



Center for
**LifeLong
Learning
& Design**

University of Colorado at Boulder

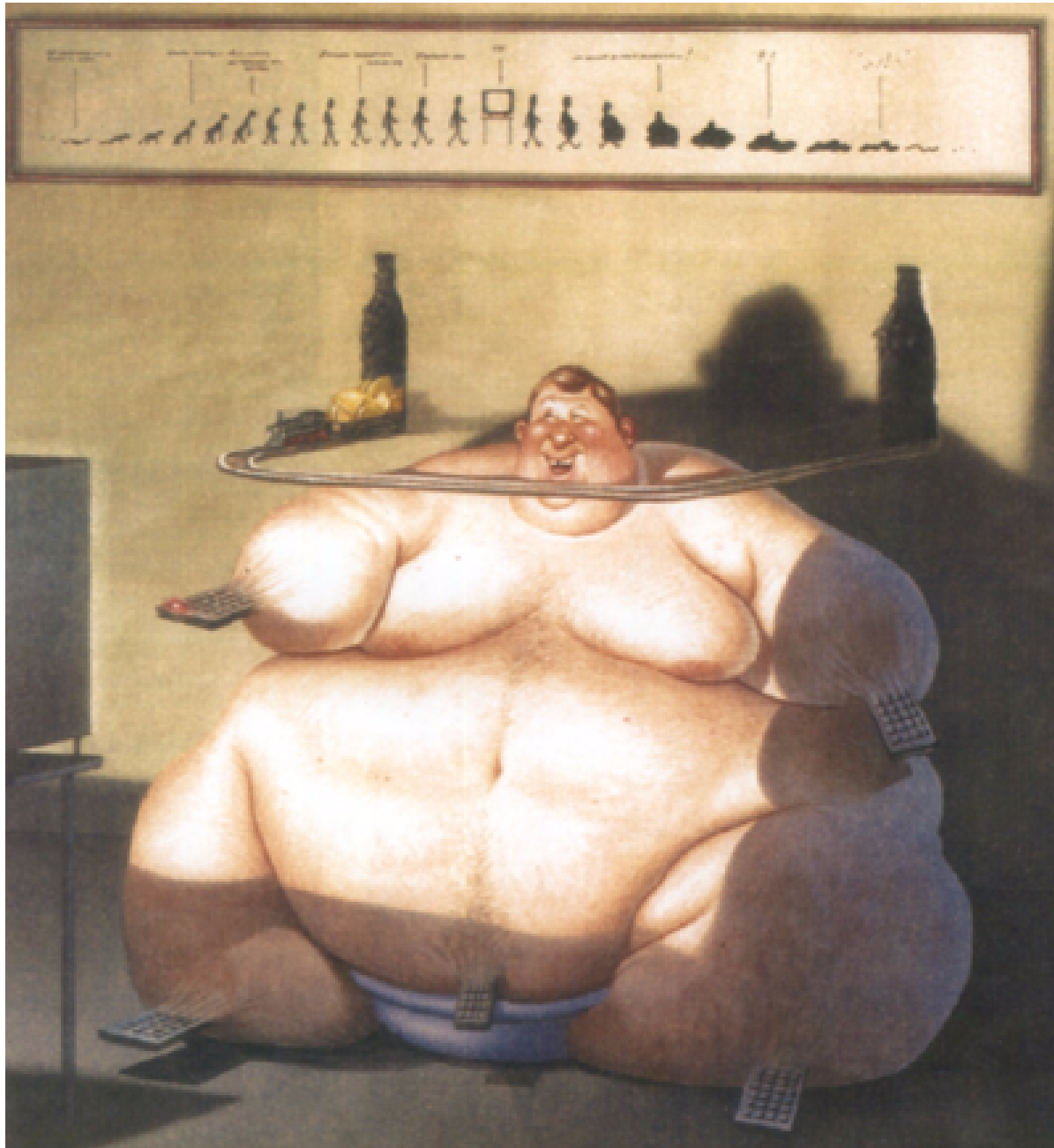
**Wisdom is not the product of schooling
but the lifelong attempt to acquire it.
- Albert Einstein**

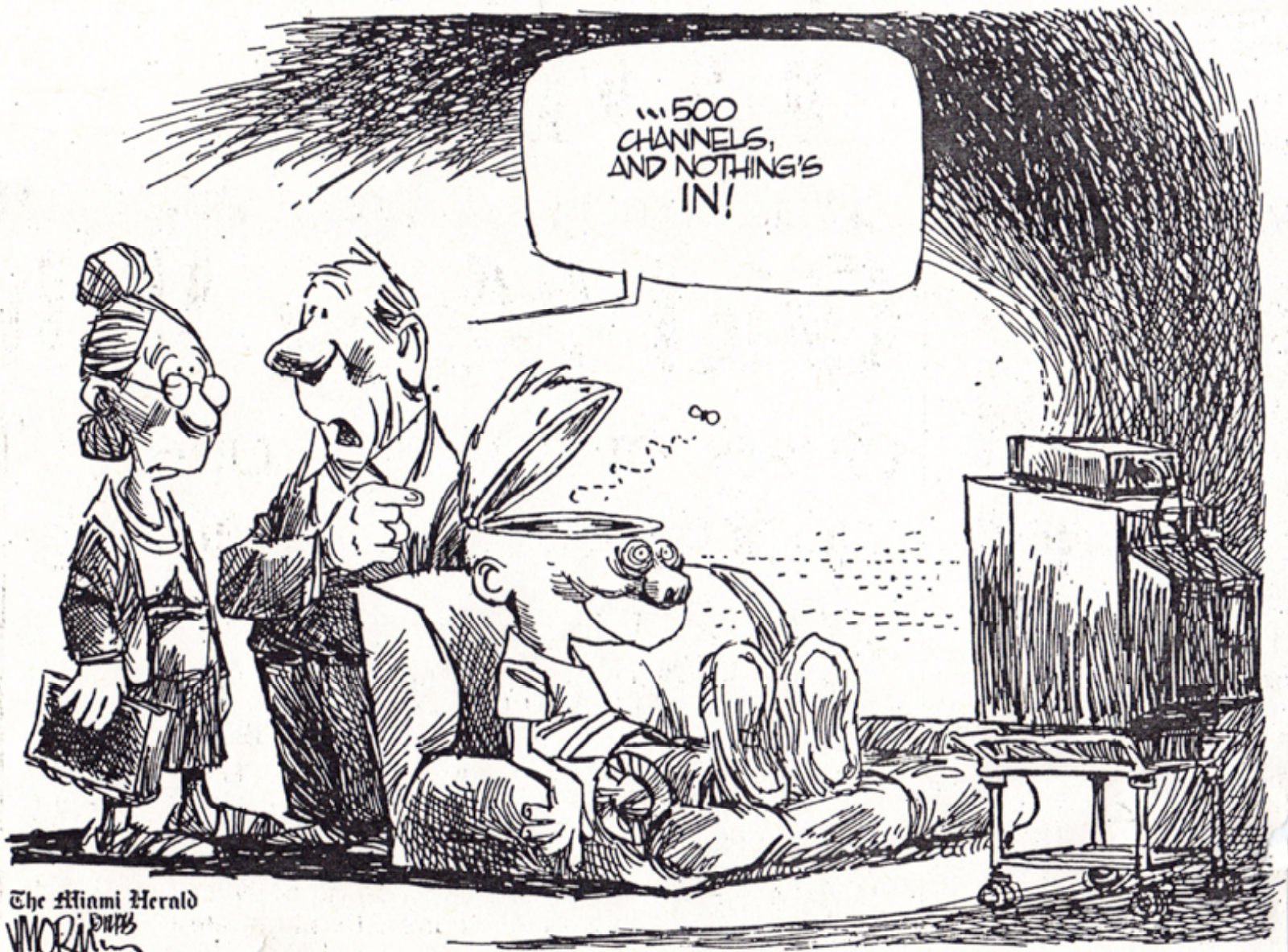
Beyond “Couch Potatoes”: From Consumers to Designers and Active Contributors

