



6 Steps into the Desert – A Journey with Ecometrics

By
Prof Wim Roestenburg
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It all starts here[®]

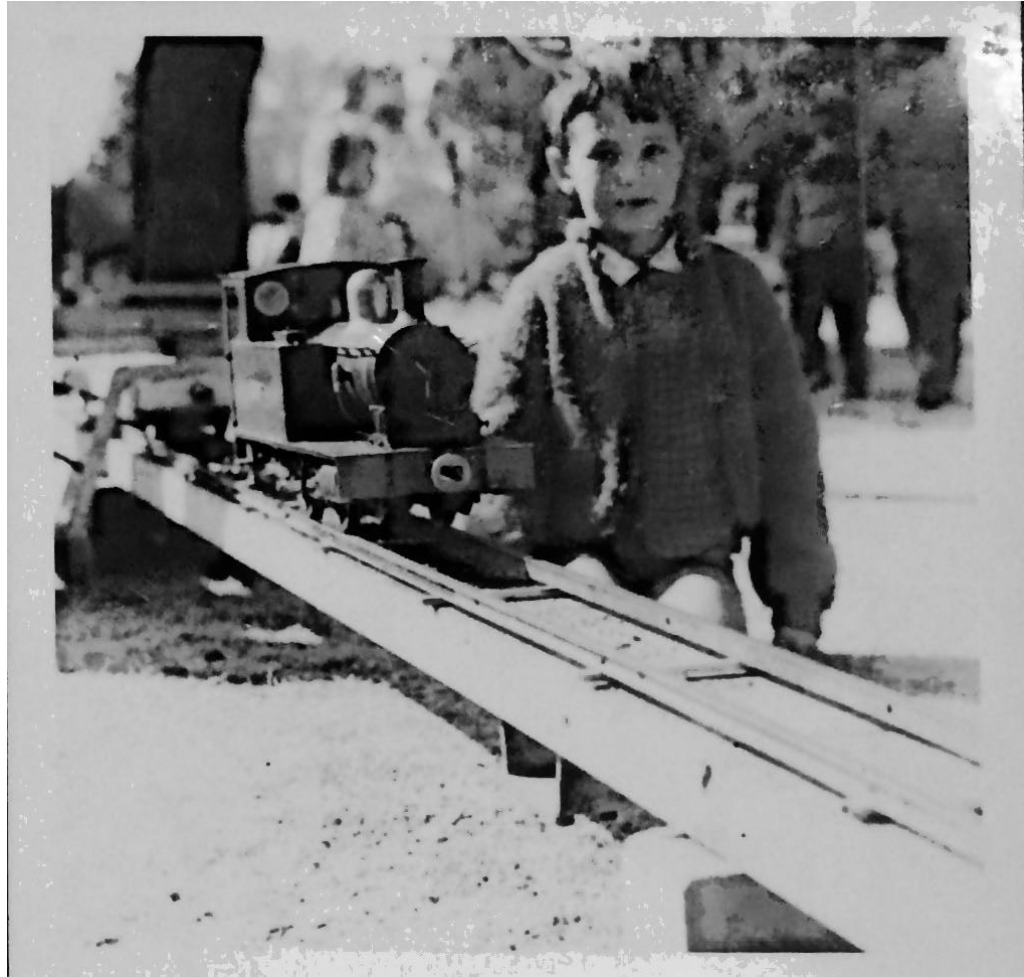


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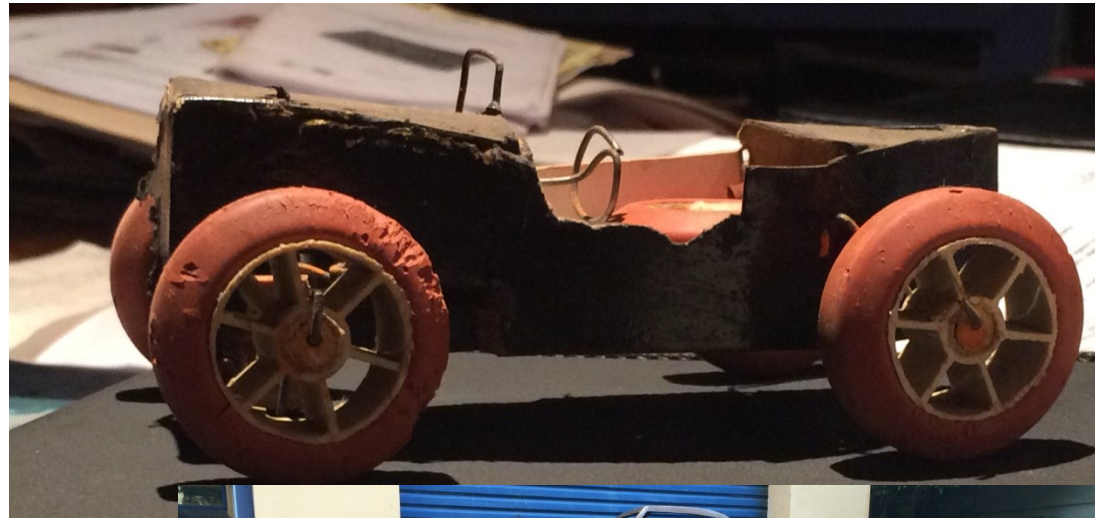
In Namibia the beach becomes the desert, and the desert is beautiful, but lonely...



My first photo with a model train Age 5



From a childhood comic strip story to a first prototype to the real thing...



More imaginative designs and outrageous prototypes followed...



The sculptor's workbench - sheetmetal formed into beautiful shapes...



Step 1 The first exposure...

- Walter Hudson's Clinical Measurement Package (1982) – Different Scales for measuring Social Functioning was the answer to many issues I had with lack of systematic assessment tools
- These tools were used to measuring every client system. Intuitively I started cross-validating my own observations of client social conditions with measurement results to see if some form of consistency could be achieved.
- Attempts were made to translate these scales into Afrikaans and use them in this form on Afrikaans clients
- More and different tools were searched and experimentally applied to the practice setting
- Other scales that were tested was the Heimler Scale for Social Functioning and a relationship with scales and structured assessment procedures was formed.

Step 2 The Ecometrics concept

- The equivalent of Psychometrics in Psychology
- Initially developed by Riaan Van Zyl in 1993.
- Refined in 2007 *“Ecometrics refers to the methodological body of knowledge in Social Work concerned with the quantification (measurement) and qualification (description) of interactions of a person with the environment. Ecometrics further incorporates a broad spectrum of practice approaches and is suitable for application in diverse practice contexts.”* Roestenburg, 2007. *Social Work Practitioner-Researcher. Vol. 19:2)*

Step 3 – A model of Information management in human service organizations - The Master's degree

- This study was aimed at operationalizing Living systems theory into measurable constructs.
- If we knew how information was handled in Human service organizations, we could design systems that captured information and this could be used for making decisions.
- It was 1993 – computers were in its infancy and not as accessible as today.
- The study remained theoretical and not a single empirical piece of data was ever collected. The study design was more flexible than today and my study was complete when my supervisor indicated: “You have done enough!” - I passed the degree Cum Laude
- The end product – a “model” of an abstract construction, this time made of paper.

