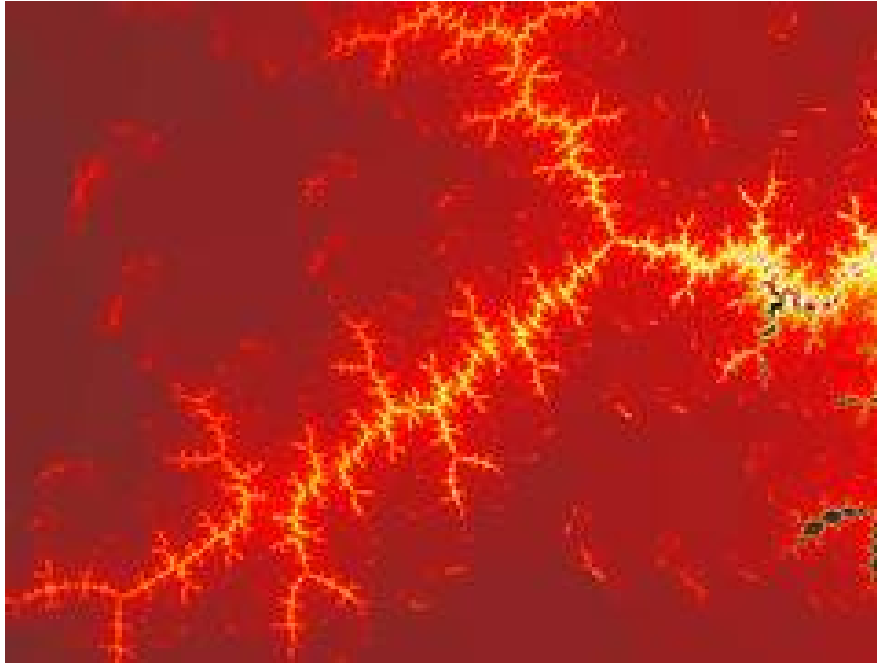


Personal Learning

A photograph of a winter forest. The ground is covered in a layer of snow, and the trees are mostly bare, with some evergreens. The sky is clear and blue. The text "Personal Learning" is overlaid in the top right corner.

Stephen Downes ~ March 11, 2008



Prologue

How do you
teach if you no
longer have
power over
students?



Joel

We didn't start the fire

It was always burning, since the world's been turning

<http://home.uchicago.edu/~yli5/Flash/Fire.html>

Enter the Network

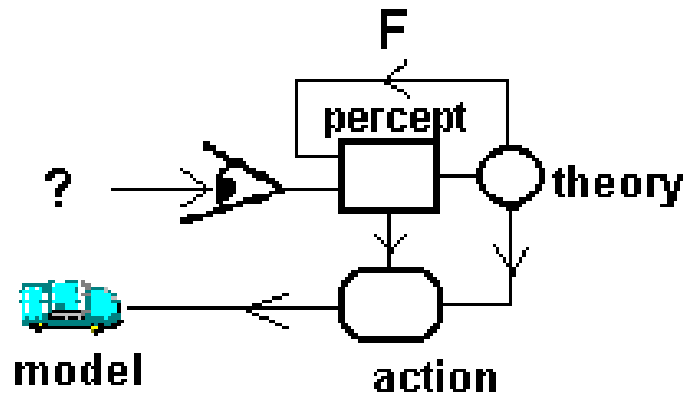


Figure 8

Everything is connected



Lakatos

to everything else

(Theory-laden data)

<http://dsv.su.se/~kjellman/e-subjectoriented.htm>

Enter the Network



It is impossible to

predict anything

(Chaos theory, strange attractors)

<http://www.imho.com/grae/chaos/chaos.html>

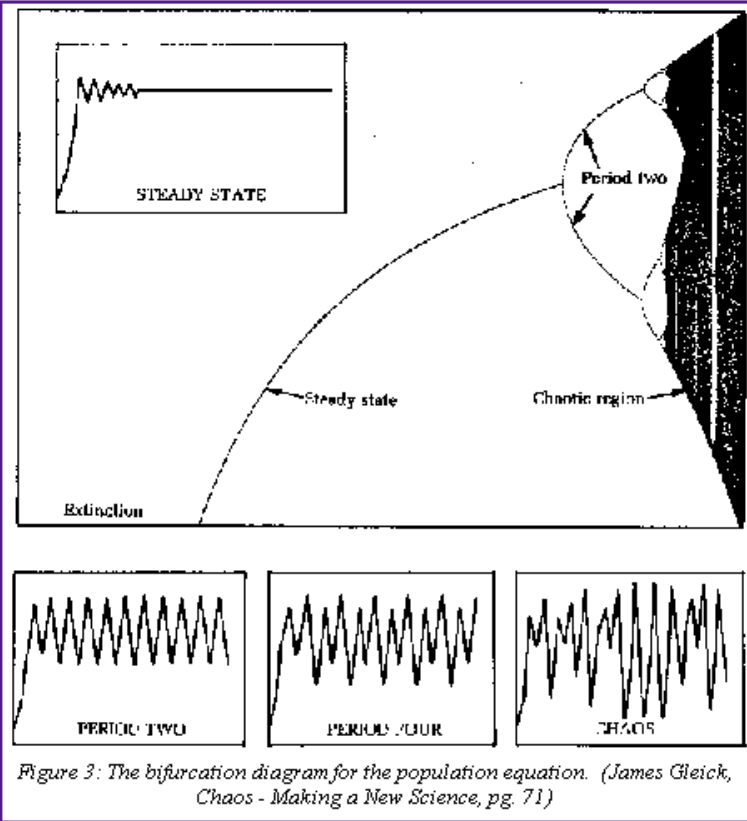


Figure 3: The bifurcation diagram for the population equation. (James Gleick, *Chaos - Making a New Science*, pg. 71)



Lorenz

Enter the Network



It is the breakdown of order



Derrida

(Postmodernism, ethnocentricity)

(Cluetrain, We The Media)

<http://www.cluetrain.com/>

Enter the Network



It looks like **the internet...**

- Like open source
- Like **Social Networks**
- Like **blogs** and **blogging**
- Like **wikis** and collaborative writing
- Like tagging and Digg and...