**Gerhard Fischer and Hal Eden
Spring Semester 2007
March 7, 2007**

Source: Fischer, G. (2002) Beyond 'Couch Potatoes': From Consumers to Designers and Active Contributors, in FirstMonday (Peer-Reviewed Journal on the Internet), at

http://firstmonday.org/issues/issue7_12/fischer/.





The Miami Herald
V.M. Moran

Consumers and Designers

- **Postman, N. (1985) “Amusing Ourselves to Death—Public Discourse in the Age of Show Business”**
 - Foreword: comparing Orwell’s and Huxley’
 - Conclusion of Postman’s book: the possibility that Huxley, not Orwell, was right

- **George Orwell: Nineteen Eighty-Four (published in 1948)**
 - a pessimistic view of a dull, uniform world where every aspect of life is controlled and organized by the State → “Big Brother is watching you”
 - Orwell warns that we will be overcome by an externally imposed oppression

- **Aldous Huxley's Brave New World (published in 1932)**
 - no Big Brother is required to deprive people of their autonomy, maturity and history
 - people will come to love their oppression, to adore the technologies that undo their capacities to think

Orwell ↔ Huxley

Orwell	Huxley
feared were those who would ban books	feared was that there would be no reason to ban a book, for there would be no one who wanted to read one
feared those who would deprive us of information	feared those who would give us so much that we would be reduced to passivity and egoism
feared that the truth would be concealed from us	feared the truth would be drowned in a sea of irrelevance.
feared we would become a captive culture	feared we would become a trivial culture
feared that what we hate will ruin us	feared that what we love will ruin us

Children Creating their Own Jewelry



Hypergami



Penguinhedra

Fischer –Technik Trucks



3D Warehouse



Observations

- **what is different from buying finished products:**

- work material is needed
- tools are needed
- work place environment is needed
- a coach or facilitator may be needed

- **objectives:**

- a meta-design approach / environment
- this is a unself-conscious culture of design → the kids do not have to articulate what they want; the emerging artifact talks back to them
- power users may emerge in such environments

- **differentiate between different domains**

- "hand-made" and crafts (e.g.: jewelry, Hypergami,.....)
- learning something (Lego, FischerTechnik, Hypergami. ...)
- utility objects / "assembly-required" consumer goods — e.g., grills, inexpensive furniture, toys, exercise machines

Different Opinions – Some Remarks from Students

- **from Chinese/Japanese students**

- I had no designer experience in school education that I can remember.
- I was astonished at heated arguments in the USA's classroom when I first took a course at CU. Some time students act as teachers. They speak out their minds and opinions loudly.
- In China, students are taught to respect instructors, which is good, however, the students are only supposed to be listeners and followers, and students and instructors are never at the same level. Therefore, there's no way for students and instructors to be co-learners and co-designers. There's an old chinese saying that youngsters should not point out elders' faults. Teachers are superior.

- **some other quotes:**

- I am very offended by the proposal that I have been a "passive consumer" in my own education.
- Humans want things as easy as possible for them. The reason we are a consumer society is because that's what we want to be.
- Consumption and design are very closely related. There is no consumption without design, and no design without consumption.

Some Remarks from Students – Continued

- My best designer experience has come from my own ambition. Developing a hospital intranet where data distribution and accuracy has been extremely challenging. The other part of this experience is the fact that the nature of it brings me into interaction with a number of professionals with different experiences and understandings of technology. Assisting them and bringing them to a greater understanding of the power behind technology is very rewarding.
- The problem with giving students power to decide what and how they learn —to let them be significantly involved in the design of their own academic system — is that they don't yet have the knowledge (and in some cases, maturity) to make the right decisions. How does a physics student decide on a curriculum? He doesn't know what he can learn and what he needs to know to learn it, only his professor or another more knowledgeable person does.
- Design issues can't always be left up to the user because the user doesn't always know what's best. Why else is there a separation between children and adults?

My Original Idea

- **all** people should be “active contributors, designers, engaged citizens” **all** the time in **all** context

- **division of labor**
 - professional designers play an important role in our society
 - the “average” person does not want to build her/his own houses, design her/his own car, or write her/his own software system or sorting routine
 - All people do not have the time to participate equally in all aspects of the political system in order to become fully engaged and informed, and therefore rely on intermediaries who act in their interests.

