society without school = conversations + learning + networks

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Introduction and Scope

First, my heartfelt thanks to Instituto Vivo and to Papagallis Group for organizing this brilliant seminar on education and society. I appreciate very much being invited and my contribution is focused on three topics: conversations, learning, and networks. I will observe these topics from a common frame, to support the implementation of new forms of education that are rooted in local needs and values. These views are resonant with the philosophical positions of Jay Cross's "informal learning" [1] and Ivan Illich's "de-schooling of society" [2], each of which provide important context to my remarks here today.

The phrase "without school" in my title is used in the sense created by Illich, whose work is a repeating motif throughout this seminar. When Illich spoke of "de-schooling", he meant much more than removing the limitations of schools: his span of interest was no less than "social reality". As he writes in his highly influential and still prescient 1971 work, *Deschooling Society*:

> "Not only education but social reality itself has become schooled."
>
> "...the institutionalization of values leads inevitably to physical pollution, social polarization, and psychological impotence: three dimensions in a process of global degradation and modernized misery."
>
> "Everywhere not only education but society as a whole needs 'de-schooling.' " [*Op. Cit.* 2]

To bring about "de-schooling" is a formidable, arduous task. Individual and societal resistance to change is significant and can be easily underestimated. Because coordinated action can only come from agreements that are rooted in language, the ability to change is limited by the available language. Without a language capable of encompassing both old and new worlds, change is impossible. While a discussion of mechanisms for bringing about such change is beyond my scope here, a cybernetic view of social systems affords insight into making such transformations [3] [4].

Here I offer a "meta-design" for de-schooling. First, I propose that a keystone to learning is to **design the conversation**. To that end, I propose a model for understanding and improving conversations. Then I argue that "informal" conversations for learning which take place every day can be enhanced by software and internet technologies, and without becoming trapped in institutional norms. If used for the deep purpose of transforming individual lives in their local context of values and needs, such networked and "instrumented" conversations can be the basis for de-schooling society.

Conversations

First, I want to speak of conversation. But that is a contradiction: the point of conversation is to **have a conversation** and not merely to speak about it. I bring this forward because it parallels a major theme of this seminar: we want to remove certain contradictions that schools bring to learning. For example, we want to eliminate teaching as a form of speaking **at** someone who wants to learn.

However, before I ask you to accept the contradiction (at least for the duration of this presentation) and allow me to speak about conversation, I want to invoke the broadest context for conversation itself. The over-arching context of all conversation is **society**. We are social creatures. Together we engage in a manner of living that we have evolved over the course of our history. I use the word "society" in the sense of social cooperation, that is, a coordination of actions in the matrix of daily living. Coordination of actions takes place most productively in exchanges that involve language. Humberto Maturana would say that **languaging** is "the coordination of the coordination of actions" and, through languaging, we live together. [5]

But what comes from society? What can society do?

society

humans = social creatures who cooperate

social cooperation = society

society = capacity to respond to human problems
= capacity to respond to human desires
= capacity to increase choices for all

In the most general sense, society is the capacity to respond to human problems.

Society also has a capacity to respond to human desires. Perhaps the "desire of society" should be to increases choices for everyone.

Conversation plays a fundamental role in social interaction.

role of conversation

social cooperation = coordinated actions

coordinated actions require agreements

agreements require conversations

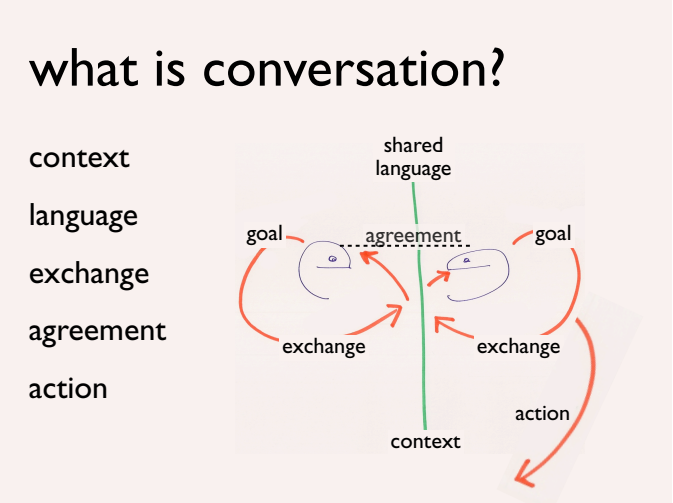
conversations require language

Before a coordinated action can occur, an agreement must be reached. Before an agreement is reached, a conversation must occur.

