

***“A Model of Collaborative  
Knowledge-Building”***

**Gerry Stahl**

**Center for LifeLong Learning & Design**

**Institute of Cognitive Science &**

**Department of Computer Science**

**University of Colorado, Boulder, CO, USA**

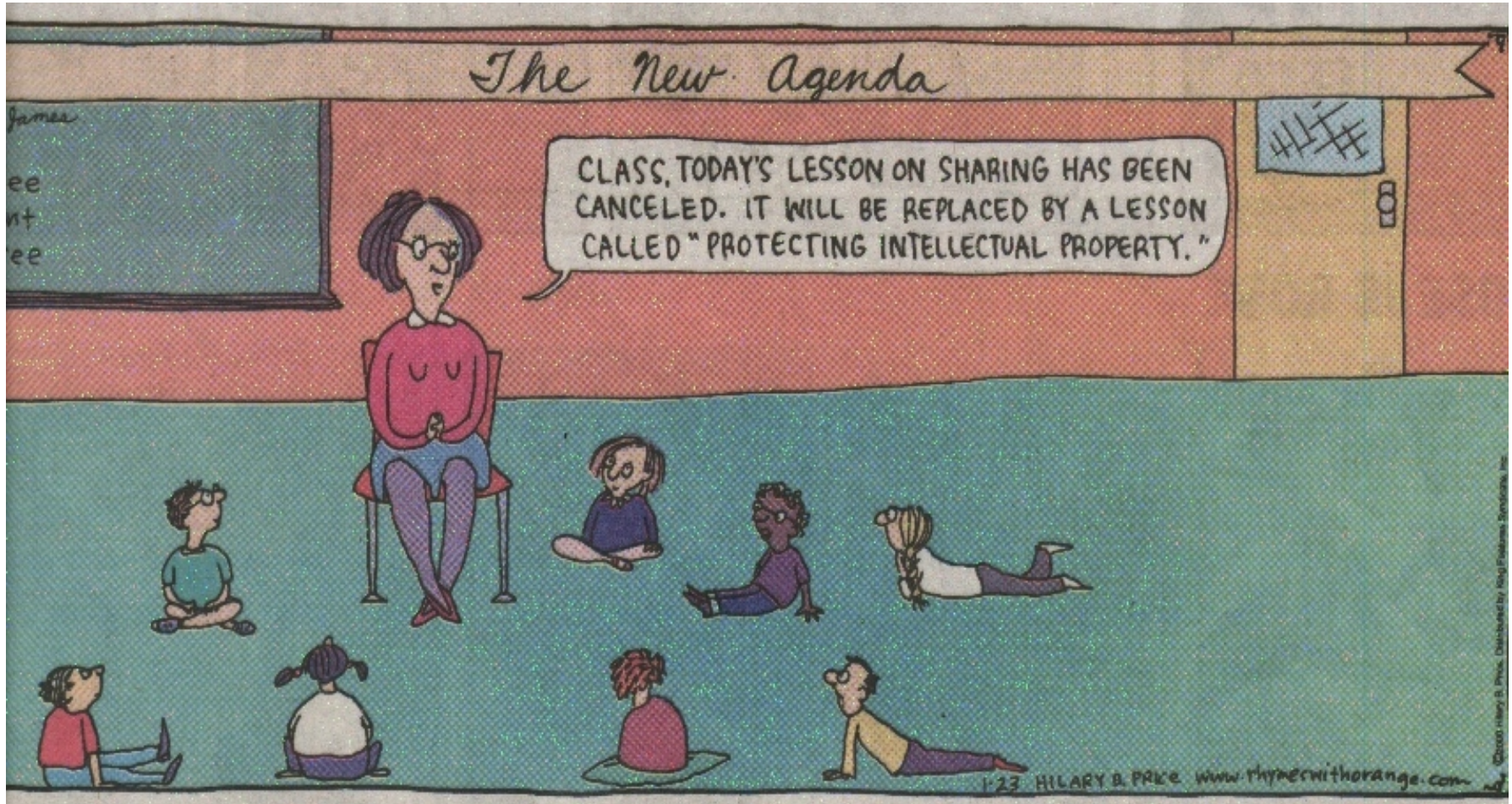
**Gerry.Stahl@Colorado.edu**

**<http://www.cs.colorado.edu/~gerry>**

*beyond discussion & chat*

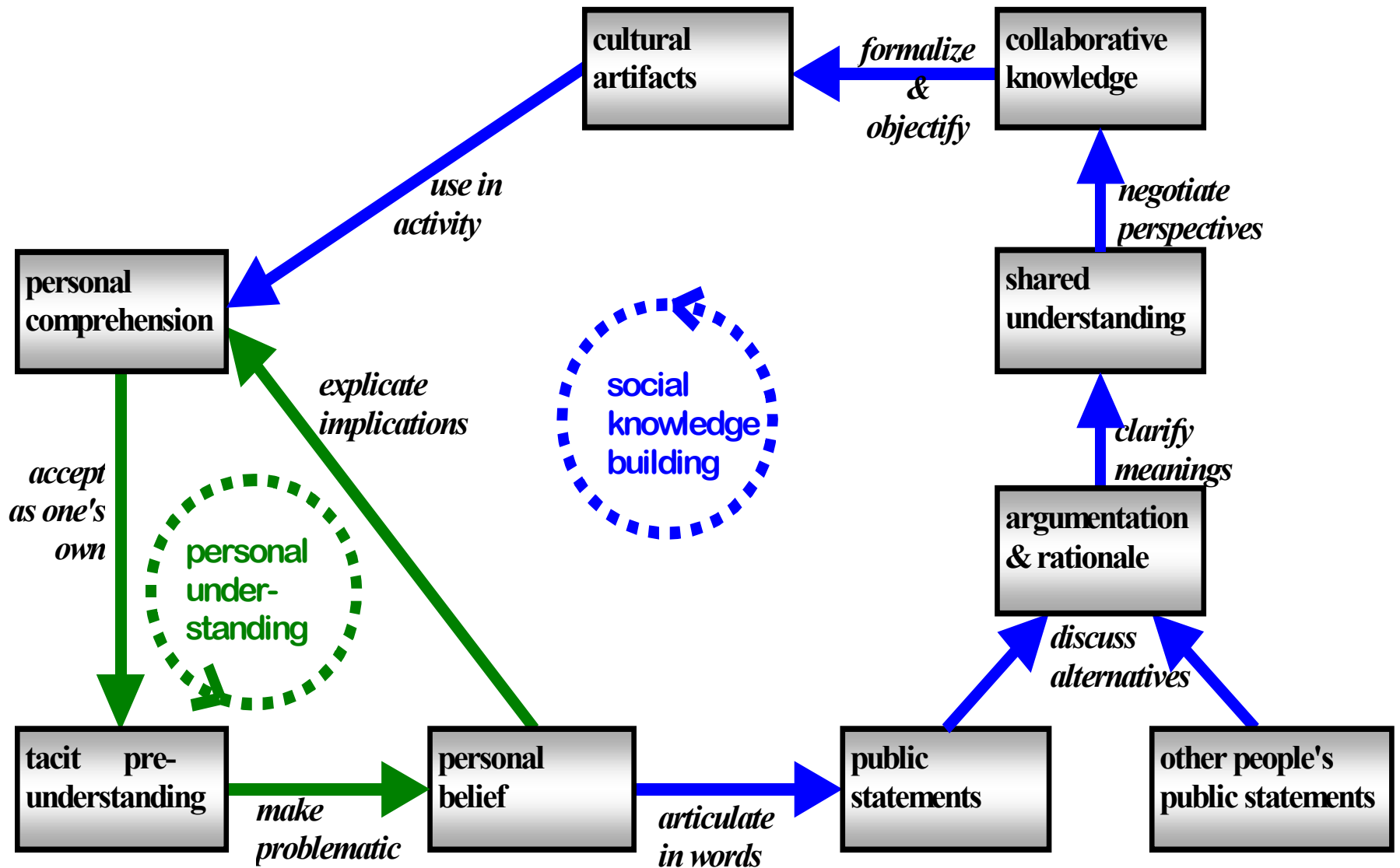
*collaborative knowledge-building  
goes beyond sharing personal  
opinions; it is a complex process  
within community contexts*

# *communities support & restrict collaboration*



*a model of knowledge-building as a  
typical process of social activities*

*interplay of individual cognition &  
social knowledge construction*



*a model of knowledge-building as  
the mediation of individual & group  
activities*

*artifacts in the world provide  
mediating resources*

## *The mediation of social knowledgebuilding*

### Personal perspective

Tacit understanding of the social lived world

Experiencing breakdowns of understanding

Reinterpreting meaning structures

Articulating one's understanding

Formally structuring knowledge

### Mediating tools and systems

Discussion: verbal statements & visual cues

Representations in communication media

Artifacts: physical, symbolic, cultural

Personal external memory devices

Organizational memory systems

### Synergistic group understanding

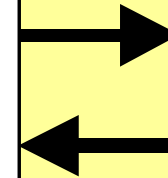
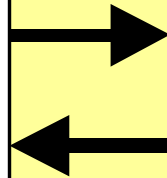
Sharing perspectives