It looks like **Web 2.0**



Stallman

Enter the Network

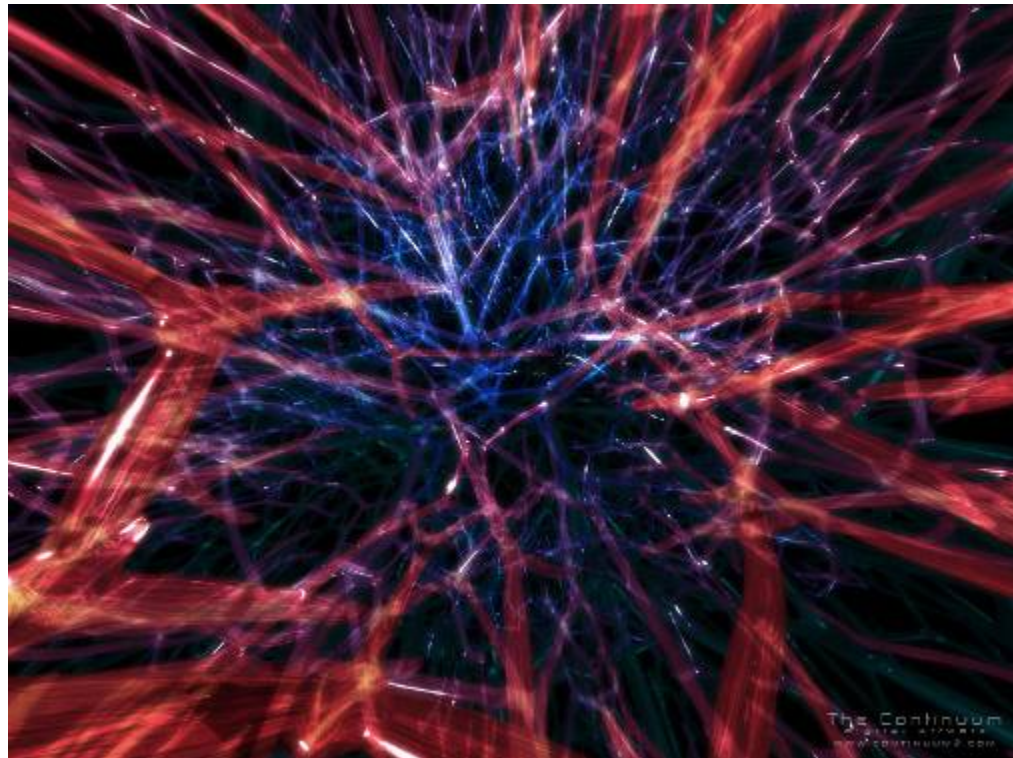
From the inside, you see the tubes
Look for connections, interactions
(or more concretely, XML and APIs)



It's not a truck.

It's a series of tubes.

And if you don't understand those tubes can be filled and if they are filled, when you put your message in, it gets in line and its going to be delayed by anyone that puts into that tube enormous amounts of material



No principles or rules describing 'quality'

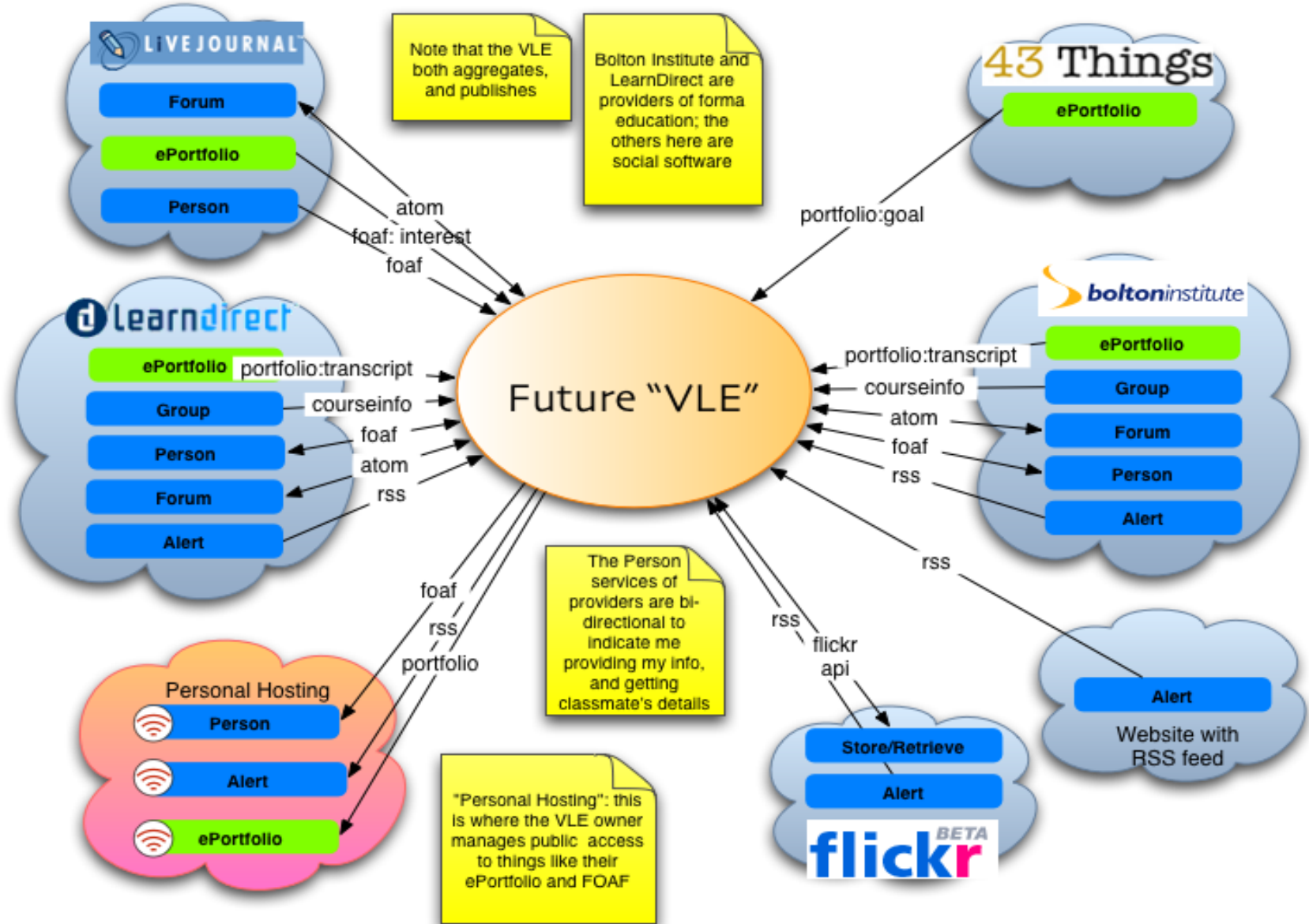
- Individual preferences only
- No rubric or metric
- No 'peers' or 'committee of experts'
- Evaluations are *not* an aggregation – no votes



Surowiecki

It's Chaos!

The Idea of the PLE...