Illustration of Information model

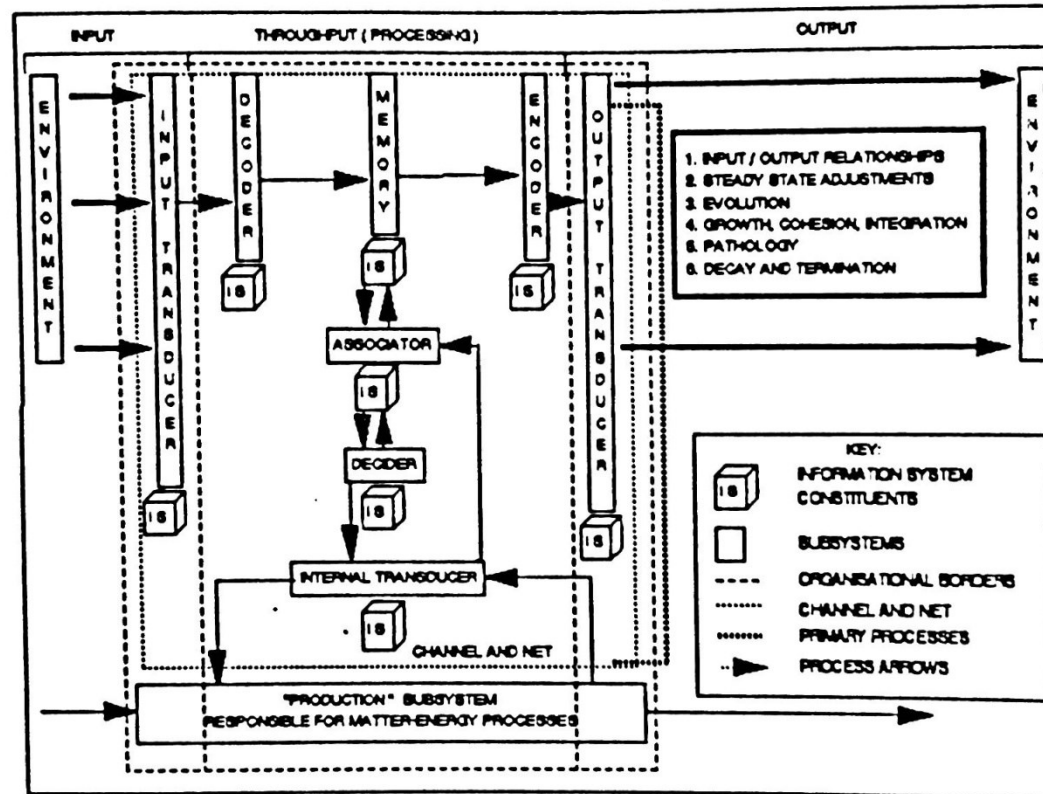
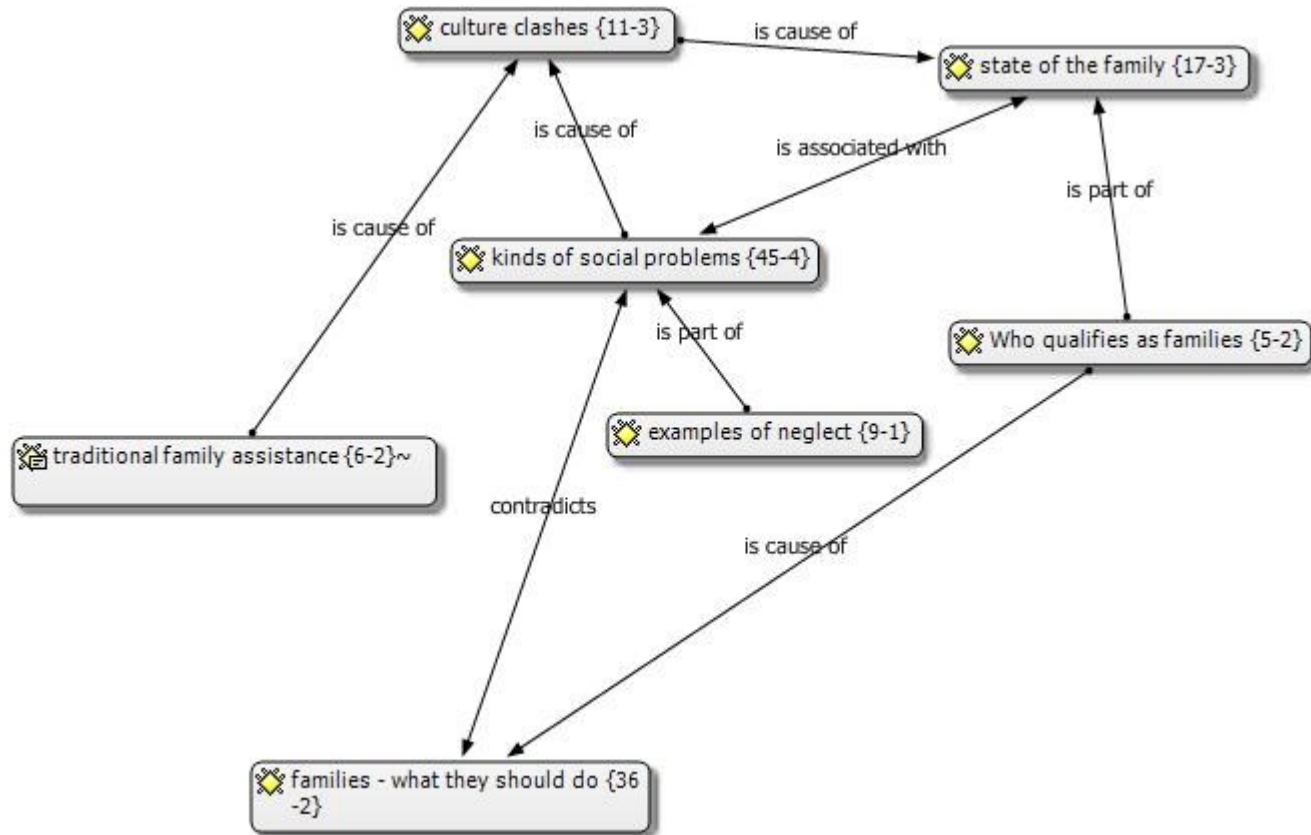