Exchanging arguments & rationale

Clarifying meanings

Negotiating conflicts

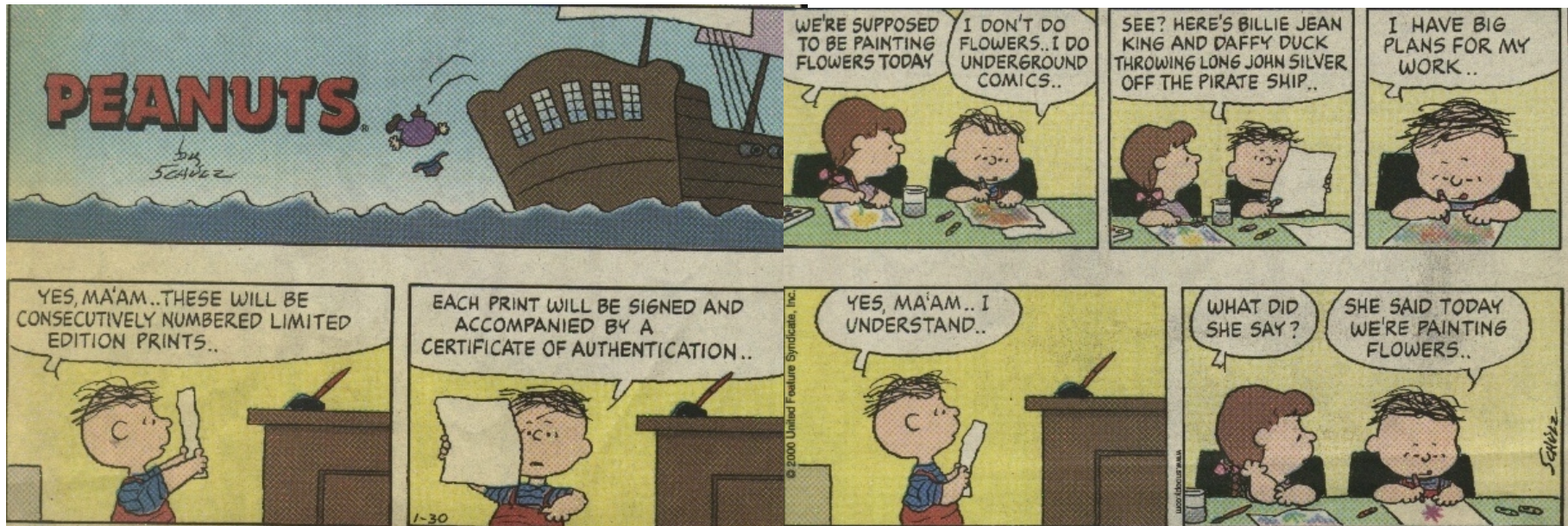
Formally structuring knowledge

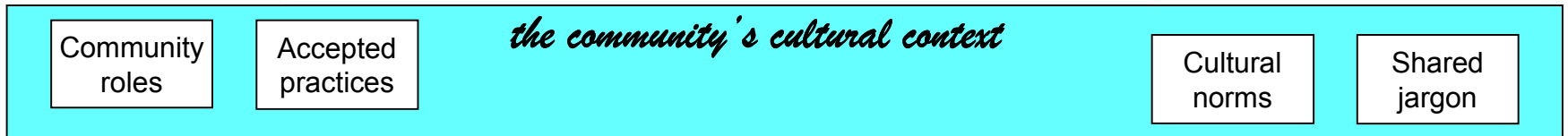
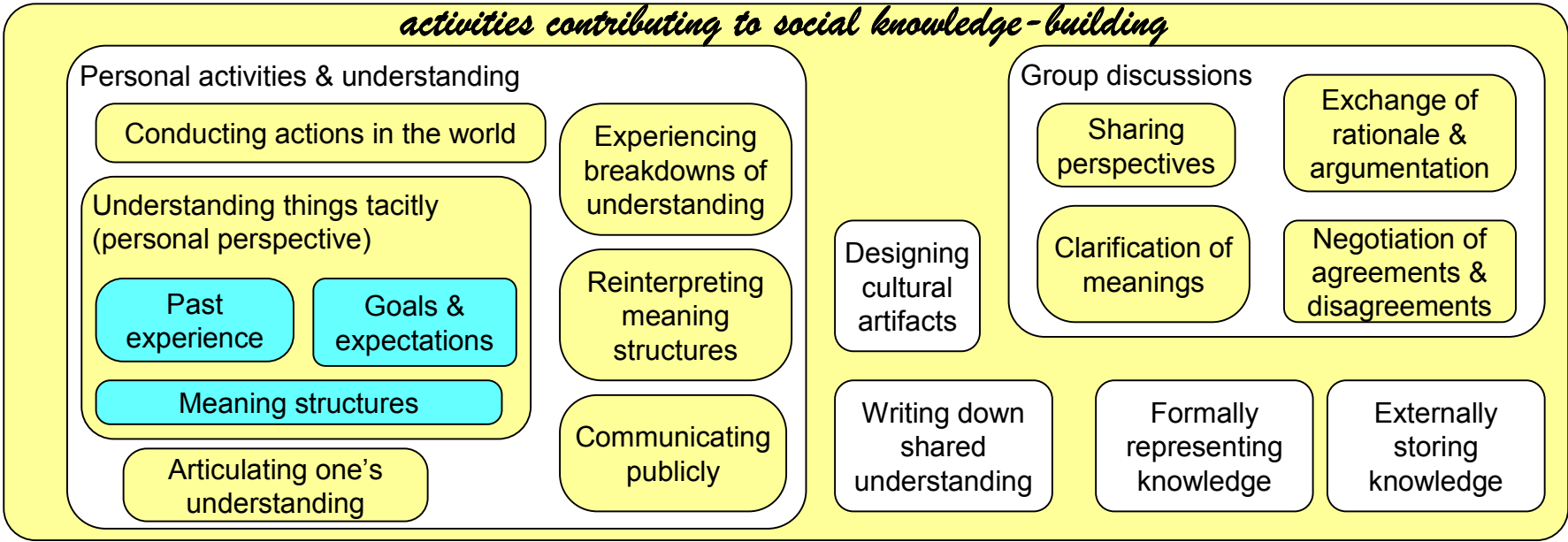


*a model of knowledge-building as  
the use of resources by agents within  
social contexts*

*the local technology, community and  
society define affordances*

# *technology: confined by social practices, subject to negotiation*





*models of knowledge-building can  
provide a framework for software  
design & assessment*

*what activities should collaboration  
software support beyond sharing  
personal opinions & information ?*

# *some technology components of knowledge-building environments*

	<i>Knowledge-building activities</i>	<i>Forms of computer support</i>	<i>Prototype systems</i>
<b>A</b>	<b>articulate in words</b>	<b>discussion forum</b>	<b>DynaClass</b>
<b>B</b>	<b>discuss alternatives</b>	<b>personal &amp; group perspectives</b>	<b>WebGuide</b>
<b>C</b>	<b>argumentation &amp; rationale</b>	<b>argumentation graph</b>	<b>InfoMap</b>
<b>D</b>	<b>clarify meanings</b>	<b>interactive glossary</b>	<b>DynaGloss</b>
<b>E</b>	<b>negotiate perspectives</b>	<b>negotiation support</b>	<b>WebGuide</b>
<b>F</b>	<b>formalize &amp; objectify</b>	<b>interactive bibliography</b>	<b>DynaSource</b>