Plex Personal Learning Environment Example

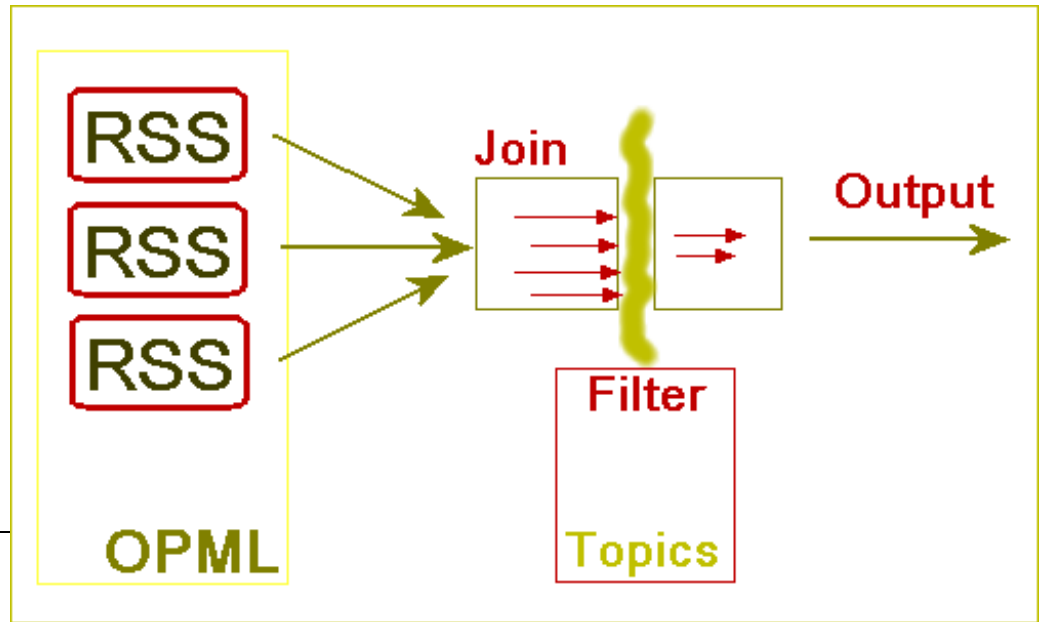
The screenshot displays the Plex Personal Learning Environment interface. The main window is titled "Plex" and contains several panes:

- Opportunities Explorer:** A tree view showing a hierarchy of opportunities. The selected item is "learn three chord rock guitar".
- Opportunity Viewer:** A detailed view of the selected opportunity. It shows the title "learn three chord rock guitar", the number of registered people (1), the provider (43 Things), and the location (http://www.43things.com/thing:). A "Browse" button is visible next to the location field.
- Search Results:** A pane showing search results for the selected opportunity. It includes a "Find It!" button and a "Filter results by:" field. The results are displayed in a table with columns for Title, Provider, and Location.
- Web Browser:** A pane showing the search results page on the 43 Things website. The address bar shows the URL http://www.43things.com/things/view/161919. The page content includes a search bar and a notification that "1 person wants to do this...".

[learn three chord rock guitar]

Collecting and Filtering RSS

<http://www.downes.ca/mygluframe.htm>



MyGlu

By Stephen Downes

[About](#)

Force: 1

Harvesting <http://del.icio.us/rss/Downes>

Feedfile is: myglu/feedcache/del.icio.us_rss_Downes

No content. Harvesting from source.

URL: <http://del.icio.us/rss/Downes>

Parsing Feed=HASH(0x9f0f10c)

Harvesting <http://www.downes.ca/news/OLDaily.xml>

Feedfile is: myglu/feedcache/www.downes.ca_news_OLDaily.xml

No content. Harvesting from source.

URL: <http://www.downes.ca/news/OLDaily.xml>

Parsing Feed=HASH(0x9f0ef8c)

RSS Writr

The screenshot shows the RSS Writr web editor interface. At the top left, there is a search bar and a "Start Search" button. Below this are navigation links: [Change Theme], Stephen's Web, [OLDaily], [Archives], [Threads], [Best Of], [Search], and [Options].

The main content area is divided into two columns. The left column contains the heading "Welcome to RSS Writr" and three paragraphs of instructional text: "Select a content source from the list (see the panel at the lower right hand side of the page).", "When you see an item that interests you, drag it into the editing area (at right). You can drag multiple items into the editor.", and "When you have finished editing, save your new post to your blog." The right column contains a "Title:" input field, a rich text editor toolbar with icons for Bold (B), Underline (U), Italic (I), Bulleted List, Numbered List, Indent Left, Indent Right, Undo, and Redo, and a text area containing the word "Hello".

Below the editor is a "Content Sources" section with a dropdown menu currently showing "Stephen's MyGlu Test".

<http://www.downes.ca/editor/writr.htm>

Edu_RSS Viewer

Stephen's Web

[START SEARCH](#) [\[NEWS\]](#) [\[DISCUSS\]](#) [\[SEARCH\]](#) [\[ABOUT\]](#) [\[ARCHIVES\]](#) [\[OPTIONS\]](#)

← **EDU-RSS RECENT** →

You are logged in as Stephen Downes

[\[Logout\]](#)

*Formation and professional certification open and remote on the free software ****

Tally of the general project, history, objectives, concepts
[From: [Thot](#), April 10, 2007] [Tags: [Project Based Learning](#)]
<http://thot.cursus.edu/rubrique.asp?no=25673>

[Blog This!](#)

1 of 1594

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CONTACT: STEPHEN@DOWNES.CA

<http://www.downes.ca/cgi-bin/page.cgi?action=viewer>

Edu_RSS 0.2 - The Demo

Stephen's Web

[START SEARCH](#)

[\[NEWS\]](#) [\[DISCUSS\]](#) [\[SEARCH\]](#) [\[ABOUT\]](#) [\[ARCHIVES\]](#) [\[OPTIONS\]](#)

Site Administration

[\[ADMIN\]](#)

[\[New\]](#) [\[List\]](#) [Author](#)
[\[New\]](#) [\[List\]](#) [Box](#)
[\[New\]](#) [\[List\]](#) [Event](#)
[\[New\]](#) [\[List\]](#) [Feed](#)
[\[New\]](#) [\[List\]](#) [File](#)
[\[New\]](#) [\[List\]](#) [Journal](#)
[\[New\]](#) [\[List\]](#) [Link](#)
[\[New\]](#) [\[List\]](#) [Page](#)
[\[New\]](#) [\[List\]](#) [Person](#)
[\[New\]](#) [\[List\]](#) [Post](#)
[\[New\]](#) [\[List\]](#) [Publication](#)
[\[New\]](#) [\[List\]](#) [Template](#)
[\[New\]](#) [\[List\]](#) [Theme](#)
[\[New\]](#) [\[List\]](#) [Topic](#)
[\[New\]](#) [\[List\]](#) [View](#)

Mailing List

- [Test Newsletter](#) (Sends to Admin Only)... [Send Newsletter](#)