FIGURE 3.4 A COMPREHENSIVE VIEW OF THE INFORMATION MODEL.

Family Preservation Knowledge study



Step 4 – The social Indicator model

- This was the development of a linear regression model to determine most suitable indicator variables for the concept family well being.



Indicator model.pdf

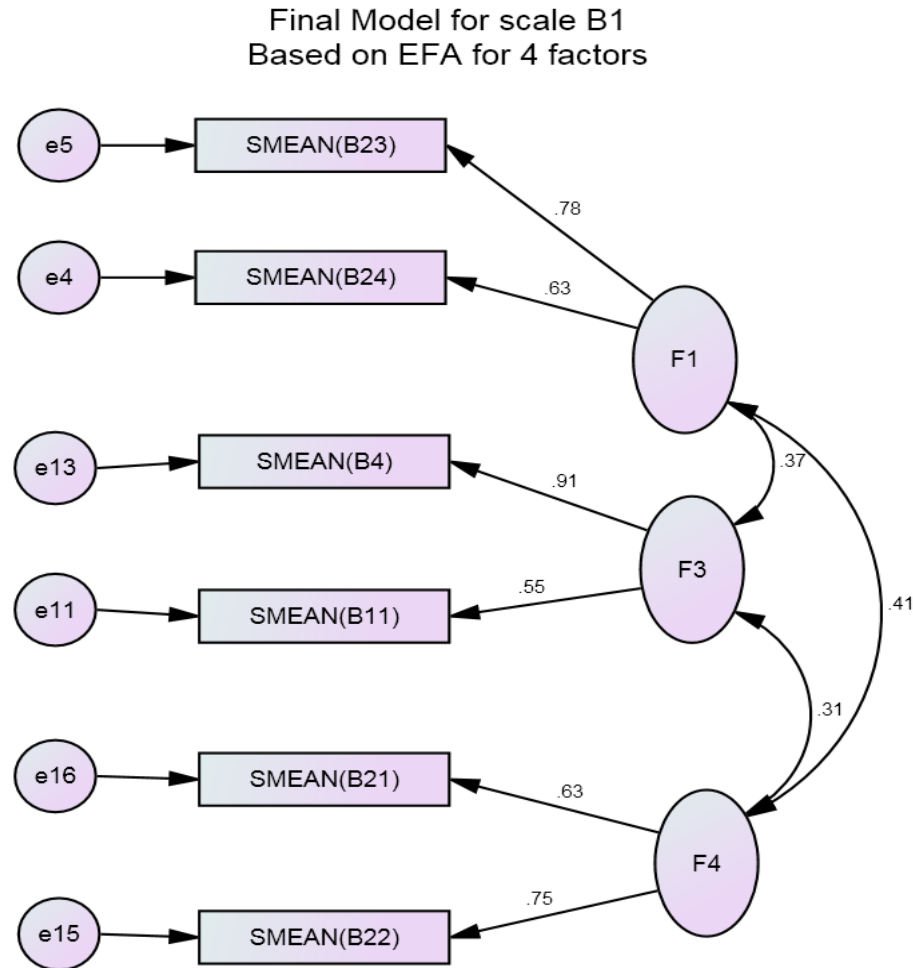
Step 5 - The CORE Data Management System

