Title: Natural Learning Case Study Archives

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? Abstract
NLCSA is a research facility for myself and others interested in using case study analysis to deepen our understanding of common sense knowledge and natural learning (how the mind interacts with everyday experiences to develop common sense knowledge).

Jean Piaget argued in "The Science of Education and the Psychology of the Child:"
"If we desire to form individuals capable of inventive thought and of helping the society
  of tomorrow to achieve progress, then it is clear that an education which is an active
  discovery of reality is superior to one that consists merely in providing the young with
  ready-made wills to will with and ready-made truths to know with."
Seymour Papert was Piaget's Mathematician for five years. The core of his agenda was using intelligent technologies as vehicles to reform education with Piaget's vision. His research focus was the active creation of new technologies for learning. Lawler's case studies began in "The Children's Learning Lab" of Papert's Project Logo in the MIT Artificial Intelligence Laboratory, where our collegue Marvin Minsky used computational ideas to attempt understanding of learning and common sense.

I've archived three case study corpora based on experiences with three of my children. (LC1: Rob at 7 & 8; LC2: Miriam while 6; LC3: Peggy from infancy up to 6.) These are among the earliest studies of children with extensive computing involvement. Each corpus contains recorded materials (originally videotape, now digitized), text observations, and interpretations of some of those materials. The site currently runs to 32GB, including half-hour video files (LC1&2: 61; LC3 to 3 years: 136; LC3 after 3 years: 22; more remain to be made available). They are segmented into episodes. It also includes the text of books and articles previously published about these case studies.

Begun in 1976 and continuing into the 1980's, these are some of the earliest studies of children with extensive involvement in computing. The materials are presented separately, for each child, although there is significant overlap and interrelatedness of materials; the organization shows each study is of a person, that it involves ideas, and the materials comprise a rich source of data. The digitizing, development, uploading and interpretation of materials is ongoing and will continue. My first objective for these archives is to make all the material maximally accessible for my use in analyses.

The second objective is advancing case study as a discipline by sharing materials publicly so:
- previous interpretations and analyses can be questioned by others with different viewpoints,
- others may offer their own different interpretations of what material interests them.
If you, as a researcher, want to discuss collaboration or to examine in more detail the videos presented here, contact Lawler.

? The dataset

o Location and DOI

NLCSA.net

o Creator

Robert W. Lawler.

Corpus construction was undertaken by Lawler with extensive collaboration and involvement of Gretchen P. Lawler and their four children. (No materials are currently archived for the fourth child.) Many others have helped in various ways and are acknowledged within the Archives.

o **Date**

- publication year: 2013 et seq.

o **Format**

- NLCSA.net is a WordPress Content Management System

Implementation management goes forward under the definition of four functional roles, cast as users of the system with primary access: Admin manages the facility; Builder created and continues to extend it; Analyst explores and interprets the material; Critic both presents, encourages, and addresses criticism and queries.

Currently these four roles are all filled by Robert W. Lawler. The plan is to

-- over time -- pass on these roles to others.

- The Archives are organized around materials of the three case studies: LC1, LC2, and LC3 with related, ancillary materials by Lawler (LC0).

- The presentation is structured by three foci: material about the children as people; published material (with copyrights primarily owned by Lawler); and corpus material (owned by Lawler).

o **Restrictions** to use (if any)

- all categories of the work are generaly available for examination; downloading for use in other venues or inclusion in other materials, should be considered available under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 Unported License](). Access for research by individuals or groups is possible, even encouraged, and is to be arranged by communication with the administrator. In such cases, there would need be a group leader functioning as an editor to monitor and approve access and comments for members of the group.

- Some of the material is personal, and will be only accessible for research with agreement of the Analyst. These materials are held as private in the database, or accessible only with password provision.

? Introduction

After nearly a decade as an IBM systems engineer, spanning the sixties and seventies, I entered gratuate study at MIT's Division for Study and Research in Education, where this work began in the MIT Logo Project, housed within the MIT Artificial Intelligence Laboratory. Papert, who had been Piaget's mathematician for five years, provided a reading list which included Flavell's "Developmental Psychology of Jean Piaget," in an appendix to which I found a suggestion: that it might be fruitful to explore merging the data rich studies of Ecological Psychology with the structural interpretations of Piaget's Development Epistemology. Long favoring the Case Study method, I was encouraged by Papert's opinion that Piaget's Case Studies were his most profound work. I wanted to understand learning, to understand how something so insubstantial as an idea could become embodied in a mind. And if this work is not the Experimental Epistemology of Warren McCulloch, nor so theoretically artistic as Minsky's Artificial Intelligence, as empirical epistemology it is in that same tradition. I continue with construction of computationally oriented views of learning based on the microgenetic analysis of ecological studies. This dataset is my organization,

presentation, and continuation of my life's work. It is open to suggestions for collaboration.

? Research method

The general method has been to cast a wide net in corpus construction, then to follow the developing interests of the subject to select threads of behavior for detailed analysis. Over time, the materials collection has become more detailed, permitting more detailed analyses. The focus of analysis is now LC3. Links to short papers relevant to the current methods appear in the right column, under the heading "Methods."

methods for **LC1** (contemporaneous)
People, Computers, and Everyday Number Knowledge:
http://nlcsa.net/lc1b-nls/lc1b-analyses/lc1ba0/
methods for **LC2**: (contemporaneous)
Quest and Approach: http://nlcsa.net/lc2b-tis-2/lc2b-other/LC2bO1/
Constructing a Corpus http://nlcsa.net/lc2b-tis-2/lc2b-other/LC2bO4/
methods for **LC3**: (current) from "Methods" in right column
Guidance: http://nlcsa.net/lc0b-csc/lc0b-analyses/lc0ba1/
Vision: CASE: http://nlcsa.net/lc3c-ips/lc3c-analyses/LC3cA1/
Opportunity: http://nlcsa.net/lc3c-ips/lc3c-analyses/lc3ca2/
Analysis: http://nlcsa.net/lc3c-ips/lc3c-analyses/lc3ca32/
Criticism: http://nlcsa.net/lc0b-csc/lc0b-other/lc0bo3/
Justification: http://nlcsa.net/lc0b-csc/lc0b-analyses/lc0ba4/

? Ethical considerations

These are studies of private individuals, undertaken when they were chlidren.

Often this involved our playing together and occasionally embarassing moments.

Be generous to them in your evaluations, though you can be as critical of me as you wish. The column focused on the "persons" is the least developed and will be the last developed further.

? Limitations

? Acknowledgements

On the Welcome page of NLCSA.net, you will find a tribute to my primary mentors in the right column, here: http://nlcsa.net/2010/07/m020901/

A more detailed, textual acknowledgement is on this page.

http://nlcsa.net/lc0a-rwl/lc0a-6-acknowledgments/

? References (including references to the research papers)

NLCSA contains materials for which I own copyright or have permission to
present in this arena: Here are links to my materials from these works.
Cognition and Computers (1986): http://nlcsa.net/lc1b-nls/
Computer Experience and Cognitive Development: http://nlcsa.net/lc2b-tis-2/
Learning with Computers: http://nlcsa.net/lc3b-ips/
Artificial Intelligence and Education: http://nlcsa.net/lc0c-aied/
Case Study and Computing: http://nlcsa.net/lc0b-csc/
Articles published in the Journal of Mathematical Behavior:
http://nlcsa.net/lc0a-rwl/lc0a-analyses/