# WebGuide: supporting discussion, reflection, negotiation, knowledge management, in perspectives

The screenshot displays the WebGuide web application interface. The main window is titled "WebGuide" and contains a navigation menu with "Login", "Discussions", "Perspectives", and "Map of Discussion". Below the menu are tabs for "group", "discussion", "negotiate", "personal", "comparison", "archive", and "perspective: Gerry's personal". A "refresh" button is also present.

The left pane shows a hierarchical tree of discussion items under "Gerry's personal". The selected item is "comment: Group project on WebGuide negotiation (by: Gerry in: group on: 03/23/2000)".

The right pane shows the author "Gerry Stahl" and a list of actions: "show title", "show content", "discuss", "new note", "edit note", "delete note", "move note", "copy note", "link note", "copy to home", "link to home", "email from note", "select second note", "private note", "proposal", and "vote".

An inset window titled "Gamble Gulch - A WebGuide Project - Microsoft Internet Explorer" shows the content of the selected comment. The title is "Group project on WebGuide negotiation". The text reads: "A group of students in Tammy Sumner's User Interface Design course is working on designs of negotiation support in WebGuide. They should be coming up with some interesting ideas in the next week. They can respond to this comment by clicking on the Discuss button and filling out the title and content of their comments." Below the text is a form for adding a comment.