- **Horst Rittel:** *“The experience of having participated in a problem makes a difference to those who are affected by the solution. People are more likely to like a solution if they have been involved in its generation; even though it might not make sense otherwise”*

Beyond Binary Choices – The Consumer/Designer Spectrum

▪ claims:

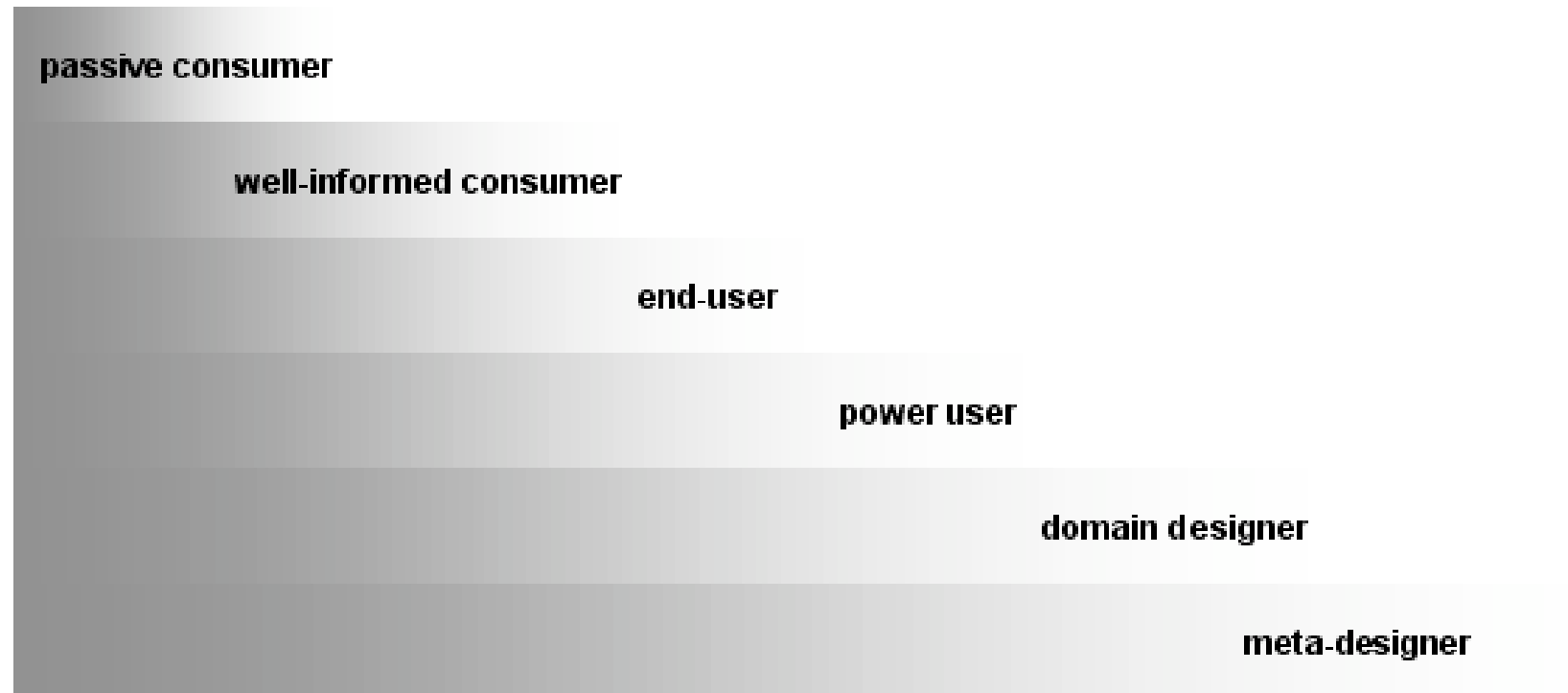
- there is nothing wrong being a consumer (watching a tennis match, listening to a concert, ...)
- the same person is and wants to be a consumer in some situations and in others a designer
- consumer / designer is not an attribute of a person, but of a context

▪ problems:

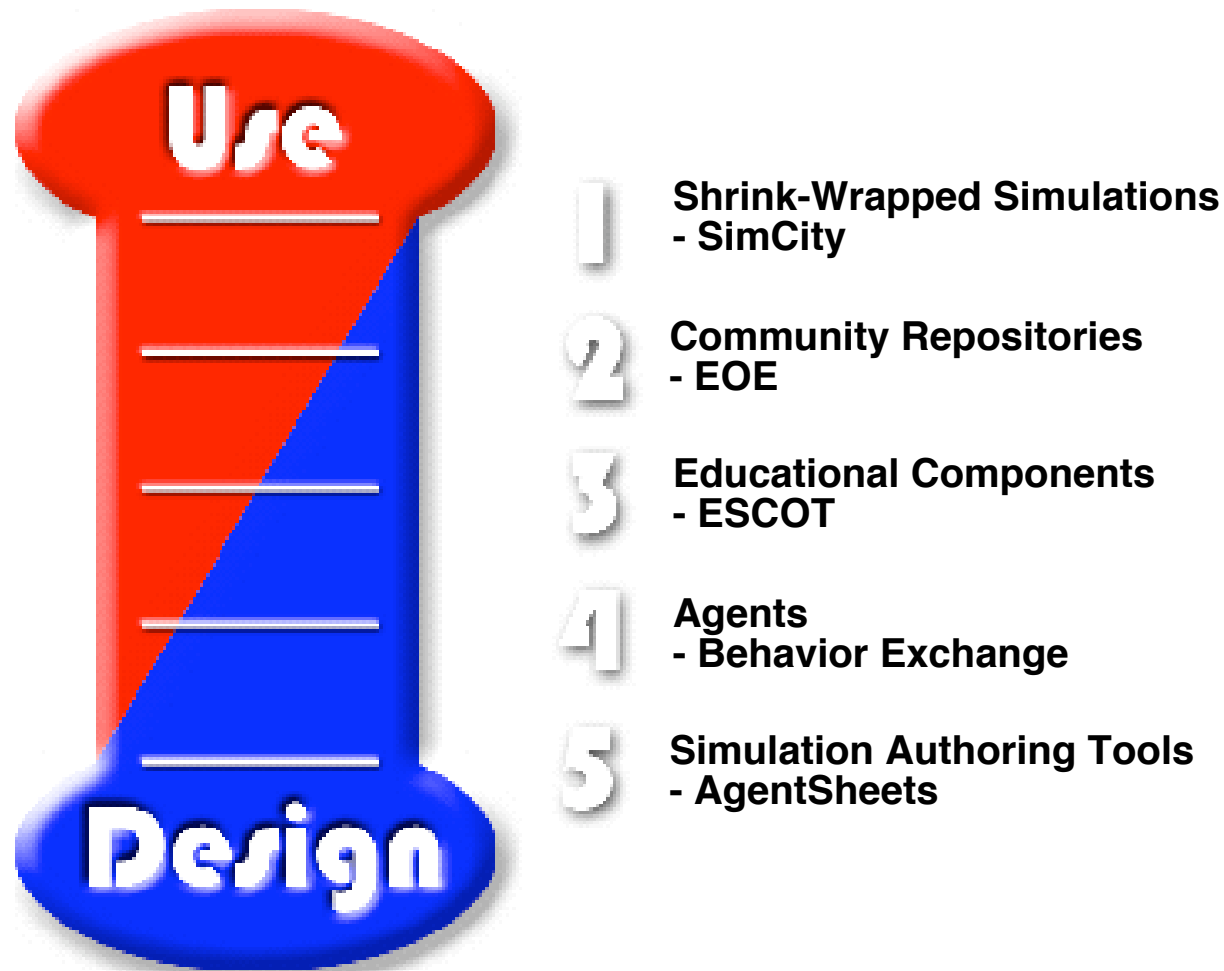
- someone wants to be a designer but is forced to be a consumer (personally *meaningful activities*)
- someone wants to be a consumer but is forced to be a designer (personally *irrelevant activities*)