Harvester

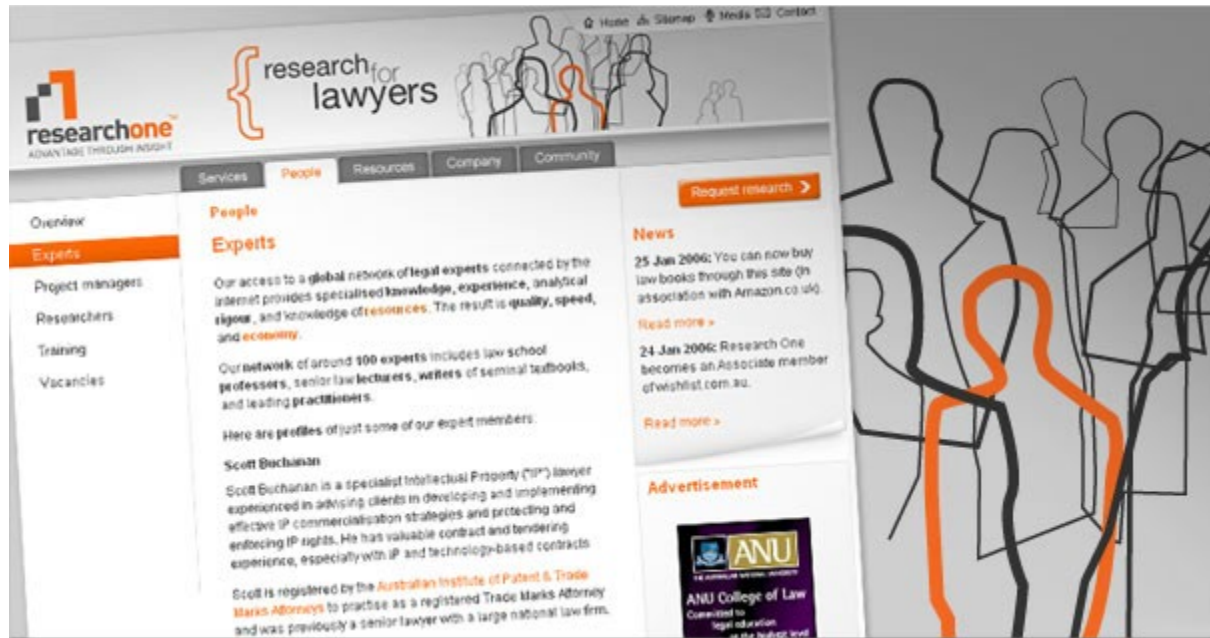
- [Harvest Next In Queue](#)
- [Harvest All Feeds](#)
- [Calculate Most Cited](#)

Harvest Results

- [Most Recent in EduRSS](#) (RSS Version)
- [Look at the files: HTML, XML, RSS](#)

<http://www.downes.ca/edurss02.htm>

The Problem...



How to find the *right* resource...

- at the right time
- for the right person

The old way – use descriptions

General Identifier Title Language Description Domain Idea Structure	MetaMetaData Create MetadataScheme Technical Format Size LocSpec Requirements Type Name MinimumVersion MaximumVersion	Educational PedagogicalType CoursewareGenre Format Approach InteractivityLevel SemanticDensity EducationalUse Role Difficulty Level Duration	RightsManagmnt Role Description Conditions Reciprocity Attribution Prize MonetaryUnit Amount UnitOfPricing
---	--	--	--

<http://www.capuano.biz/Papers/ITS%202000/ITS%202000.htm>

- Dublin Core
- Learning Object Metadata

Descriptions are (necessarily) incomplete



- many properties depend on context
- 'I know it when I see it'
- these relations are dynamic and change...
 - from person to person
 - from time to time

Recommender Systems

The idea is that associations are mapped between:

- User profile – properties of given users
- Resource profile – properties of the resource
- Previous evaluations of other resources

The Match.com Profile

Basics Photos Personality Physical

Next Step →

How creative are you? Are you shy or outgoing, whimsical or pragmatic? find out in **only 5 minutes!**

Explore your personality traits and quirks and find out what type of personality is right for you using Match.com's Ph.D.-designed Personality Test.

When you're finished, we'll send your FREE Personality Report and allow you to include highlights from it in your

Your Match.com Profile

✓ Basics	25% completed
Photos	
Personality	
Physical	

How social is she?

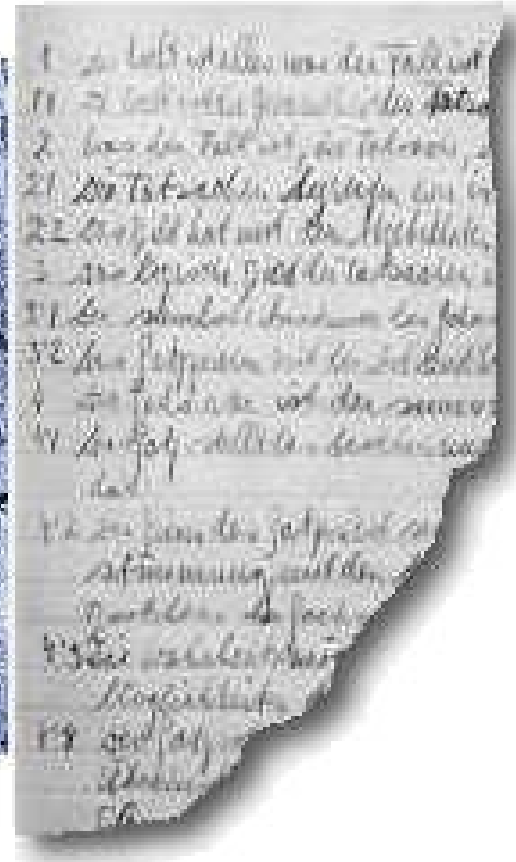
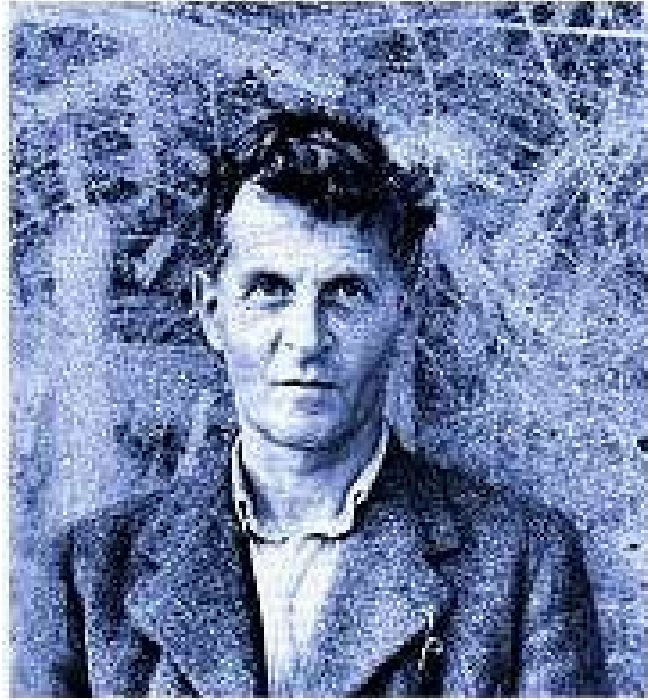
mostly shy & introverted your ideal mostly outgoing

<http://www.slideshare.net/Downes/projecting-quality>

<http://www.slideshare.net/Downes/quality-standards-its-all-about-teaching-and-learning/>

Resource Profiles...