The bottom of the screen shows a Windows taskbar with various application icons and a system clock displaying "12:06 PM".

group

discussion

negotiate

personal

comparison

Gerry's personal

heading: DISCUSSIONS (in: group on: 03/21/2000)

comment: Switching from Title View to Content View doesn't work properly

\*comment: Do not forget to "refresh" the display. (by: Gerry in: group on: 03/21/2000)

comment: That's a nice feature. But how does it work? (by: Marcel in: group on: 03/21/2000)

\*comment: It is a "new" feature (by: Gerry in: group on: 03/29/2000)

heading: PROPOSALS (in: group on: 03/21/2000)

heading: Negotiation (by: Group in: group on: 03/21/2000)

comment: Student project in Dortmund (by: Gerry in: group on: 03/23/2000)

comment: Group project on WebGuide negotiation (by: Gerry in: group on: 03/23/2000)

heading: Other new features (by: Group in: group on: 03/21/2000)

heading: New components (by: Group in: group on: 03/21/2000)

resource: Persona component (by: Group in: group on: 03/21/2000)

resource: Glossary component (by: Group in: group on: 03/21/2000)

resource: Bibliography component (by: Group in: group on: 03/21/2000)

resource: Perspectives component (by: Group in: group on: 03/21/2000)

heading: New functionality (by: Group in: group on: 03/21/2000)

comment: Email (by: Group in: group on: 03/21/2000)

comment: Printing (by: Group in: group on: 03/21/2000)

comment: User Manual (by: Group in: group on: 03/21/2000)

show title  show content

discuss

new note

edit note

delete note

move note

copy note

link note

copy to home

link to home

email from note

select second note

private note

proposal

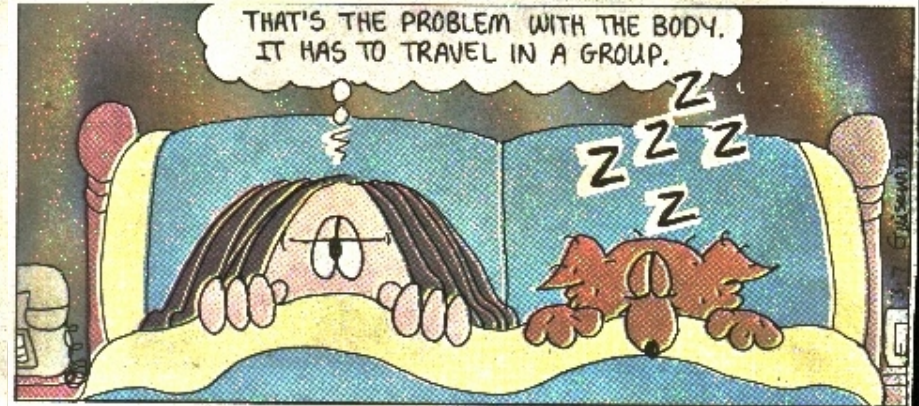
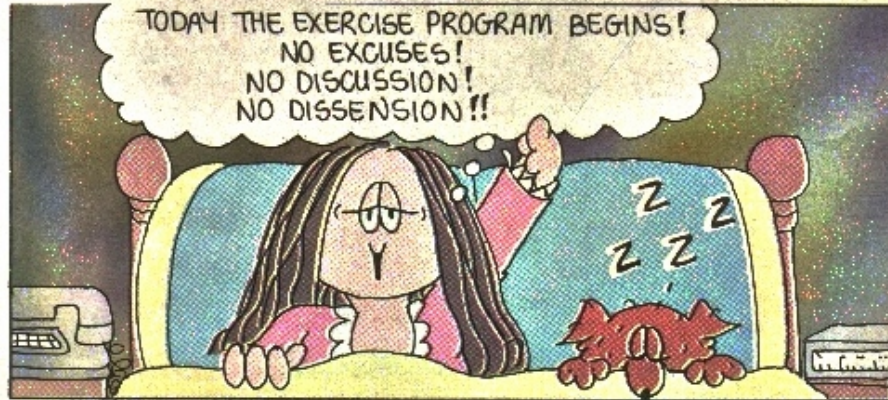
vote

*representing perspectives: personal,  
small team, whole group*

*support for discussion among  
perspectives, comparisons,  
negotiation, group knowledge  
management*

