First year of the ICAR project
A short report from Münster

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Overview

WESTFÄLISCHE
WILHELMS-UNIVERSITÄT
MÜNSTER
Team: P. Doebler, H. Holling & E. Masoudi

Status of generator and test development

Test	Development process	Pilot
Figural analogies	generator and concerto done	currently
Figural analogies (mobile)	generator and concerto done	currently
Matrix items	generator done, concerto: 90%	-
Number/letter sequences	design and conception done	-

Figural analogies

Generator features

- Rule-based, written in R
- most rules can be combined with each other
- color-blind friendly design

- concerto version: instructions in English and German (translations welcome)
- also: code to produce neat pen&paper booklets

Example

- Rule 1: Rotation by 90 degrees counter-clockwise
- Rule 2: Swap the outer colors

Matrix items

Generator features

- any four simple rules can be combined
- Basic rules: four (conditional) addition rules, two types of sequences, movement

- Rule-based, written in R with S4 classes
- concerto version: English/German (translations welcome)

Example

- Rule 1: Movement (the star wanders, row-wise)
- Rule 2: Unconditional addition (row-wise)1
- generator produces up to 14 distractors
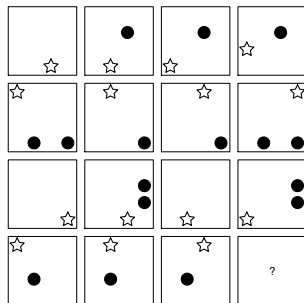
ICAR Item Type Development Progress

by the Cambridge Team

08/04/2015

Progress

Development Projects	Progress
30 Raven-like items	Complete (available at www.icar-project.com) Paper: to-be-published
Matrices Reasoning Item Generator	Generator: 80% Complete Testing website: 80% Complete Data Collection: scheduled in early May
Adaptive Map Test	Under development
Adaptive Face Recognition Test	Under development

Developed test items

- An item set consisting of 30 progressive matrices
  - Based on similar rules followed by the Raven's Progressive Matrices.
  - Each item has 8 distractors.
  - Calibrated with a large online sample.
  - Standardised against the original Raven's Progressive Matrices-UK.
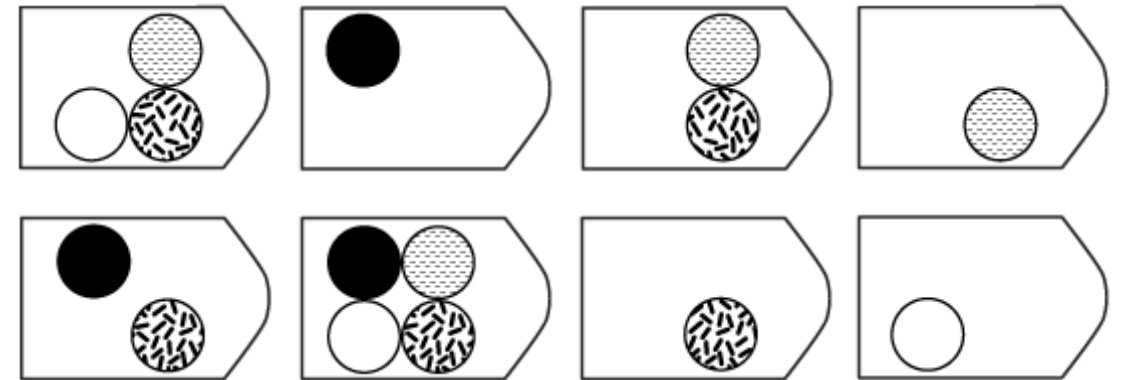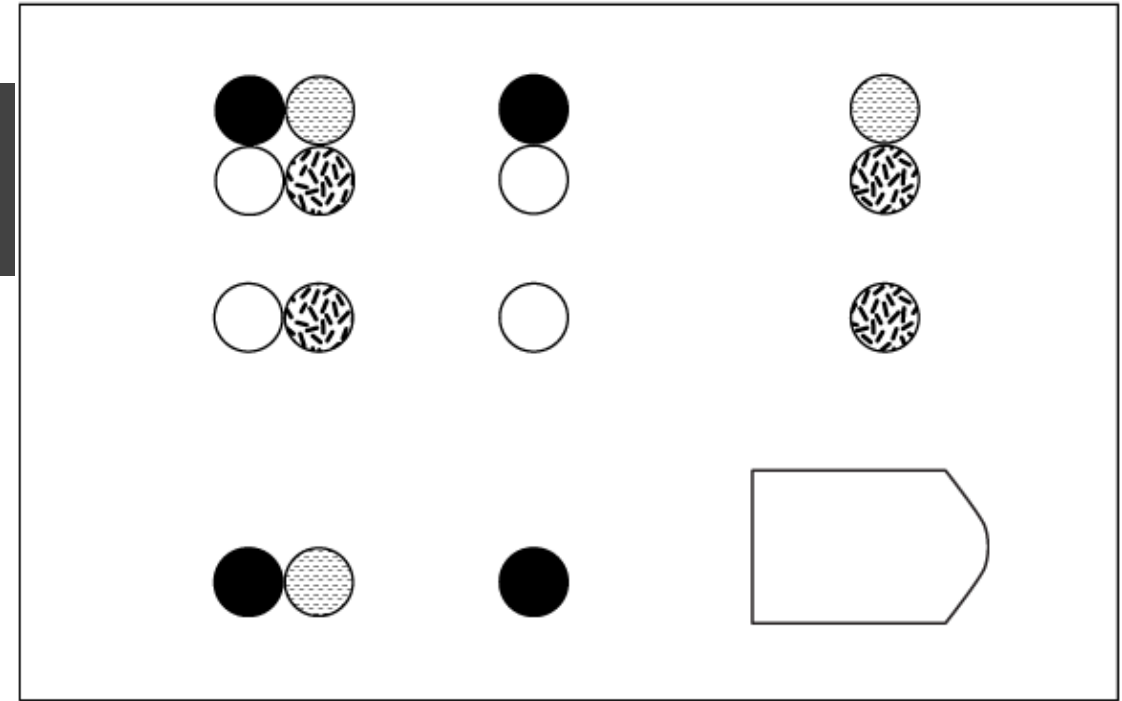
Automatic Matrix Reasoning Item Generator (under development)

