: 30
	- 4 + -	Remove numberSingle Value:One number for the entire lesson.Selection:Several numbers. Randomly allocated to the task.Accurate:Select a specific number for each task.
		• • • • • • • • • • • • • • • • • • • •

Groups of values

Sections *Shape*, *Color*, *Opacity*, and *Size* enable the definition of single or multiple values (e.g. various shapes and/or combinations of colors) within each task.

Single Value complies a single group assigned to every task of an exercise. In section Selection a group, picked from several predefined groups, will be assigned to a task incidentally. The values within the determined groups (e.g. 5 shapes) are chosen randomly. Enter single values \rightarrow Object.

Example: Shape Single Value / Selection or Accurate O Selection \otimes Object Shape Add a group consisting of one or several objects. Shape (+)Add an object to the group. Task \oplus 1000 Remove the object to the group. Θ 1020 Inverse Θ 1042 X Inverse Remove the group. \oplus Task (-)Single Value: A single group for the entire lesson. \bigcirc 1200 Selection: Several groups. Randomly allocated to the task. Note: Quite demanding, as the random allocation also has to Inverse match the definition chosen in section Requested. Select a specific group for each task. Accurate: Θ 1220 Δ



Single Value:A single combination for the entire lesson.Selection:Several combinations. Randomly allocated to the task.Accurate:Select a specific combination for each task.



Note: In combination with *Random* the value corresponds to the *minimum* distance.

Single Value:A single combination for the entire lesson.Selection:Several combinations. Randomly allocated to the task.Accurate:Select a specific combination for each task.

Special case «fixed position»

Associated with the setting *fixed position for foreign object* only one foreign object can be defined. That object will stay visible and remain at a defined location on the screen for the duration of the entire exercise. For the requested objects there is *circle* or *line* to chose from. Those special settings will only appear in exercises of category *Excentric Fixation*.

Circle: The requested objects are arranged in a circle around the foreign object.



-0.5

0



0.5

- 1.5 + Move the slider to set the distant to the fixed center of the circle.

Line: A single object will appear changing location from task to task.





Location Requested

0.5

Layout

🗹 Line

Distance



Click/tap on a field to determine the location for the requested object. Example oben: One-colored geometric objects, changing their shape.

Layout Kind / Position	• Selection	\otimes	
Layout		⊕ ●	Add a combination.
• Fixed position			Fixed position enabled.
L ine	Circle		Line enabled.
Location Fixed position	• Center (exactly)		Click/tap on a field to determine the location for the foreign object. <i>Center (exactly)</i> enabled: The object will be displayed in the center of the selected field.
Location Requested			
	Center (exactly)		Click/tap on a field to determine the location for the requested object. <i>Center (exactly)</i> enabled: The requested object will be displayed in the center of the selected field.

Examples and definitions

Category	Preview	Nur total	mber requ <u>ested</u>	Objects	Requested	Layout
Eccentric Fixation Line		2	1	Target, black and white, red outline in each task Opacity 1 Size 0.8	Per task one of 6 shapes in red color (e.g. a square) Note: The shapes are defined only in <i>Requested</i> .	Fixed position for foreign object (target) Line Distance 3
Eccentric Fixation Circle		13	12	Target, black and white, red outline in each task Opacity 1 Size 0.8		Fixed position for foreign object (target) Circle Distance 3
Contrast		2	1	Object no. 9999 (invisible placeholder) Opacity 1 Size 3	One shape: Hiding Heidi Opacity exactly Heidi appears to the right or left. Exactly defined de- crease in opacity from task to task.	horizontal line Distance 0.3

Color Recognition	6	1	1 group of 6 shapes (confetti) 1 group of 6 colors Opacity 1 Size 1	Per task one of the 6 colors (e.g. orange) It appears once	Grid 3 x 2 Distance	0.5
Separation Area	5	1	1 group of 5 shapes 1 group of 5 color combinations Opacity 1 group of 3 values 0.5 / 0.6 / 0.7 Size 2	Per task one of the 5 shapes (e.g. heart) It appears once	Circle Distance	-0.45 (overlapping)
Separation Area	45	Accurate	e 1 group of 2 shapes (deciduous tree, fir) 1 color (object colors) Opacity 1 group of 3 values 1 / 0.95 / 0.9 Size 1 group of 4 values 0.9 / 0.8 / 0.7 / 0.5	Per task exactly one shape (e.g. roe deer)	Crowd Distance	-0.45 (overlapping)

Figure-Ground					19	4/5/6	1 group of 6 shapes (letters) 1 Color Opacity 1 Size 0.6	Per task one of the 6 shapes or rather letters (e.g. E) The requested shape will appear 4, 5 or 6 times	Random Minimum distance 0.5
Alien	K		R		5	1	Per task exactly one group of 4 shapes Object color Opacity 1 Size 0.7	Per task exactly one shape which does not fit (e.g. whisk)	Line Distance 0.5
Search and Find Shape and Color				° °	45	5/6/7	1 group of 4 shapes 1 group of 6 colors Opacity 1 Size 1 group of 5 values 0.8 / 0.5 / 0.3 / 0.2 / 0.1	Per task one of the 4 shapes (e.g. double circle) in one of the 6 colors (e.g. green) The requested object will appear 5, 6 or 7 times	Random Minimum distance 0.05



Size

Single Value / Selection or Accurate



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13.3.4 track and trace

General

Three elements determine the optical environment of **track** and **trace**: object, track and goal.