First Person	Second Person	Third Person
<ul style="list-style-type: none">- Bibliographic- Technical- Rights	<ul style="list-style-type: none">- Educational- Sequence and Relational- Interaction	<ul style="list-style-type: none">- Evaluation- Classification
<i>Created by the content author or publisher</i>	<i>Created by the content user (in the process of use)</i>	<i>Created by disinterested third parties</i>



knowledge has many authors,
knowledge has many facets, it
looks different to each different
person, and it changes moment
to moment

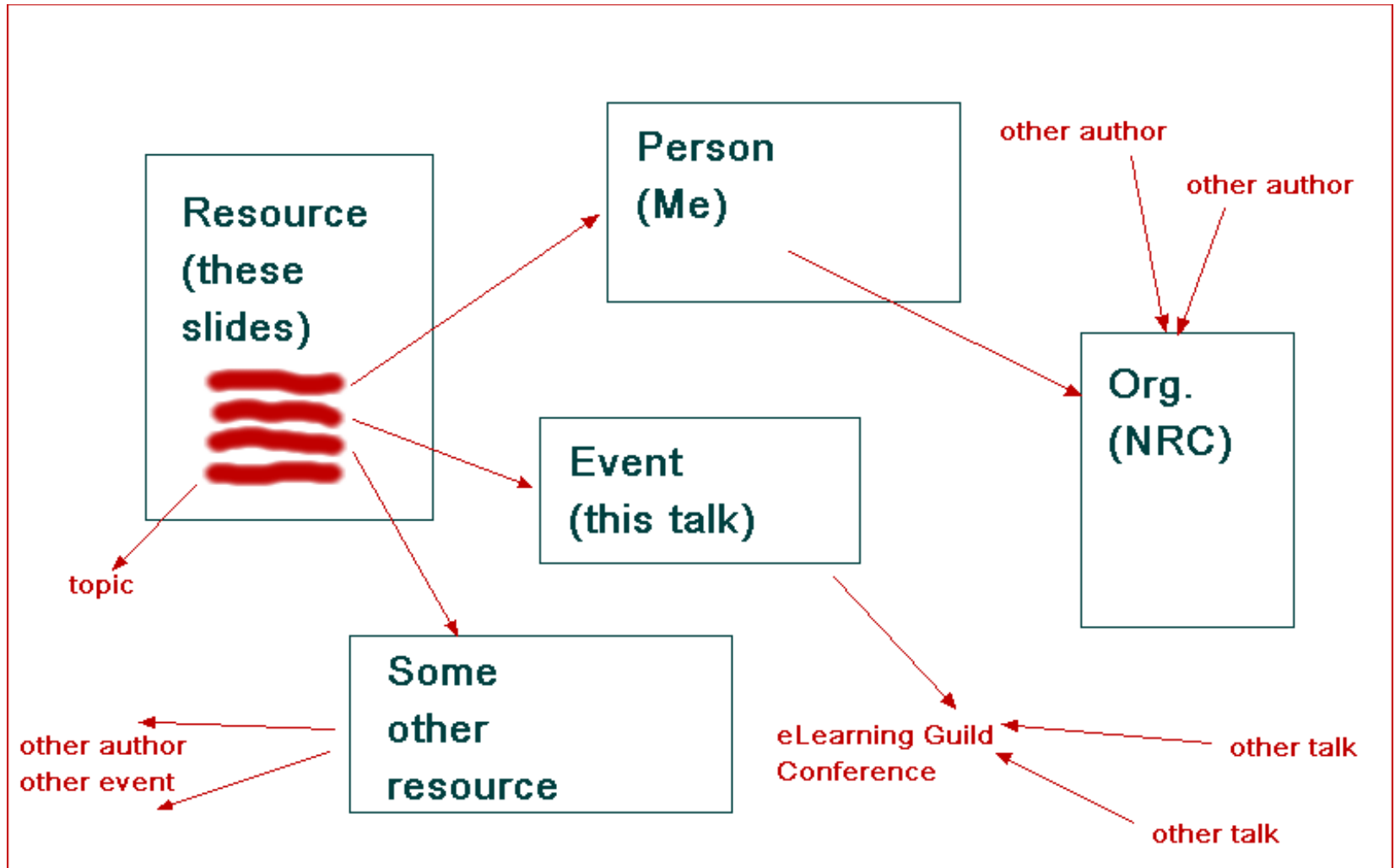
The key insight...

Two very distinct problems are in fact instances of the same problem.

The problem of locating the right resource on the internet is basically **the same problem**

as the problem of getting the question right on the test.

Relations between Entities...



Into this picture rides...

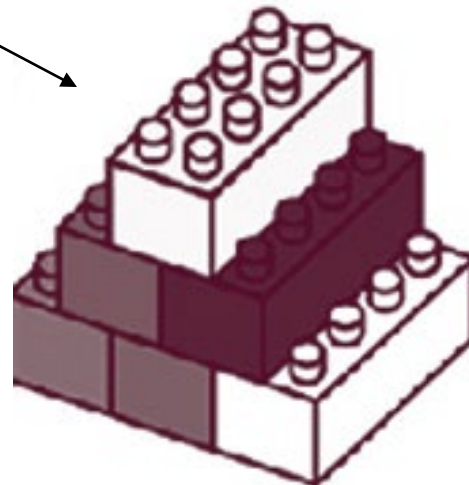
Knowledge management?

the idea...