Together with conversation there must evolve an effective language, one that captures intentions and expresses the necessary variety of meanings and possibilities.

Conversations and the language that embodies them co-arise.

But, what is conversation? As we experience it every day, conversation is a complex, messy, uncertain, and frustrating process that we all need and all use. I'd like to present one way to deconstruct it—not as a perfect model of an imperfect experience, but as a model that gives scaffolding to my subsequent points about learning, schools, and networks.



This model of conversation comes from a branch of cybernetics called "conversation theory".

Cybernetics is the science of systems that have goals, whether they are mechanical, biological, or—as in the case of schools and learning—social. [6]

Here is a description of the five elements of conversation:

- **context** is a moment in time and place that holds sufficient harmony between the situation of one individual and a conversation proposed by another.
- **shared language** allows one participant to connect with another by offering an understandable intention—at first this is the intention of the initiator, but thereafter it may be shared, and the language must be able to carry the desired meanings, even as meaning and possibility evolve.
- **exchange** is the familiar back-and-forth of conversation which, at best, comprises a rich mixed initiative whereby any participant can suggest a new goal or focus, as well as respond to the changing goal or focus of the other—the result is a cooperative interaction that flows over time and that may feel as if it has its own source of forward motion.
- **agreement** involves recognition by the participants that there are common viewpoints—in other words, shared beliefs—and this recognition itself may be shared.
- **action** is cooperative behavior that follows an agreement—for example, to trade objects or actions for barter or money, or to build something together, or to converse again.

In practice these elements are not sequential or even linear, but overlapping, fractal, and sometimes contradictory. So, if the elements of conversation are contorted, what good is it to try to separate them from one another? Well, if we leave the conversational process as a monolithic and unknowable "black box", essentially accepting its current limitations, how can we make improvements? On the other hand if we can understand the separate elements of conversation and make one or more of them better, then we can pro-actively make the conversation better as a whole. In other words we can **design the conversation**. This may be for the purpose of better coordinating social actions, or for creating more effective conditions for learning.

Learning

But, what is learning? Is it different than conversing?

what is learning?

context finding a way to converse, in order to learn, now

language starting an exchange in a vocabulary that is shared

exchange interacting back-and-forth to evolve beliefs

agreement acknowledging what is understood & shared

action coordinating behavior to confirm understanding

The elements of conversation are the same as the elements of learning.

A conversation for learning may be a special case of conversation. It may involve an asymmetry of knowledge, authority, or social power.

But all learning requires conversation.

No one can disagree: the over-arching process for learning **is** conversation (even if it takes place in a non-verbal language, or is internal to a single person). If we want to improve learning, we may **design the conversation for learning**. In addition to making the conversation work better by design of its elements, we can improve learning by better understanding the roles of the participants.

In an authoritarian context, the "teacher" is held up as the source of knowledge. Put another way, the "student" is considered "lesser" or "empty"—a passive receiver of the knowledge of the teacher. The student's role is to acquire and reproduce the knowledge of the teacher. But the student must teach the teacher what is clear, what is not clear, what is of interest, etc. And the person in the role of having some useful knowledge (formerly "teacher") must also take the role of being a "student" of the student's understanding, qualities, learning preferences, values, needs, etc. It has always been so—good teachers are good students of students, continuously learning how to teach. In so doing, they pay attention to the five elements of conversation in some form, to some degree.