# *knowledge-building as multiple perspectives interacting*

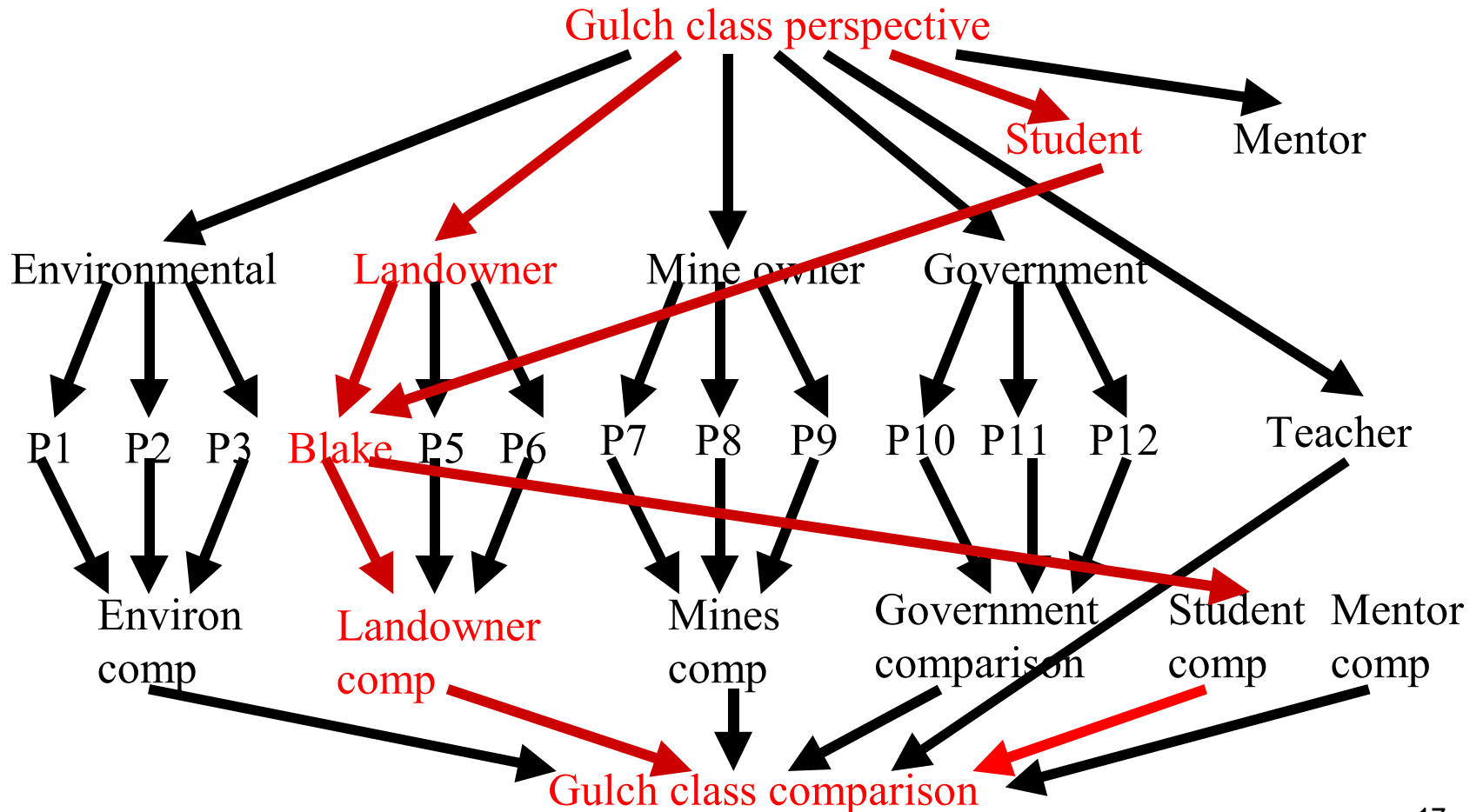
**CATHY**



By Cathy Guisewite

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# *web of perspectives: a flexible hierarchy of computational sharing among groups & individuals*



*future work: system building*

*integration of computer support for  
discussion, perspectives, negotiation,  
bibliography, glossary, scaffolding,  
simulations, ....*

*future work: collaboration analysis  
& system evaluation*

*micro-ethnographic analysis of  
videos of classrooms engaged in  
collaborative knowledge-building,  
with & without technology*

*for further information:*

*Gerry.Stahl@colorado.edu*

*[http://www.cs.colorado.edu/~gerry/  
publications/conferences/2000/](http://www.cs.colorado.edu/~gerry/publications/conferences/2000/)*