'Capture' tacit knowledge

... and then codify it



Learning Objects



Hodgins

You Can't Go Back Again



- personal knowledge

- tacit knowledge



Polanyi

Ineffable

Depends on Context

You can't put it into words

You can't generalize it

Knowledge is like recognition

Learning is like perception

*the acquisition of new patterns
of connectivity*

through experience

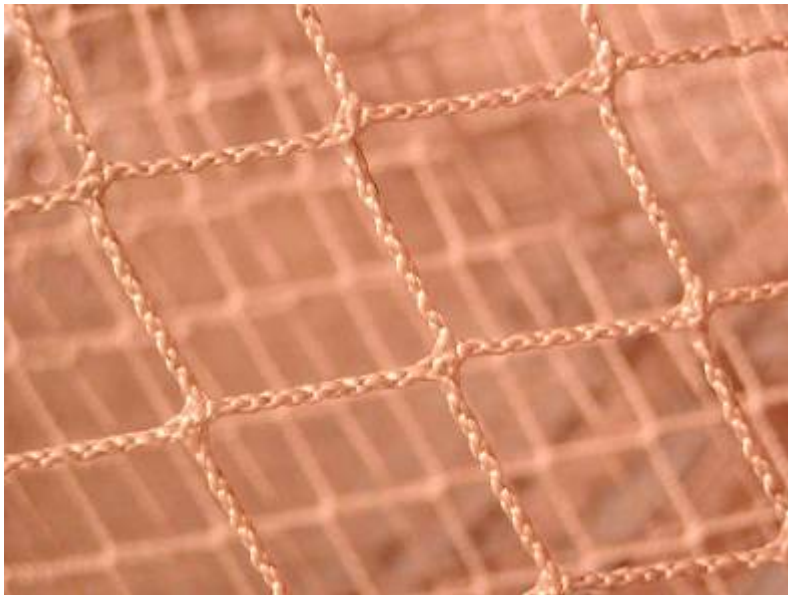


Hume



Patterns in the Mesh

the knowledge is in the network



Old: universals

- rules
- categories

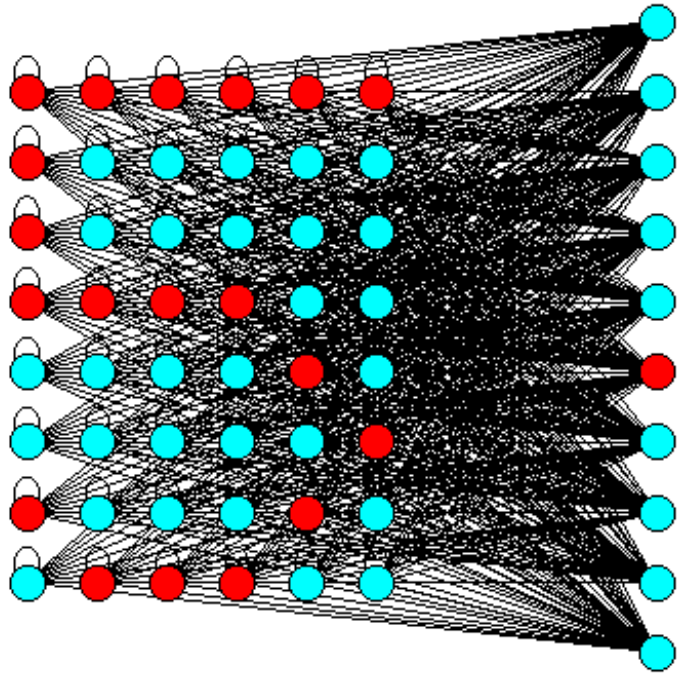
New: patterns

- patterns
- similarities

the knowledge *is* the network



Tenenbaum



Pattern Recognition...



Gibson

You already know this phenomenon,
you've already seen it

Emergent Learning

<http://growchangelearn.blogspot.com/2007/02/emergent-learning.html>

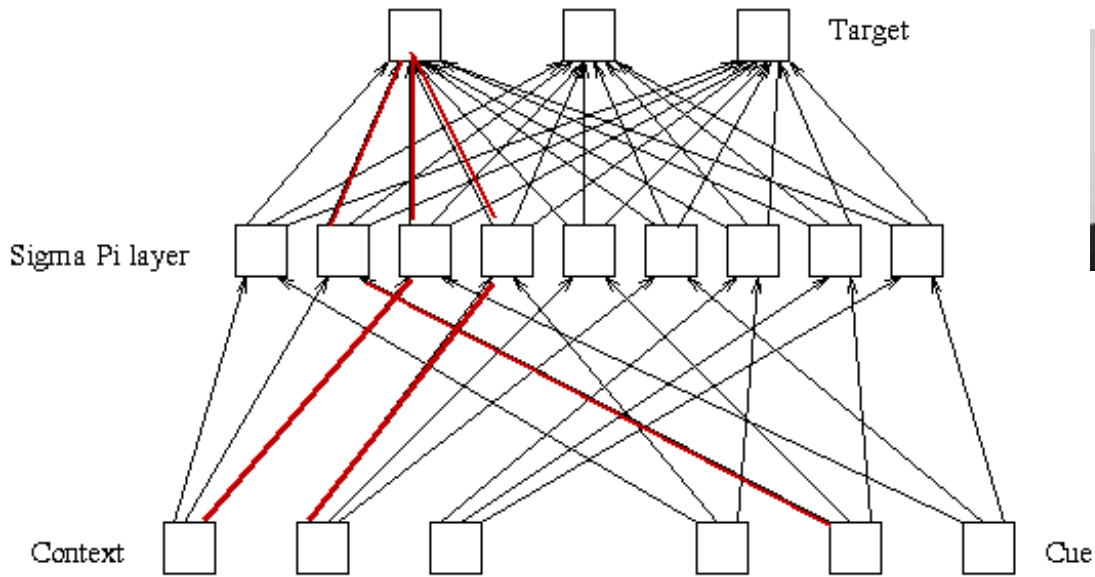
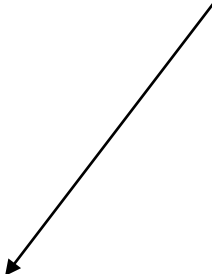
Tom Haskins



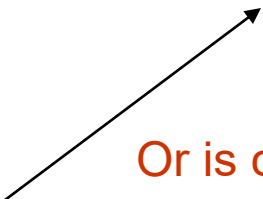
"Now I get it"
A-ha!
"Out of the blue"
"My mind leaped"
"Did an about-face"
"Shut up and did it"
Sudden breakthrough

<http://www.downes.ca/files/osn.html>

stands for?