Beyond Binary Choices – The Consumer/Designer Spectrum

CONSUMER ←-----▶ DESIGNER



The Use / Design Spectrum

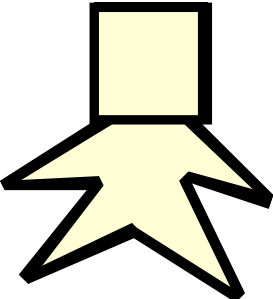


see: A. Reppening, A. Ioannidou, J. Phillips “Collaborative Use & Design of Interactive Simulations”, Proceedings of the Conference on Computer Supported Collaborative Learning (CSCL '99), Stanford, 1999, pp 475-487

Claims and Observations

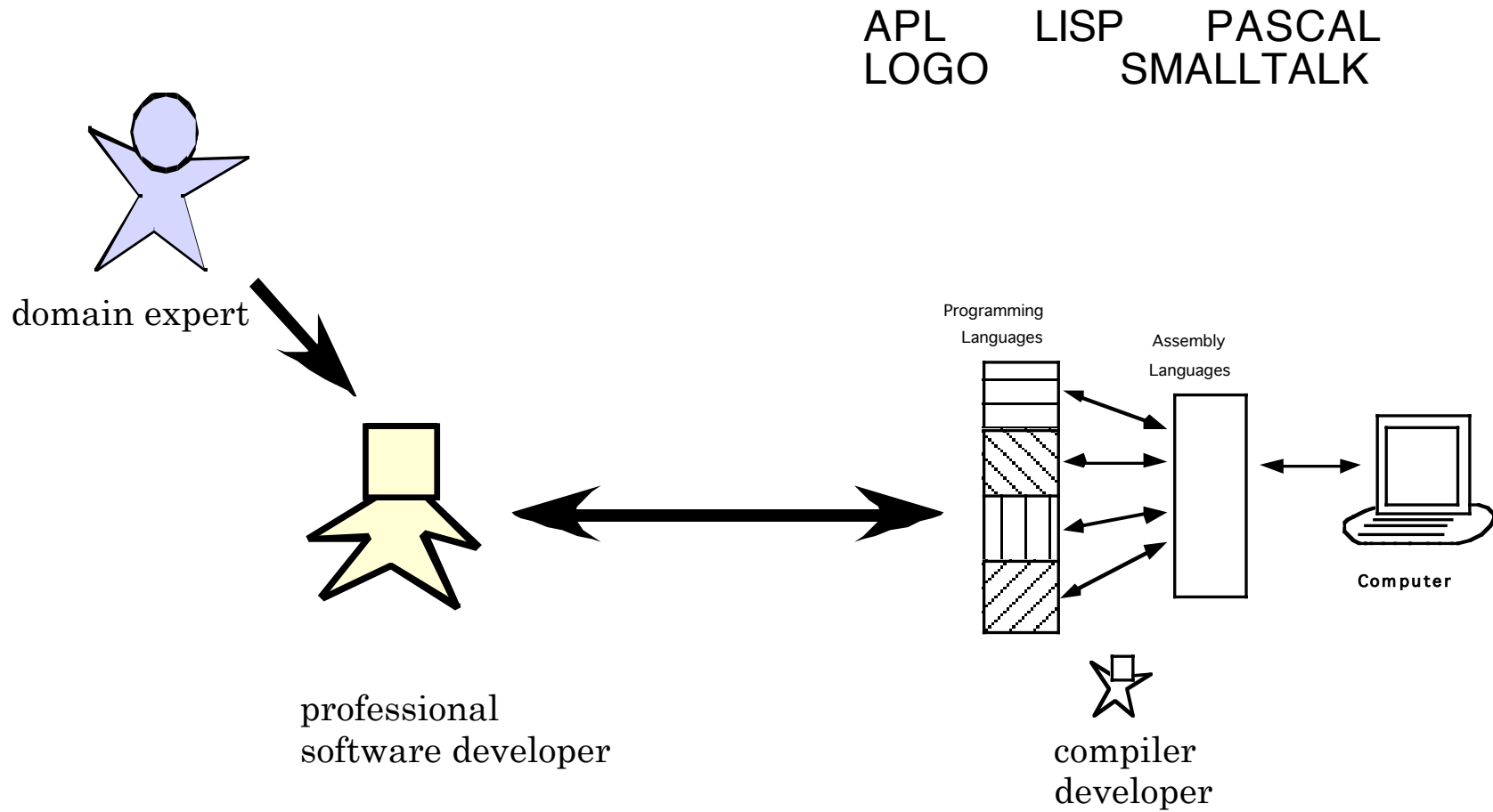
- **migration path** → how can we support people to become incrementally more competent, engaged?
- **utility** =
$$\frac{\text{value}}{\text{effort}}$$
- Unproven Claims (Brown, J. S. (1991) "Research That Reinvents the Cooperation," Harvard Business Review, Jan/Feb 1991, pp. 102-111)
 - p 106: *“technology will become so flexible that users will be able to customize it ever-more precisely to meet their particular needs — a process that might be termed mass customization”*
 - p 108: *“provide people with easy-to-use programming tools so they can customize the information systems and computer applications that they work with”*

