Paragogy

Joseph Corneli¹ and Charles Jeffrey Danoff²

¹ Knowledge Media Institute, The Open University, Milton Keynes, UK, j.a.corneli@open.ac.uk, WWW home page: http://metameso.org/~joe
² Mr. Danoff’s Teaching Laboratory, Winnetka, IL, USA, danoff.charles@gmail.com, WWW home page: http://mr.danoff.org

Abstract. Peer learning has been recorded since antiquity, and it has become ubiquitous in the present, partially through the use of new communication tools. Paragogy is a theory of peer learning: we endeavor to say how it works, and how it works best. This paper outlines paragogy’s contemporary relevance and expounds its principles, showing their connections to other theories. We present several examples of paragogy in practice, including an extended example where we apply paragogy to critique our experiences working at the Peer 2 Peer University (P2PU). We close by describing some limitations of the theory and our vision for what lies ahead.

Keywords: paragogy, learning, peer learning, P2P

INTRODUCTION

We use the term paragogy to characterize the study and practice of peer learning. The growth and evolution of opportunities for learning outside of formal institutions in recent years has made a theory of peer learning of timely importance. A recent article from Fast Company, an influential business magazine, illustrates the point: “Just as more and more employees are expected to have basic multi-media skills—the ability to blog, for example, or to shoot images or videos on their smartphones—so will they be expected to have the basic ability to share knowledge with their peers.”³

But strategies for peer learning can be found throughout human history. For instance, in 1645, a now-famous group of peers in London decided to “refuse to believe things that weren’t demonstrably true.”⁴ They might have been inspired by a conversation that took place two thousand years earlier.

SOCRATES: Then, as we are agreed that a man should enquire about that which he does not know, shall you and I make an effort to enquire together into the nature of virtue?⁵

⁵ http://www.gutenberg.org/files/1643/1643-h/1643-h.htm
Drawing inspiration from the Invisible College and Socrates, we offer our “paragological principles” for your examination and critique. In the second half of the paper, we use these principles to evaluate our experiences over the past year as course facilitators at Peer 2 Peer University (P2PU).

THE CHALLENGE

A. T. Ariyaratne’s essay on Rural Self Help [2], one of the foundational writings of the Sarvodaya Shramadana movement in Sri Lanka [6], begins:

Nobody needs to teach rural communities about “group effort” and “self-help”. […] The real question, therefore, is to examine what are the constraints that exist inhibiting the expression of their group effort and self-help qualities designed to improve food and nutrition levels, clothing, shelter, health, sanitation, education and cultural life?

It is in a similar spirit that we approach peer learning. Everyone is capable of developing effective learning strategies and techniques, but they do this subject to certain constraints, in particular, the constraint of not yet knowing. Thus, peer learning is different from other forms of collaboration, the proverbial “barnraising” for example, in which the persons involved can be presumed to know how to build barns.

WHAT PARAGOGY HAS TO OFFER

We have five principles, with which we endeavor to both describe the phenomenon of peer learning, and to prescribe the key aspects of its best practice.

1. Changing context as a decentered center.
2. Meta-learning as a font of knowledge.
3. Peers provide feedback that wouldn’t be there otherwise.
4. Learning is distributed and nonlinear.
5. Realize the dream if you can, then wake up!

1. Changing context as a decentered center. In paragogy, we recognize that we are not merely teachers or learners, but are actually co-creating the learning context as a whole. Context is always flexible and paragogy asks learners to cultivate a “shared context in motion” [1] with their peer group to best support their learning. It is this central place given to the learning context that makes paragogy different from other theories of learning.

6 http://www.sarvodaya.org/about/philosophy/collected-works-vol-1
2. **Meta-learning as a font of knowledge.** Thomas Friedman has suggested that “learning to learn” will be a requirement for success in our “flat” 21st century world. Putting this into practice requires people to work smart: “‘Working more hours’ does not necessarily mean ‘producing more output’.” Evaluating both process and outcomes is key.

3. **Peers provide feedback that wouldn’t be there otherwise.** Learners must not seek only confirmation of what they already know, they must confront and make sense of difference as part of the learning experience. In peer a learning context, the peers co-create “learning opportunities” by bringing their unique experiences to bear.

4. **Learning is distributed and nonlinear.** Learning does not go in a straight line. Involvement in shaping the learning context is one of the costs associated with peer learning. The pay-off is better support for learning than is found in less self-aware models where learning is simply “taken as given”.