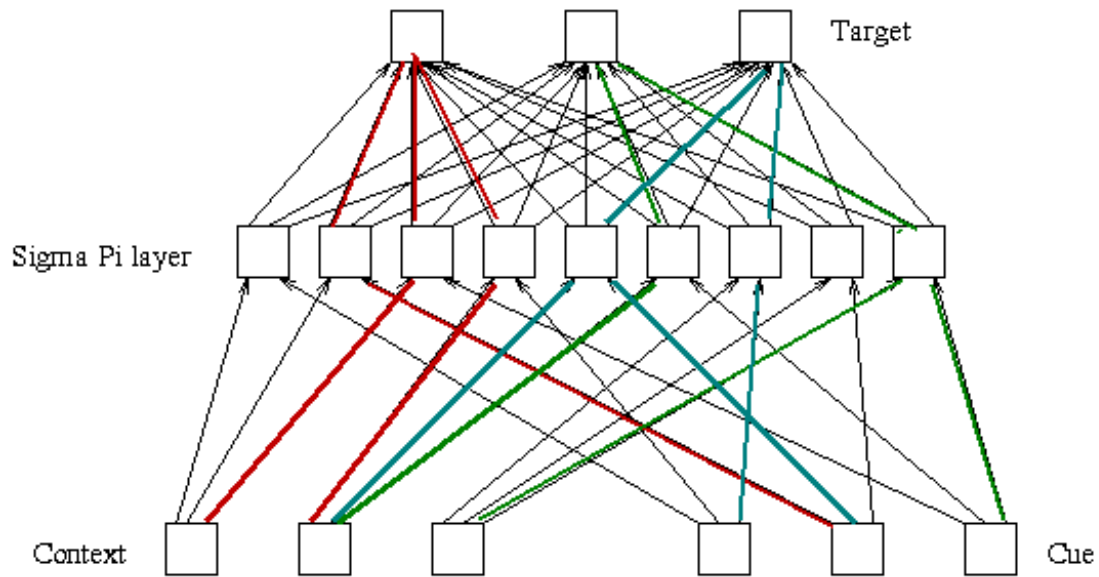
Hopfield



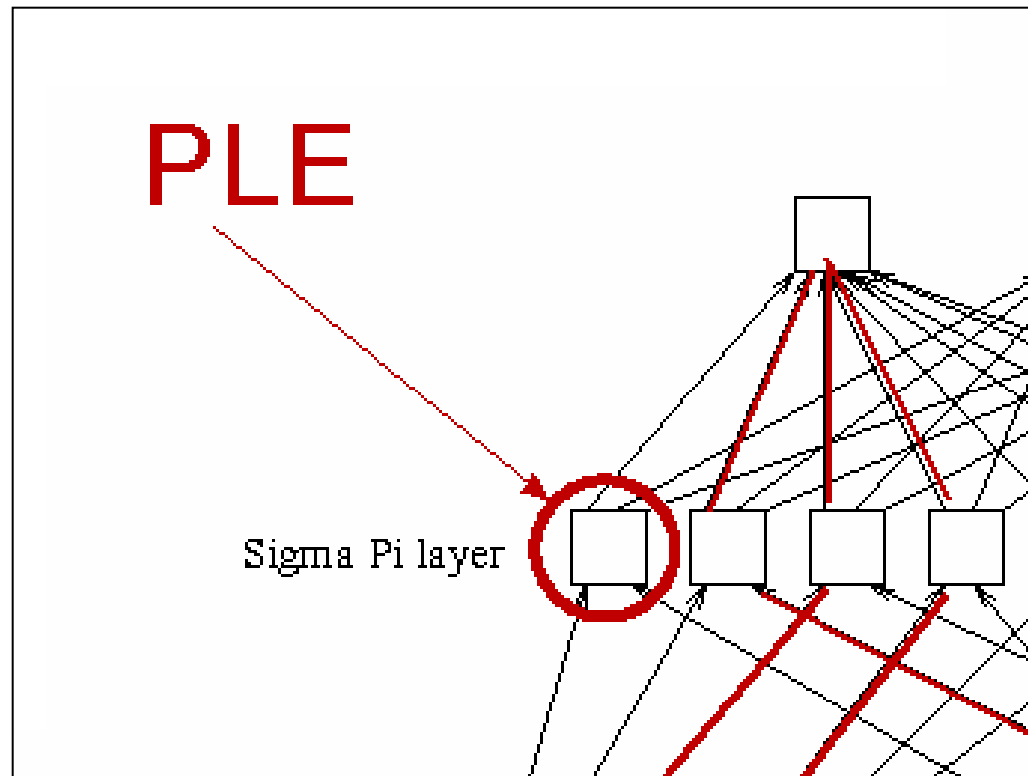
Or is caused by?

Distributed Representation

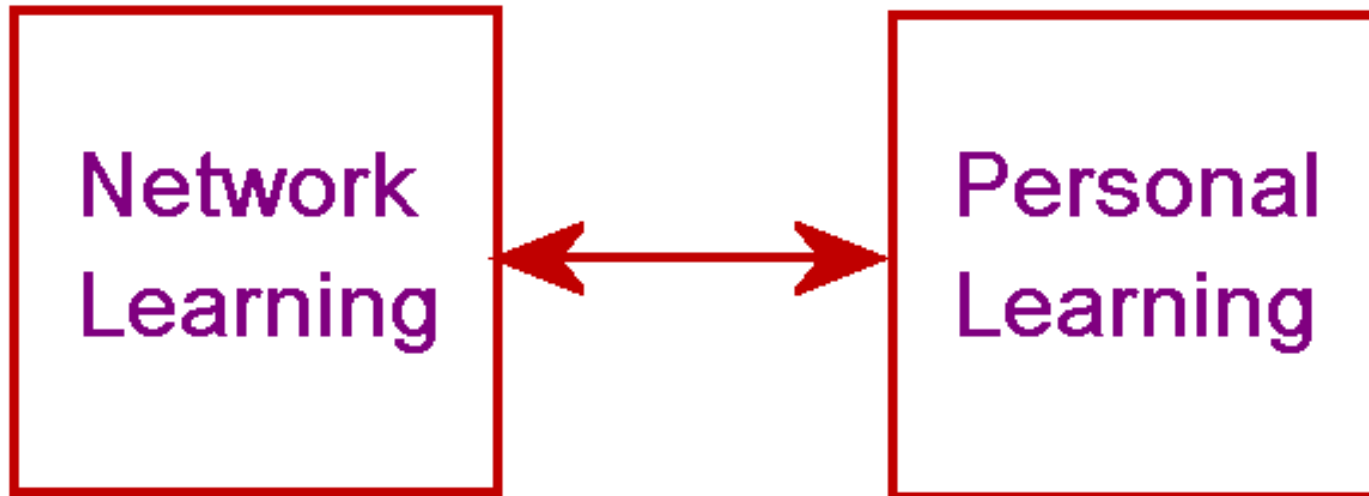
= a pattern of connectivity



Where is the PLE?