■ Collaboration with Isaac Thimblerbly (Oxford)

Project	Progress
Develop matrix item generator	Finishing (ready in late April)
Develop data collection applications	In progress (ready in May)
Item validation	Start in late April
Generator validation	Start in June
Difficulty manipulation studies	August

Skip this question

?
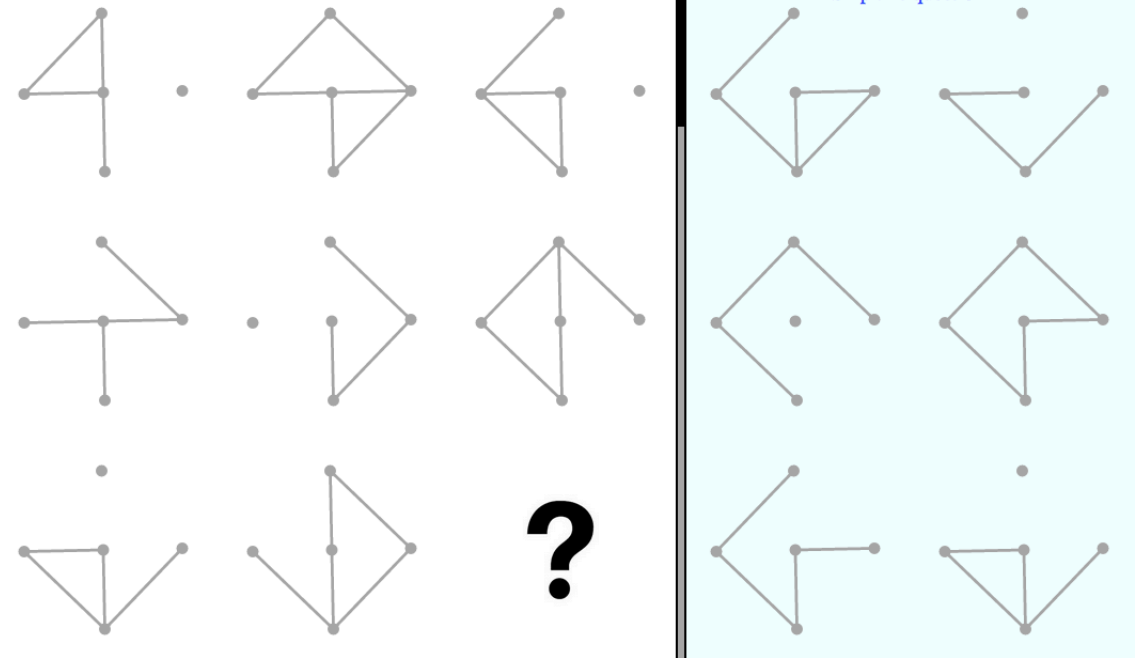
Adaptive Map Test to measure executive functioning (under development)

- Consist of two trials:
  - First trial measures subject's planning ability.
  - The second trial measures subject's ability to follow instructions.

Zoo Map Test Version 1
Rules

Imagine that you are going to visit a zoo.
Your task is to plan a route in order to visit the following (not necessarily in this order):

- **Elephant house**
- **Lion's cage**
- **Llama enclosure**
- the **Café**
- the **Bears**
- **Bird sanctuary**.