Object	Shape	\odot	*
	Color	\odot	*
	Opacity	\odot \odot	*
	Size	\odot	*
			-
Line	Туре	\odot	\circledast
	Color	\odot	(\bigstar)
	Opacity	\odot	*
	Size	• 🕶	*
Goal	Number	\odot	*
	Shape	\odot	*
	Color	\odot	*
	Opacity	\odot	*
	Size	\odot \odot	*
	Control	\odot	*

Settings of the object that will be moved \rightarrow Object

Settings of the guide track Color, opacity and size of the track are defined in the same way as color, opacity and size of the object. Changes can be seen in the preview on the right side.

Goal / Number (track only)

Settings target object Target objects are defined the same way as objects. If several target objects are defined, it is possible to determine \rightarrow groups of values.

Goal / Control (trace only)



track

only single value

Task Feedback	\otimes
Feedback	
Count errors	
Sound for each hit	
Spooky objects	
Indicate the remaining time	
💫 Alarm when time runs out	

Count errors enabled: A feedback at the end of the task will tell you the number of bumps or falls.

Zero defects: A reward will be given.

Spooky objects









Sound for each hit enabled: Failure will be indicated by an acoustic signal.

Spooky objects disabled: Feedback will use just neutral objects.

Indicate the remaining time enabled: A little clock will appear in the bottom left corner.

Alarm when time runs out enabled: When time runs out, an alarm signal will be sent.

Task Feedback	\otimes
Feedback	
Count hits	
🙀 Sound for each hit	
Record the track	
Indicate the remaining time	
Alarm when time runs out	

Count hits enabled:

The number of successful catches will be indicated.





Sound for each hit enabled:

An acoustic signal will indicate every successful catch of the target object.

Record the track enabled: The objects track will be recorded and displayed as a line.





Indicate the remaining time enabled: A little clock will appear in the bottom left corner.

Alarm when time runs out enabled: When time runs out, an alarm signal will be sent. In the categories without goal and for the line types *loop* and *special*, duration of task will be determined (**track** optional).



Object Shape

Single Value / Selection or Accurate





89

Trail	Single Value / Selection or Accurate		
Line Type	Selection	\otimes	
Trail		÷ •	Add a track.
		-	<i>Crash edge</i> enabled Line wider than the object: error if the outer edge of the object touches the edge of the t Line smaller than the object: error if the object leaves the track completely.
Crash edge	Crash center		<i>Crash center</i> enabled Error if the midpoint of the object reaches the edge of the track.
Opposite Direction			The object will start at the red point (current example: on the left side). Full line
1001		⊖ ←	Remove track.
Opposite Direction			The object will start at the end of the line (current example: on the right side).
			Dotted line
Line Trail	Selection	\otimes	Modification of track numbre 2
Trail 2		\otimes	
1001			Click/tap on the icon to access the \rightarrow track list. Scroll down and then click/tap on the desired track.
6132			
@ 6133			

() 6140

6141

Single Value:A single track for the entire lesson.Selection:Several tracks. Randomly allocated to the task.Accurate:Select a specific track for each task.
Click/tap on the points above the preview to navigate through tasks.

Goal Shape

Single Value / Selection or Accurate





Goal Shape	• Selection	\otimes	
Shape		\oplus	
2	371		
Inverse	Aligned to line		Aligned to line disabled:
: 0:		D:	Target objects will keep their original orientation.
	хлхлл	~	Target objects flash



Goal Control

Single Value / Selection or Accurate



13.3.5 stimula

Depending on the type of stimulation, different properties of the optical environment can be adapted.

Subcategory	Number	Number	Shape	Color	Opacity	Size	Motion Velocity	Motion Type	Feedback	Background
Punkt	1000	Rows								
	1010									
	1020									
Linie	2000	Rows								
	2010	Rows								
	2020		-			-		-		
	2030									
Fläche	3000									
	3010									
	3020									
Interaktiv	8000									
	8010									
	8020 - 25									
	8030									
	8040									
	8050									
OKN	alle	Stripes						Direction		

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DENK AN MICH

Stiftung Denk an mich

Stiftung für blinde und sehbehinderte Kinder und Jugendliche Zollikofen Stiftung für das behinderte Kind Stiftung Solidago



visoparents schweiz

15 Note

Photosensitive Warning

A very small percentage of individuals may experience epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a computer screen may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy.

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