The screenshot displays a web browser window with the URL www.famsa-core.co.za. The browser's address bar and tabs are visible at the top. The main content area features a login form on the left with fields for 'User Name:' and 'Password:', a 'Log In' button, and links for 'Create User' and 'Forget your password?'. To the right of the login form is a banner image showing a family and the FAMSA logo with the text 'FAMSA FAMILIES SOUTH AFRICA'. Below the banner is a 3D-style software box for 'CORE DATA MANAGEMENT SYSTEM Agency version', which is 'A product by Afri.Yze Consult (Pty) Ltd. & A.Yze LLC'. The Windows taskbar at the bottom shows various application icons, including Internet Explorer, File Explorer, and Word, along with system tray icons and the date/time '11:38 PM INTL 2015-03-18'.

Step 6: An example of an Ecometric scale development exercise. The SANCA STES scale

- The project was started in 2006 when a MA student (Selipsky) conducted research on possible items for a “treatment evaluation scale”
- After finalizing the scale design it was administered to 463 patients of SANCA clinics across the country.
- The data was analyzed using Exploratory Factor Analysis (EFA) followed by Confirmatory Factor Analysis (CFA) on a random sub-sample of the large data set.

Graphical figure of the resulting CFA model on one scale dimension



Cut-off values for scale (ROC Curves)

- This shows values where the scale is most *precise* (Most believable) level and most *sensitive* (correctly identifies)



Coordinates of the Curve.pdf

Example of STES Scale in SANCA Database



STES questionnaire.pdf



EXCEL SCORING SHEET for Macro statistics sample.pdf

The ZETA scale project

- This project aims to develop a global outcomes rating scale that is universally applicable within multiple contexts of social work.



ZETA Scale format.pdf

Conclusion

- Much of my work has centred around the development of models or prototypes and sometimes actual working products in the field of Ecoemtric assessment
- These have been introduced in real world circumstances and are continuously being tested
- Implementation and dissemination is a painful process of testing, improving and re-testing
- The desert is an empty space where the rules of the game are undefined and the researcher has to follow procedures already refined in other fields of science.
- It is an exciting environment but treacherous, and requires intensive research to ensure two critical constructs are fulfilled namely validity and reliability
- However, in my world, modelling seems to be a way of life...

Vote of Thanks

My hartlike dank aan die volgende instellings en individue vir hulle onbaatsugtige bydraes om hierdie geleentheid moontlik te maak

- Eerstens aan my vrou Susan dankie dat jy deur die jare aan my sy bly staan het as my vriend, kritikus en ondersteuner, en vir jou volgehoue geloof in my;
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Thank you