And vice-versa: good students constantly teach others how they learn. What is the students' context, their purpose? What do they know already, such that the language will make sense? What are their individual interests and preferences, such that the exchange is productive? The "person-of-knowledge" in a given exchange, who understands something about the domain, may sometimes usefully guide the direction of the conversation. But the understanding and curiosity and uncertainty of the "person-in-the-role-of-student" must predominate. The best conversations are not controlled by any single participant but "mixed-initiative". The same is true in explicit conversations for learning, even though there are always asymmetries of knowledge (strictly speaking, the knowledge of the "teacher") and priority (the needs of the "student").

Today, we go even further and acknowledge that all of the participants in a conversation have useful or valuable experience. In local communities of practice, anyone's experience may be important because the context is multi-faceted. No one sees or understands it all, and needs are not well understood by outsiders. This is quite important, both for emphasizing the shared responsibilities of everyone and for recognizing how socio-political relationships may encourage (or inhibit) learning in certain contexts, such as schools.

School

So, what is a school?

what is a school?

context fixed location, time, subject, teacher

language pre-established vocabulary in pre-defined curriculum

exchange "teacher" and "student" dialog

agreement qualitative assessment in class, quantitative in tests

action exercise, practice, performance

A school is an attempt by an organization to hold a repeatable conversation for learning.

Historically, schools arose for reasons that were valid at the time, whether economic, pragmatic, or conserving of social or political power.

Schools try explicitly to design a conversation for learning. But most schools are over-constrained by place, time, and individuals called teachers, as well as by curricula, tests, and grading—not to mention the deeper and more insidious pathologies that Illich articulates so forcefully. As an historical anomaly, schools delivered some efficiencies. In our modern world their problems begin to overwhelm their advantages. However, to some extent schools have worked and I want to characterize them in terms of the elements of conversation (as well as show where and how their limitations show up):

- **context** is a physical building or at least a physical place that is tied to fixed location, personnel, and time; a course is synchronously delivered to groups of students via a moment of conversation in a classroom, comprising students of the same grade (whether or not they are at similar levels of competence or need).
- **language** of school is grounded in a pre-defined curriculum and fixed before a course is delivered (despite what the local community's or individual student's needs may be).
- **exchange** may primarily be one-way lecture (which is certain to be ineffective for many in the class) though a key element is "teacher/student dialog" where a teacher answers questions of individual students and then attempts to generalize further presentations for all students, all levels of prior knowledge, and all learning preferences (which is impossible, and results in imperfect and unproductive learning).
- **agreement** is ascertained qualitatively during the class by the teacher in real-time (which is patchy and inconsistent); often it is also measured quantitatively and asynchronously via written test (which may test student's test-taking ability more than competence).
- **action** may be a student practicing understanding, in the form of exercises, performance, or teamwork (severely limited by constraints of time, resources, and range).

Online schools have removed some of these limitations. Location is no longer fixed to a physical place. Content is delivered anywhere there is internet connection or a computer with local content. The student rather than the institution determines time of delivery, and total time spent is not limited to fixed class length. Unfortunately online education is usually designed to imitate face-to-face education, thus perpetuating many of its flaws: inflexible curricula, stilted interaction, lack of sensitivity to learning preferences. Illich stands with us shoulder-to-shoulder as we push past the fashion of technology to our deeper, revolutionary purpose.

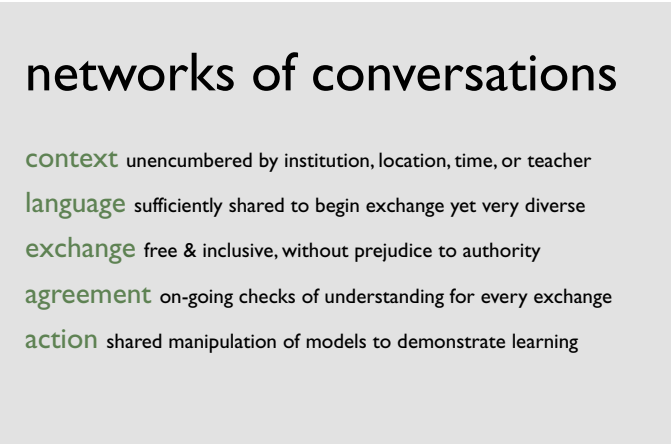
Networks of conversations

Illich foresaw the power of technology, long before it was cheap, fast, and relatively available. (Today's technology is a million times more powerful than when he wrote *Deschooling Society* in 1971.) Yet he essentially predicted internet, blogs, and social networks, all in service of learning:

> "A good educational system should have three purposes: it should provide all who want to learn with access to available resources at any time in their lives; empower all who want to share what they know to find those who want to learn it from them; and, finally, furnish all who want to present an issue to the public with the opportunity to make their challenge known." [*Op. Cit.* 2]

Illich also predicted the importance of games and gaming interactions by emphasizing the difference between **making** ["poesis"] and **doing** ["praxis"]. While **making** may involve practice and action, it is only **doing** that places the learner in the situation for which education is intended to prepare her. Illich's goal was to move education beyond where it has been—solely about making—and situate it much more in doing, while still increasing capacity for making. Today's "massively multi-player" (that is, networked) games are increasingly seen as massive opportunities for learning spaces that are focused on doing.

Illich's viewpoints on learning fit perfectly into the concept of "networks of conversations".



*Illich imagined a network of resources under the personal control of **each learner**.*

Illich called such a new relationship between people and the environment a "learning web" or an "opportunity web".

*Today we would call this **a learning network** that enables learning conversations. This is what we can create today, economically and effectively.*

Now, can we utilize the five elements of our model to improve networked learning, by design?

Specifically I want to paint a vision of the open-ended and community-based interactions we need in order for "informal learning" to reach it's full potential—to become conversations for networked learning.

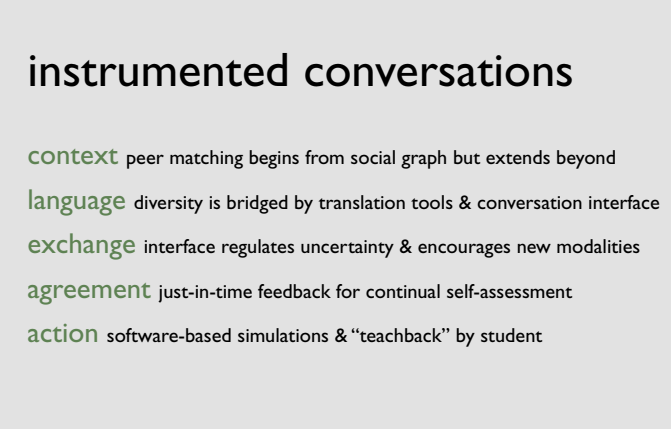
Vision of conversations for networked learning

- **context**
  - creates an unfettered virtual space—not tied to physical location or institution
  - enables interactions unfettered by time—asynchronous, episodic, organic, connected, local and non-local
  - ignites pliant possibilities that instantly bridge innumerable formal and informal networks—a dynamic creation of communities of peers that Illich conjures, where partners are well-matched so that effective and efficient learning occurs
  - significantly, the moment of engagement can be initiated by a student's curiosity or uncertainty—it does not depend on synchronization to a teacher, or to locality of place or time—and it need not be limited to pre-determined time slots or topics.
- **shared language**
  - requires a common, comprehensible starting point
  - harnesses the increased diversity of the many languages and different social/political contexts to create **new language** which bridges current limitations and desired futures, laying the foundation for fundamental change.
- **exchange**
  - may be real-time/synchronous—voice chat, text chat, shared whiteboards—or may be buffered/asynchronous—email and messaging systems of all modalities (text, images, audio, video)
  - may incorporate translation, intermediate formats, or interventional support from participants outside the usual roles of teacher and student
  - can be highly inclusive because, in technology-mediated conversation, identities are often blurred and interactions proceed without prejudice to age, gender, race, or any other characteristic that previously kept conversations separate or limited
  - can achieve huge productivity by software calculations of an individual learner's cognitive uncertainty, combined with heuristics to regulate presentation of content based on each individual student's preferences and capabilities [7]
  - encompasses the relationship among descriptive components involved in understanding a concept as well as prescriptive operations that involve how the components operate/relate to each other—in other words, making + doing.
- **agreement**
  - check of understanding can be on-going, even exchange-by-exchange, including just-in-time feedback via continual self-assessment.
- **action**
  - "teachback" can be provided whereby the learner "teaches" what was learned via simulations and models that are manipulated to demonstrate understanding.