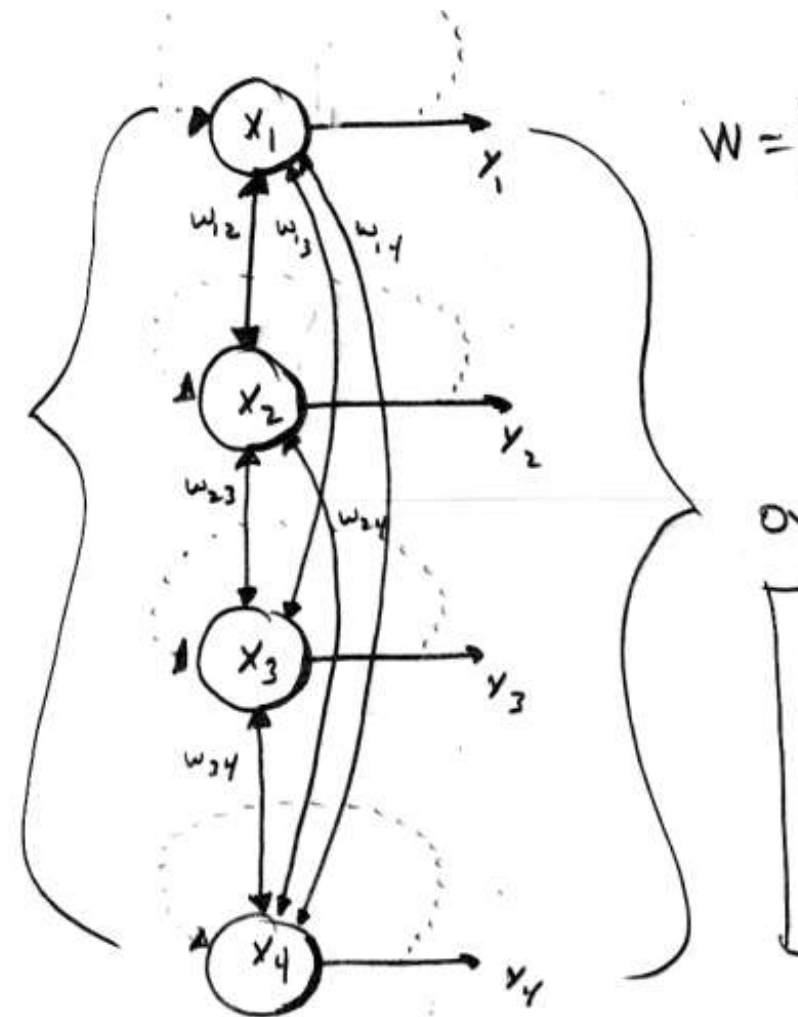
The way networks learn is the way people learn...



This...

Network Learning *Inputs*

- Hebbian associationism
 - based on concurrency
- Back propagation
 - based on desired outcome
- Boltzman
 - based on 'settling', annealing



- Single Layer
- Inputs X_i act as outputs Y_i

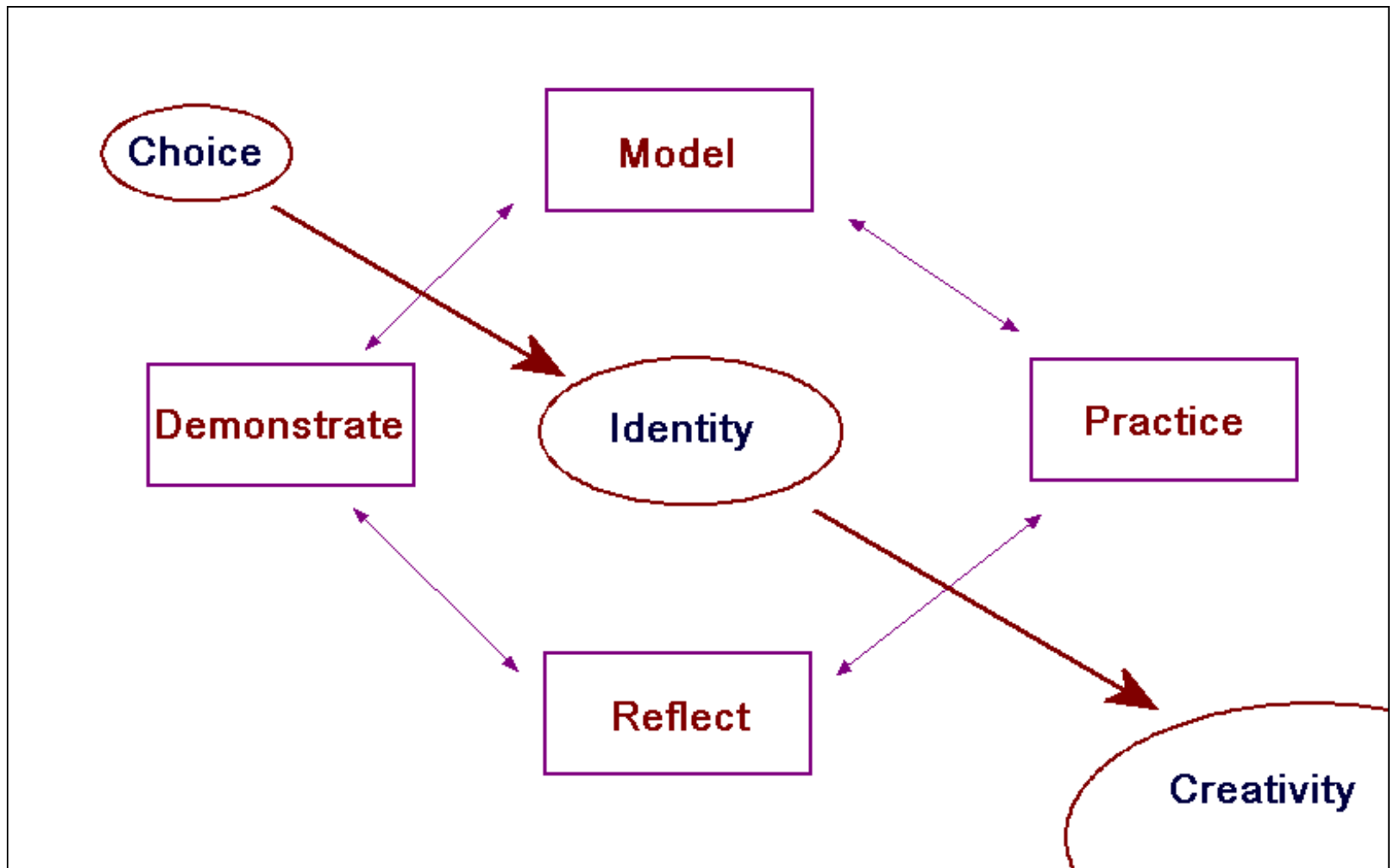
Leads to This...

Personal Learning...

To *teach* is to *model* and to *demonstrate*
To *learn* is to *practice* and *reflect*



What is the PLE?



We can get an idea of what the PLE looks like by drilling down into the pieces...

Model

- conceptual frameworks
 - wiki (wiki API, RSS)
 - concept maps (SVG, mapping format)
 - gliffy (SVG?)
- reference frameworks
 - Wikipedia
 - video / 2L 3D representation – embedded spaces

The question is – how to transport and represent models that are actually used?

Demonstrate

- reference examples

- code library
- image samples

- thought processes

- show experts at work (Chaos Manor)

- application

- case studies
- stories

The question is, how can we connect the learner with the community at work?

Practice

- scaffolded practice
 - game interfaces
 - sandboxes
- job aids
 - flash cards
 - cheat sheets
- games and simulations
 - mod kits
 - mmorpgs

The question is, how can we enable access to multiple environments that support various activities?

The question is, how can we assist people to see themselves, their practice, in a mirror?

Reflection

- guided reflection
 - forms-based input
 - presentations and seminars
- journaling
 - blogs, wikis
- communities
 - discussion, sharing

People talk about 'motivation'
– but the real issue here is
ownership

Choice – Identity - Creativity

- simulated or actual environments that present tasks or problems
- OpenID, authentication, feature or profile development
- Portfolios & creative libraries



Downes

<http://www.downes.ca>