Programming – in the Very Early Days

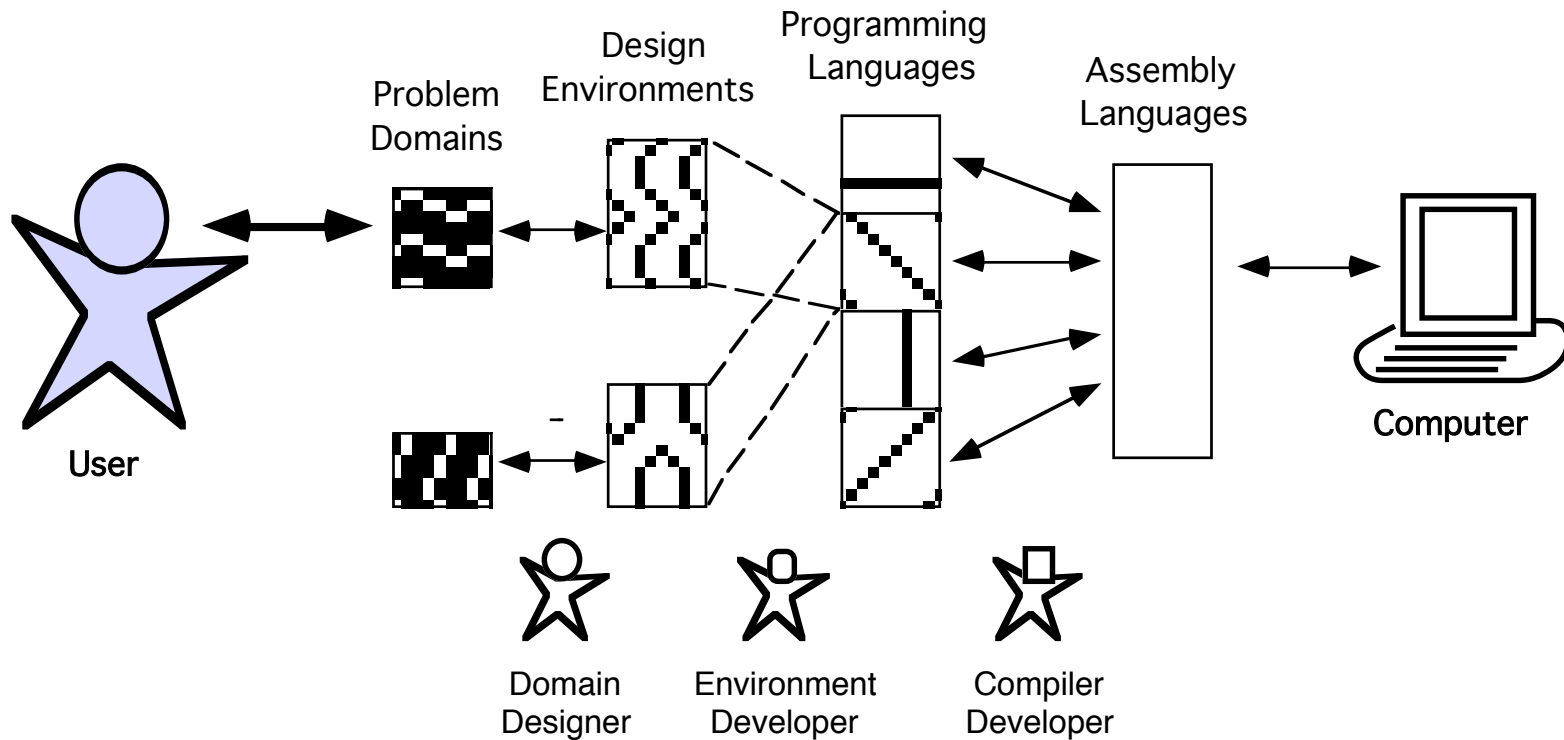


Computer

Human-Computer Interaction



Support for a Migration Path – A Layered Architecture Supporting Human Problem Domain Interaction



Comparing Consumer and Designer Roles

	consumer	designer
activity	use, listen, surf; access of existing information; acquire prerequisites for engaging in design activities	construct, make your own waves; informed participation
learning effort	small	large
depth of understanding	shallow	deep
engagement	normal	substantial
learning opportunities	limited because no artifacts are created	the “back-talk” and the “breakdowns” from the artifacts created lead to learning opportunities
mismatch	wanting to be a designer in personally relevant activities	wanting to be a consumer in personally irrelevant activities
rewards	pleasure	develop new skills, peer recognition, social capital,

Unselfconscious Cultures of Design

(Christopher Alexander, Architect)

- breakdown and correction occur side by side (→ design-in-use)
- there is no formal set of rules describing how to repair breakdowns, since the breakdowns were not anticipated
- the knowledge to repair breakdowns comes from the knowledge of the user, who is best able to recognize a lack of fit, and how the artifact should be changed to improve its fit to the environment
- unselfconscious cultures of design can cope with ill-defined problems
 - require the integration of problem framing and problem solving
 - ill-defined problems cannot be delegated

Comparing Self-conscious and Unself-conscious Cultures of Design

	self-conscious	unself-conscious
definition	an explicit, externalized description of a design exists (theoretical knowledge)	process of slow adaptation and error reduction (situated knowledge)
original association	professionally dominated design, design for others	primitive societies, handmade things, design for self
primary goal	solve problems of others	solve own problems
examples	designed cities (Brasilia, Canberra) Microsoft Windows	naturally grown cities(London, Paris) Linux
strengths	activities can be delegated; division of labor becomes possible	many small improvements; artifacts well suited to their function; copes with ill-defined problems

Comparing Self-conscious and Unself-conscious Cultures of Design

	self-conscious	unself-conscious
weaknesses	many artifacts are ill-suited to the job expected of them	no general theories exist or can be studied (because the activity is not externalized)
requirements	externalized descriptions must exist	owners of problems must be involved because they have relevant, unarticulated knowledge
evaluation criteria	high production value; efficient process; robust; reliable	personally meaningful; pleasant and engaging experience; self-expression
relation with context	context required for the framing of the problem	both problem framing and solving take place within the bigger context