Every one of these can be instrumented by technology, in service of better conversations for learning.

Instrumented conversations

How can we enable learning by instrumenting conversations via individualized software, grounded in the deep variety of available internet content?



When instrumented by technology each component of conversation can be vastly improved—not as a substitute for local, informal and community-based learning, but to extend learning beyond limitations of location, borders and parochial views.

Please note, this is more than a sketch: it is a meta-design. Social networks for peer-to-peer matching, conversation interfaces that incorporate regulation of learning, flexible interfaces to visualizations and simulations—each of these techniques is available on its own. Technology does not limit us; vision does. We must **want** to make the synthesis of all these functions, to knit them together into a seamless learning experience, instrumented via networks of individuals and networks of content.

Of course, most of all, software-plus-internet delivers vast amounts of content, indexed and therefore accessible—but of uncertain quality. Evaluating content quality is an immense, sobering problem that cannot be solved easily. Even the best automated rating systems are partial in coverage and inconsistent in calibration. But even if that problem is tamed, I feel that there can be no substitute for a conversational interface that allows each individual to explore the strengths and limits of a given piece of content. This places the ultimate responsibility with the individual, who best understands the need and who, after all, must ultimately develop strong critical thinking skills to thrive in our information society.

We **can** create the world that Illich saw, without school and without the shackles of institutional limitations.

We can **design to deschool society** by designing the conversations in which our society invests. It is merely a matter of what we desire.

Being responsible for what we do

Humberto Maturana's monograph "Metadesign" says that technology does not determine us and that we may fashion technology in accordance with our desires:

> "The **reality** that we live arises instant after instant through the **configuration of emotions** that we live, and which we **conserve** with our living instant after instant.
>
> "But if we know this, if we know that the reality that we live arises through our emotioning, and we know that we know, we shall be able to act according to our awareness of our **liking or not liking the reality** that we are bringing forth with our living.
>
> "That is, we shall become **responsible for what we do**." [8]

This awareness becomes a principle for meta-designing what we want.

For example, "mobile devices" can move far beyond the limitations of mobility or devices. Technology we always carry becomes fundamentally about **who we are**. [9] Always-on, always-connected technology becomes an extension of our nervous system and can be used in service of basic, even primal needs: safety, comfort, simplicity, connection, novelty.

So we can, if we desire, **design for conversation** and design explicitly to increase the number of choices we have individually and collectively, in pursuit of our needs and desires, ethically for all.

In the context of informal learning our question becomes, what do we want from learning without schools? We have long-term lessons from the history of schools. We have recent experience with training delivered by computer, with teaching programming to children, with giving every child their own laptop, and with putting college curricula freely online.

What we have learned is that these well-intentioned strategies commit the same errors as institutionalized schools. These do not yet remove the limitations of history and habit.

I believe that we need to ensure a new respect for the learner's context—needs, values, and focus—while also respecting the value of the person-of-knowledge for her useful understanding of a domain, for prior investment in understanding, and for direct experience of what works and what doesn't.

Our deliberate, desirable future

In 1971 Illich wrote,

> "...a desirable future depends on our deliberately choosing a life of action over a life of consumption, on our engendering a lifestyle which will enable us to be spontaneous, independent, yet related to each other..." [*Op. Cit.* 2]

How do we define our deliberate desirable future in 2010? Here is my version, my hope:

> How do we design our conversations so that we are all "learning to learn"?

By learning how to learn, we gain the power to self-explore and we are no longer limited by education that is delivered to us. Rather, we can guide ourselves to the learning we want. With this internalized, individualized power harnessing the tools of technology, we become truly "deschooled".

For me, this is the key direction for the future of learning.

My thanks to Claudia L'Amoreaux, Jocelyn Chapman, Jay Cross and CJ Maupin for important criticisms and to Papagallis Group in São Paolo for being instrumental in my participation in the Instituto Vivo Seminar.

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