When planning your route the following rules must be obeyed:

- start at the **entrance** and finish with a **picnic**
- you may use the **shaded paths as many times as you like** but the **unshaded ones only once**
- you may take only **one Camel ride**.
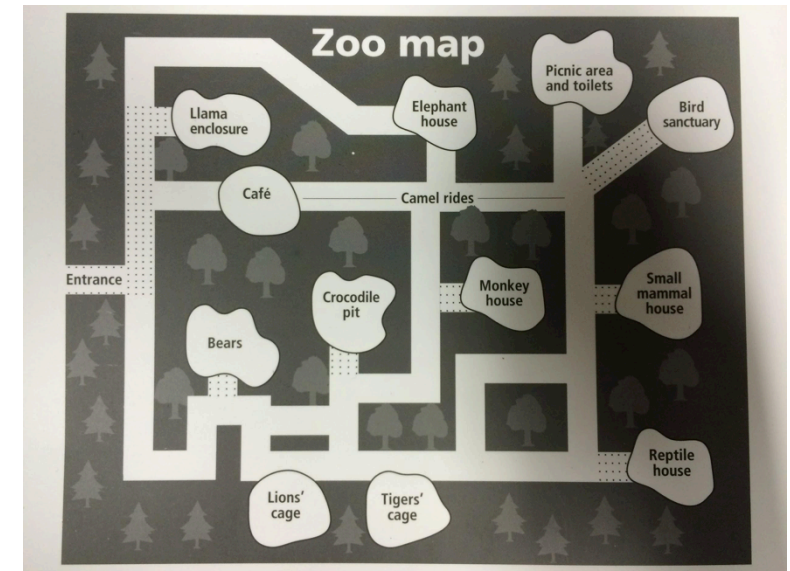
Adaptive Face Recognition Test (Under development)

- Originated from the Mooney Face Test

- Items calibrated based on two sets of parameters
  - Face parameters produced by face detection API
  - Image processing parameters

Status Update & Prospect

David M. Condon & William Revelle

NORTHWESTERN
UNIVERSITY

April 23, 2015

Publications and Dissertations related to ICAR

Revelle, W. & Condon, D. M. (2015). A model for personality at three levels. *Journal for Research in Personality.*

Wilt, J. & Revelle, W. (2015). Affect, behavior, cognition and desire in the Big 5: An analysis of item content and structure. *European Journal of Personality.*

Condon, D. M. & Revelle, W. (2014). The International Cognitive Ability Resource: Development and initial validation of a public-domain resource. *Intelligence, 43,* 52-64.

Condon, D. M., Wilt, J., Cohen, C., Revelle, W., Hegarty, M., & Uttal, D. (under revision). Sense of Direction: General factor saturation and associations with the Big-Five traits.

Condon, D. M. (2014). *An organizational framework for the psychological individual differences: Integrating the affective, cognitive, and conative domains.* PhD thesis, Northwestern University.

Wilt, J. (2014). *A new form and function for personality.* PhD thesis, Northwestern University.

Presentations related to ICAR

Condon, D. M. & Revelle, W. (2015). *The phrased item universe: Structure, hierarchy, and heterarchy in personality.* Poster session presented at the 16th annual meeting of the Society for Personality and Social Psychology, Long Beach, CA.

Condon, D. M. & Revelle, W. (2014). *The many little items of Big Five measures: Hierarchy, complexity and predictive utility.* Paper session at the 17th European Conference on Personality, Lausanne, Switzerland.

Condon, D. M. & Revelle, W. (2014). *Cross-Domain Assessment of Individual Differences: The Unique Benefits of Public-Domain Measures.* Symposia at the 17th European Conference on Personality, Lausanne, Switzerland.

Revelle, W. & Condon, D. M. (2014). *Personality and ability: Assessing ability using the international cognitive ability resource (ICAR)* Symposia at the 17th European Conference on Personality, Lausanne, Switzerland.

Elleman, L., Condon, D. M., French, J. A., & Revelle, W., (2014). *Personality Change Beyond the Big Five: Personality Aspects, Vocational Interests and Cognitive Ability.* Poster session presented at the 15th annual meeting of the Society for Personality and Social Psychology, Austin, TX.

Revelle, W. (2015a). psych: a general purpose toolkit for personality and psychological research. Long Beach, California. Society of Personality and Social Psychology.

Manuscripts and presentations in progress

Condon, D. M. & Revelle, W. (in prep). The phrased item universe: Structure, hierarchy, and heterarchy in personality.

Condon, D. M. & Revelle, W. (in prep). Selected personality data from the SAPA-Project: International Cognitive Ability Resource validation data.

Zaonegina, E., Condon, D. M., Zabelina, D., Revelle, W. (in prep). The Creative Achievement Inventory.

Guo, J., Weston, S. J., Condon, D. M. (in prep). The collection of life stories: An inquiry into methodology.

Elleman, L. G., Condon, D. M., Holtzman, N., & Revelle W. (2015). Personality traits and social correlates at the zip code level.

Guo, J., Weston, S. J., Condon, D. M. (2015, June). *The collection of life stories: An inquiry into methodology.* Poster session presented at the biennial meeting of the Association for Research in Personality, St. Louis, MO.

Elleman, L. G., Condon, D. M., Holtzman, N., & Revelle W. (2015, June). *Personality traits and social correlates at the zip code level.* Poster session presented at the biennial meeting of the Association for Research in Personality, St. Louis, MO.

Status of development by item type

Item Type	Generator	Piloting	Validation
Compound remote associates	Yes; done	done	on-going
2D rotation	Yes; done	done	planned
3D rotation	Yes; done	on-going	not begun
Emotion recognition	No	done	not begun