Technology and Media Support for Consumer and Designer Roles

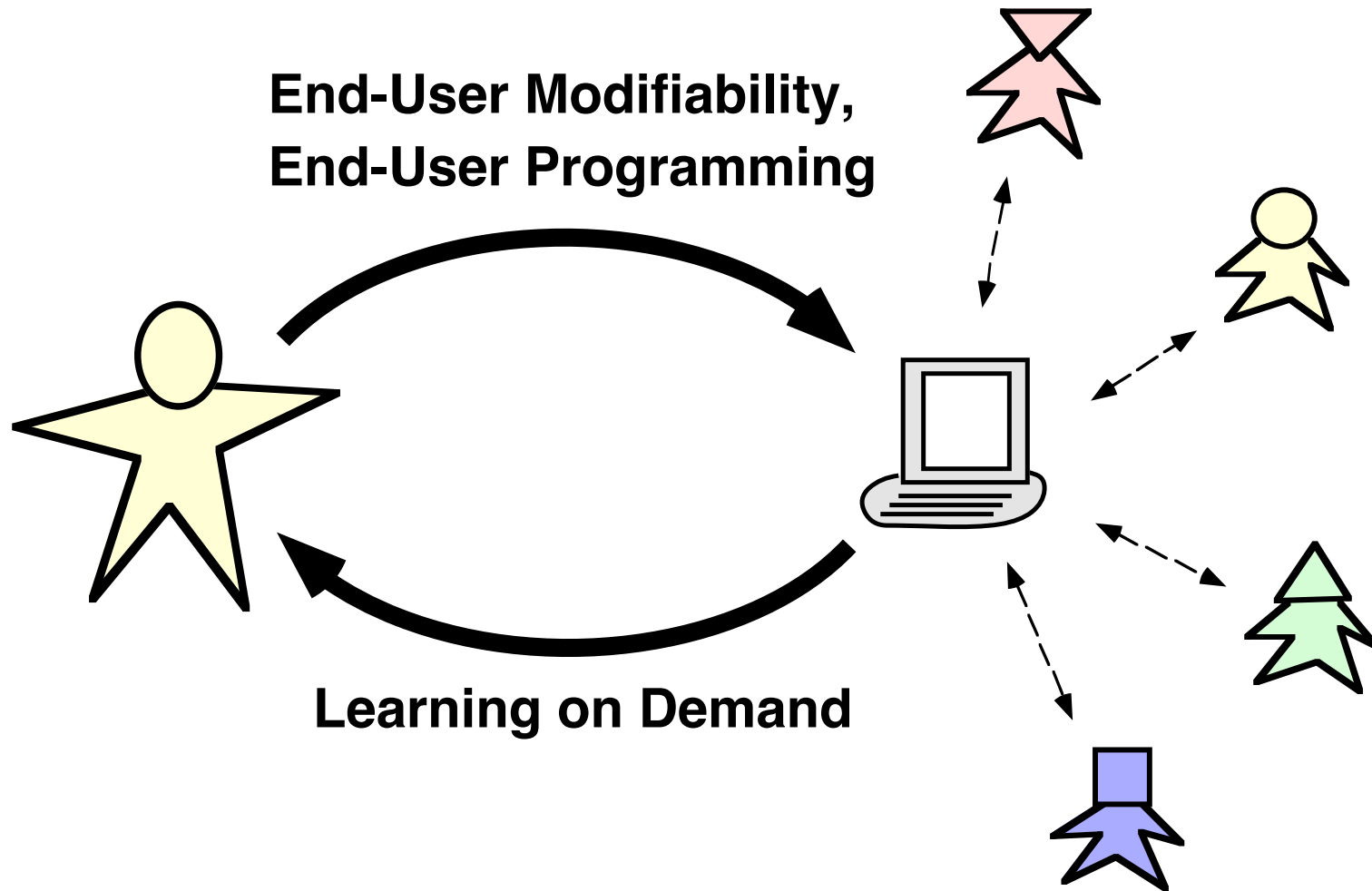
▪ Consumer Roles

- TV
- lecture (students in classrooms)
- citizens (who do not vote)
- patients (relying solely on a doctor's opinion in a medical setting)

▪ Designer Roles

- students who are “prepared” for a class meeting
- patients (informing themselves with medical information on websites)
- DODEs (e.g., the Kitchen Design Environment) → support for domain expert in design domains (e.g.: kitchen design)
- Envisionment and Discovery Collaboratory (EDC) → support for engaged citizens
- contributors to Swikis
- Agentsheets / Visual AgenTalk / Behavior Exchange

Duality between Learning and Contributing



Social Capital – Motivation and Rewards

- what will make humans want to **become designers/active contributors** over time? → claim: serious learning does not have to be unpleasant but can be personally meaningful, empowering, engaging and fun
- what will **make humans want to share**? → requires: culture change, community knowledge bases, distributed memories, gift cultures
- challenge which needs to be addressed: “***who is the beneficiary and who has to do the work?***” → design rationale, documentation for (software) reuse

Mismatch Problem in Teaching and Learning

Teacher	Student	Example
authority (“sage on the stage”) {expert, teacher-run}	dependent, passive {consumer}	lecture without questions, drill
motivator and facilitator	interested	lecture with questions, guided discussion
delegator	involved	group projects, seminar
coach/critic (“guide on the side”) {meta-designer}	self-directed, discovery-oriented {designer, student-run}	self-directed study group, apprenticeship, dissertation

▪ major mismatches :

- dependent, passive learners take courses with non-directive teachers, and
- self-directed, discovery-oriented active learners take courses with directive, authoritarian teachers.

Assessment

▪ role of professional designers

- division of labor
- claim: the “average” person does not want to build their own houses, design their own car, write their own software system / sorting routine
- all people do not have the time to participate equally fully in all aspects of the political system in order to become fully engaged and informed
→ intermediaries, facilitators

▪ users as designers

- one of the major roles for new media and new technologies is not to deliver information to individuals, but to provide the opportunity and resources for social debate and discussion
- a departure from HCI thinking → to look at users not simply as objects of study, but as active agents within the design process itself
- full participation from users → requires training and active cooperation, not just token representation in meetings or on committees

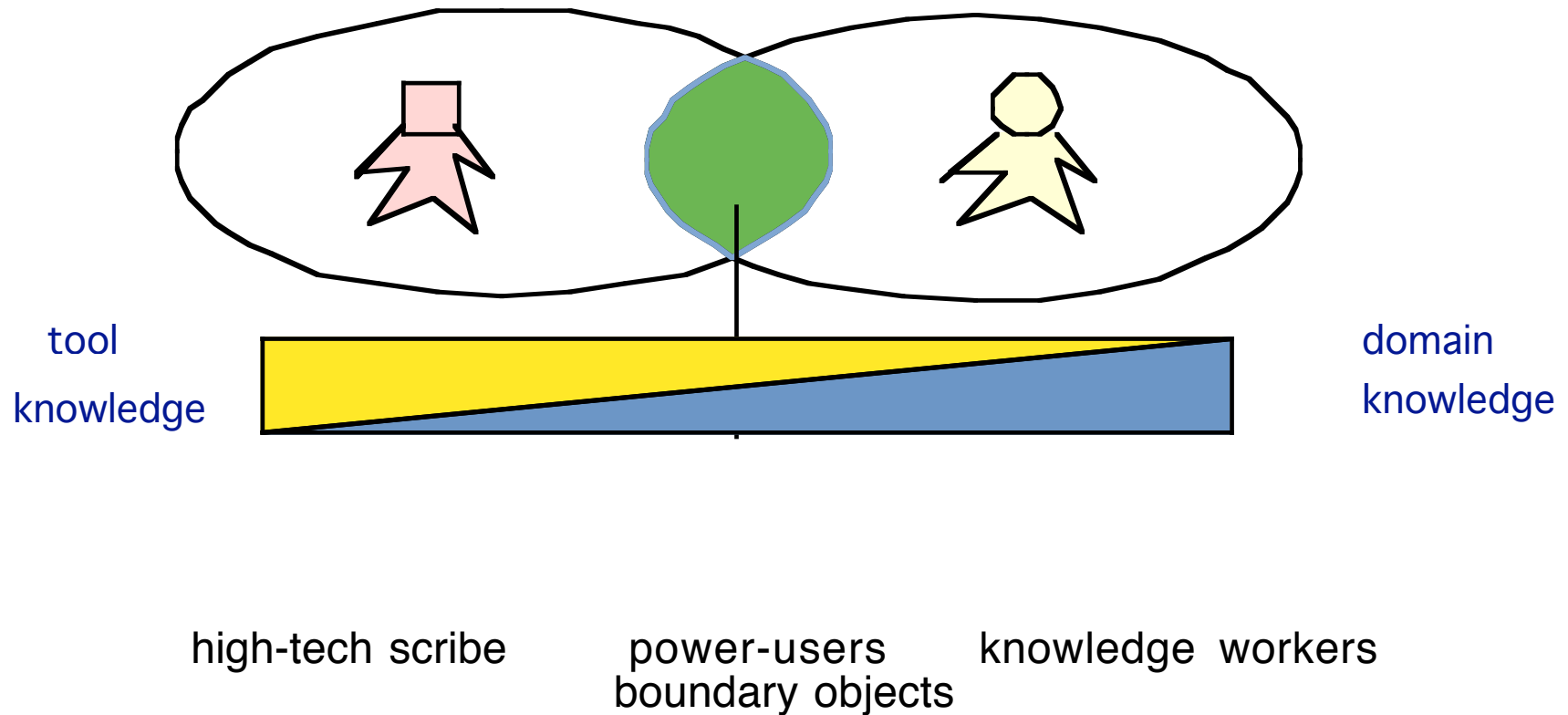
Trade-offs in a “Do-It-Yourself Society”