5. **Realize the dream if you can, then wake up!** Paragogy is the art of fulfilling motivations when this is possible, and then going on to the next thing. To use an example from literature: “His record up until then indicated that he remained obsessed with something until he became successful at it, then transferred his obsession to something else. From military optics to annular optics to entrepreneurial optics to tennis-pedagogy to film.” (p. 949) Chances are, it will not be so easy; in which case, keep in mind these words from Samuel Beckett: “Ever tried. Ever failed. No matter. Try Again. Fail again. Fail better.”

**LITERATURE REVIEW**

Closely related theories

The paragogical principles were first conceived by turning Knowles’s principles of andragogy [15] on their edge. In succinct form, these principles are:

1. That adult learners are self-directed.
2. That they bring a wealth of experience to the educational setting.
3. That they enter educational settings ready to learn.
4. That they are problem-centered in their learning.
5. That they are best motivated by internal factors.

Blondy [7] points out both uses and challenges to each of the Knowles principles. For example, “Cheren stated that while learners may express a desire to be self-directed in their learning, most lack the required understanding of learning necessary to be self-directed and thus need guidance and encouragement in the...”


[8] See comments by Dr. Marjorie King in a discussion about paragological evaluation on P2PU http://p2pu.org/general/node/15138/forums/25213#comment-10331%29
learning process.” While our principles can be read as a critique of andragogy, it is largely a matter of point of view: thus, unlike andragogy (which takes the view of the adult educator) or pedagogy (which again studies teachers teaching learners), and unlike heutagogy \([11]\) (which focuses on self-directed learners), paragogy looks at the learning environment as a whole.

Accordingly, in addition to theories about learning, paragogy connects to other theories of an “ecological” nature. In particular, we draw from Nishida’s notion of basho (“shared context in motion”), a concept that helps us look at how a context constrains or supports different types of (inter-)actions, and about how we can (re-)shape the contexts we find ourselves in \([1]\). We will survey related themes from ecology and learning in the subsections that follow.

**The view from human ecology**

Bateson’s criteria of mind \([4]\) has several clear parallels with paragogy. Guattari’s notion of transversality is as useful sequel to Bateson’s ideas (“Transversality is generally facilitated by opening and maximizing communication between the different levels of organization in an institution.”) \([10]\).

In peer learning, one of the key concerns is how peers organize together to be more efficient than independent minds acting alone. The impetus to produce firms and post-firm commons have been discussed by Coase \([8]\) and later, Benkler \([6]\). Some of the relevant factors are discussed in the theory of Strategic Niche Management \([9]\, [14]\). For our purposes, the niches could be populated by institutions, individual learners, or informal organizations like courses or study groups. Three factors are said to influence niches: (1) innovations build up internal momentum; (2) changes take place at the landscape level; (3) destabilizations of regimes provide opportunities for niches. Within niches, momentum is thought to accumulate by: (1) coupling expectations; (2) articulation/learning; and (3) by network formation.

Thus a successful course might agree on a social contract, co-create the syllabus, then move on to discussions and active practice in the field of study, amplifying learning opportunities by talking with one another or by inviting guest lecturers. Instability or change at a higher level can create new opportunities for learning or meaningful participation (e.g. in shaping a course, institution, or field of endeavor).

**The view from the learning sciences**

The reader is referred to Bandura for details on the socially mediated nature of learning \([3]\). Here we touch briefly on three fundamental aspects of learning: challenge, conceptual accomodation, and what might best be termed empowerment.

On the importance of challenge, a key point of reference is Karpikke and Roediger’s _The Critical Importance of Retrieval for Learning_ \([13]\); the thought expressed is that testing is a better way to learn than just studying, or (per
the more recent paper by Karpicke and Blunt [12], more effective than just elaborative work with concepts.

Nevertheless, it would be impossible to argue that “conceptual structures” are unimportant for learning. Indeed, as de Liddo et al. indicate, developing facilities that people can use make the conceptual aspects of their learning activities explicit is vitally important for learning, and can, furthermore, make learning outcomes measurable [18].

“[A] strong affective filter (e.g. high anxiety)” can inhibit learning [17], but some learners are willing to take vital risks. To go a bit further, in the words of Alfie Kohn, “It doesn’t matter how motivated students are; what matters is how students are motivated” [16].

IMPLEMENTING PARAGOGY

We will explore three concrete examples of paragogy implemented.

The first example comes from the US Army’s After Action Review (AAR) [20]. The AAR is a systemized chance for everyone to review what just happened in a training exercise, to learn from it going forward. While one person may play the role of an evaluator in such a review (and despite the fact that soldiers are differently ranked), the review itself is still amongst peers, and critiques the operations of the unit as a whole. The four steps in an AAR are:

1. Review what was supposed to happen (training plans).
2. Establish what happened.
3. Determine what was right or wrong with what happened.
4. Determine how the task should be done differently the next time.