- **examples to think about:**
 - self-service gas stations
 - checking out your own groceries
 - online banking
 - making your own travel reservations

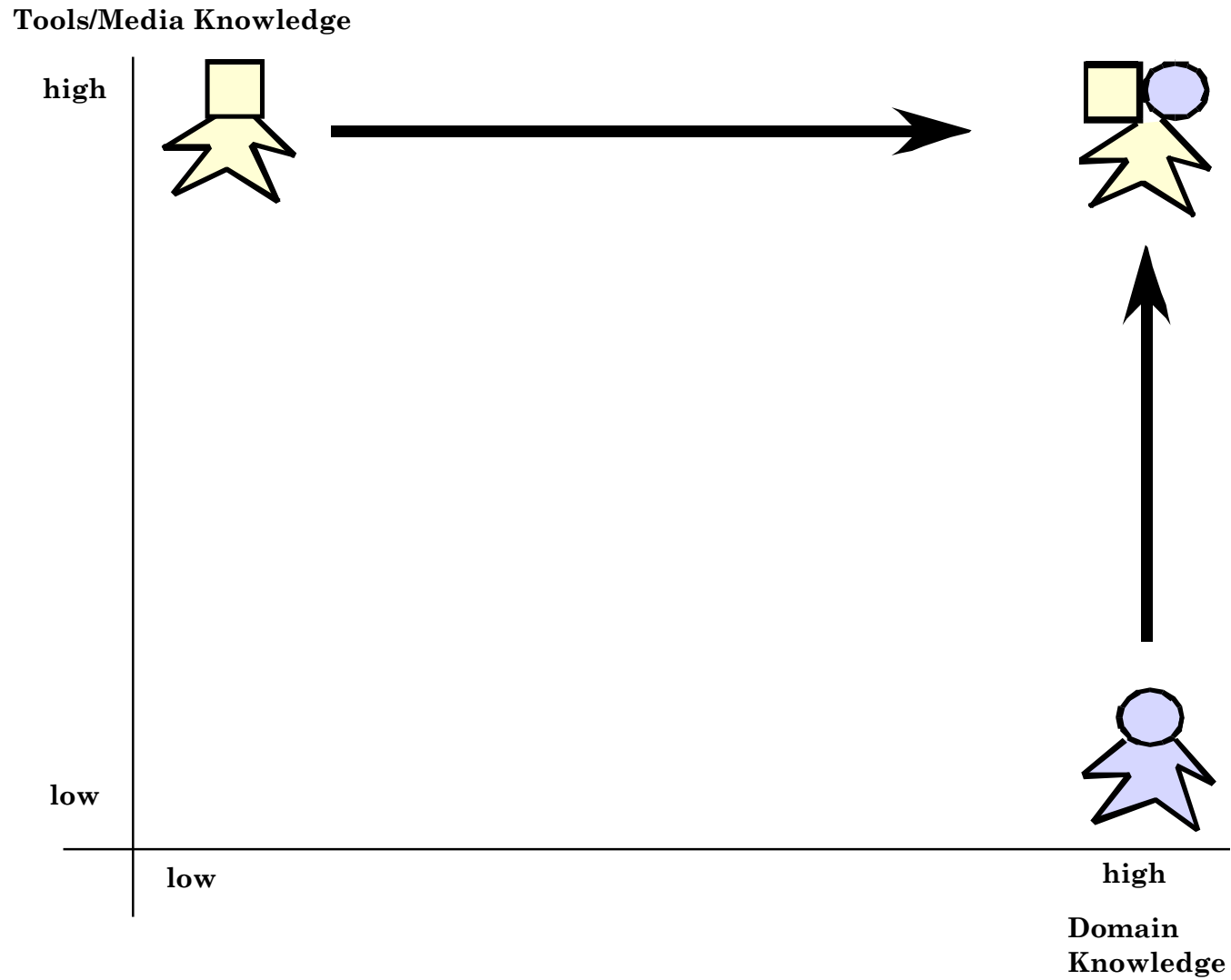
- **a researcher in our center:** *“You're not going to make a Hollywood feature with iMovie, but you can make some pretty cool home movies from the holidays.”*
 - success of CLever video presentation

- **core technologies ↔ occasional technologies**

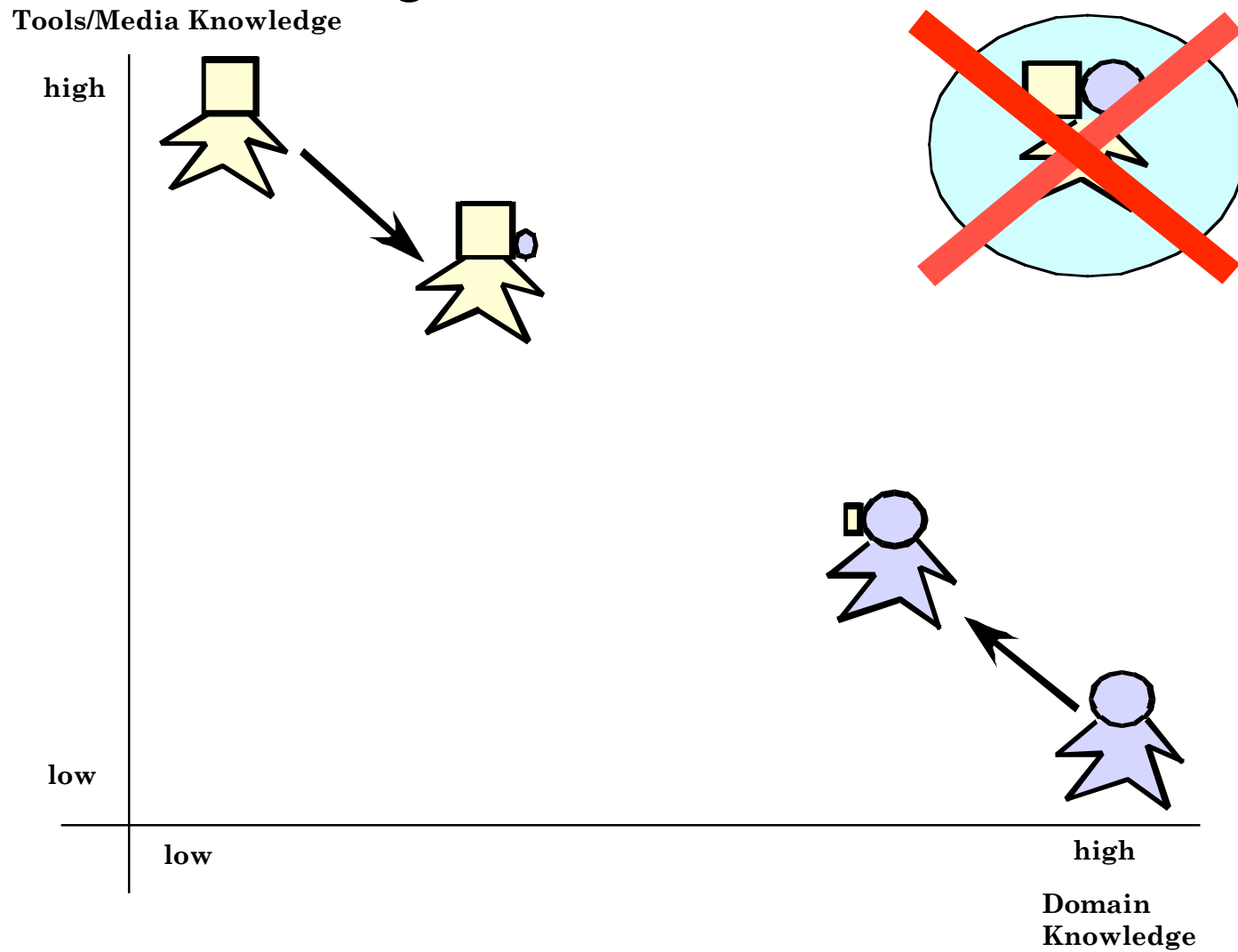
High-Tech Scribes, Power Users, and Knowledge Workers in Domains



Desired but **Unrealistic** – “Superhuman” (software and domain expert)



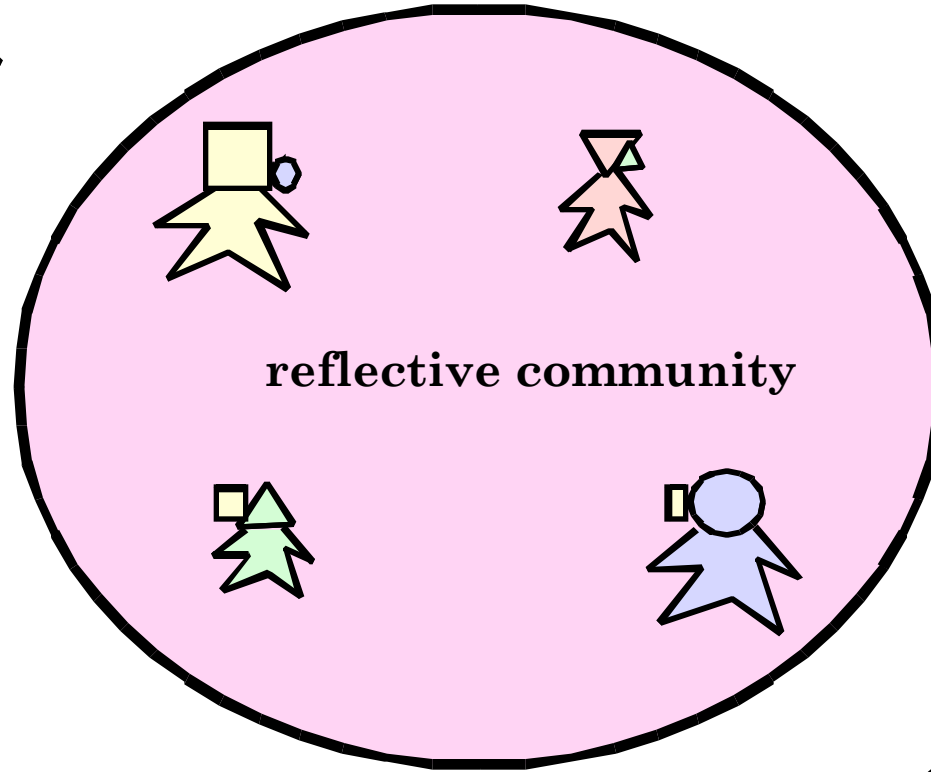
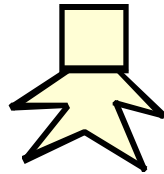
Realistic: Learning “something” about the Other Domain: Learning in Communities of Interest



Objective: Reflective Communities

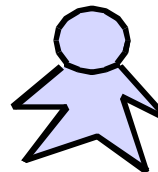
Tools/Media Knowledge

high



low

low



high

Domain Knowledge

Conclusions

- differentiate between consumers and designers by **questions asked / problems perceived**:
 - **Consumer**: Is a new future coming? (for example: in developing the new media of the future, the social scientists / humanists should not be content with spectators and Cassandra roles)
 - **Designer**: How can we invent and create a new future?
 - being a consumer or a designer is a **mindset**

- **Claims**:
 - the future is not out there to be “discovered”, but it has to be **invented and designed**
 - the question: **who** will design the future? (we should not be content with reflecting on and evaluating designs developed by other communities, e.g., Hollywood)