Any peer group learning anything would be wise to implement a similar formal review as part of their own learning practices. (We follow our own advice in this regard in the next section.).

Another example of paragogy in action comes from Charles Darwin and the “Gentlemen Naturalists” [21]. Later in his career Darwin stated, “I formerly spoke to very many naturalists on the subject of evolution, and never once met with any sympathetic agreement.” Negative feedback can be much more useful than none at all, particularly as part of a long-term learning/discovery process.

Finally, one of the most successful implementations of paragogy in contemporary America is Alcoholics Anonymous, a well-known peer support group, whose peers come together to “stay sober and help other alcoholics achieve sobriety”. In the words of co-founder Bill Wilson: “We cannot be compelled to do anything. In that sense our society is a benign anarchy.” (24, page 224) A couple of points from this “benign anarchy” model could be applied in other peer learning scenarios.

---

There is a strong sense of group membership and equality within the group (e.g. AA sponsors are fellow alcoholics).

The emphasis on noncompulsory individual (and, for AA, spiritual) experience gives a clear sense of the distinction between pedagogy and paragogy.

A CASE STUDY IN PARAGOGICAL EVALUATION

The paragogy principles provide guidelines on best practices for building successful peer learning experiences. In this section we will apply these principles to evaluate the lessons learned from our work at P2PU as facilitators in 2010–2011. For each of the principles we run through an After Action Review to look at how well the principle was implemented.

CHANGING CONTEXT AS A DECENTERED CENTER
:: Mapping system dynamics and semantics

1. **Review what was supposed to happen.**
   We both organized multiple courses: Collaborative Lesson Planning Fall 2010 and Winter 2011 (co-organized with Dr. Majorie King); DIY Math; Math for Game Designers; Open Governance and Learning (co-organized with Marisa Ponti); and Shaping P2PU. Participants were supposed to interact and learn about the subject matter.10

2. **Establish what happened.**
   Due to critically low participation, the mathematics courses did not run to completion. Participation in the other courses was minimal, but sufficient for them to run the entire 6 week session. The theory of paragogy was born in an effort to understand what had happened.

3. **Determine what was right or wrong with what happened.**
   In the more active courses, there were nice examples of learning by course participants.11 This was common across P2PU, as exemplified in Dan Diebolt’s graphical analysis of course participation, which showed that participation was generally uneven and falling.12

4. **Determine how the task should be done differently the next time.**
   Our best experiences as course organizers happened when we were committed to working through the material ourselves. Combining this with gentle prompting peers to follow through on their commitments could go a long way towards keeping engagement at a reasonable level. The first step is to make it easier for participants to say explicitly what their commitments are. Looking at this another way, the P2PU ecology contains an implicit rubric for learning and engagement: from member signs-up for a course to its completion, peers go through a cycle.13 As we understand this cycle better, it

10 See e.g. [http://p2pu.org/general/collaborative-lesson-planning](http://p2pu.org/general/collaborative-lesson-planning)
should be possible to evaluate it for quality. For example, P2PU could help participants by implementing more formal check points throughout the cycle.

**METALEARNING IS A FONT OF KNOWLEDGE**

:: Transparency, accountability, and tone

1. **Review what was supposed to happen.**
   Support for community members was offered as a P2PU course, in mailing lists, via weekly phone calls, in a Q&A issue tracker, and via a few other channels. Participants in courses were hoped to learn how to contribute in a useful fashion if they did not know already.

2. **Establish what happened.**
   Core members do hold themselves accountable, but this behavior is not necessarily transferred or communicated to new members, for whom accountability is low.

3. **Determine what was right or wrong with what happened.**
   People “at the top” are doing a lot of work, keeping the project moving forward. To date, however, community members have no “formal” accountability to one another.

4. **Determine how the task should be done differently the next time.**
   It is typical for online communities to have strictly enforced community norms. A nice goal for P2PU would be to create and distribute some well-defined OER that discusses these, along with other “best practices” information for organizers and participants. The current Course Design Handbook is one starting point, but it falls short of being a complete guide to P2PU.

**PEERS PROVIDE FEEDBACK THAT WOULDN'T BE THERE OTHERWISE**

:: Dealing with problems in a respectful way

1. **Review what was supposed to happen.**
   Discussions about P2PU happen in the community mailing list and other places mentioned above. Bug reports are supposed to go into the Lighthouse tracker.

2. **Establish what happened.**
   Discussions about P2PU happen in many places (e.g. in courses). Even within the mailing list, it is difficult to keep track of the full range of ideas circulating at any given time. There has been some talk about using the Lighthouse tracker for organizational matters, but this hasn’t taken off. Earlier experiments (e.g. using a shared spreadsheet) to keep track of organization-level tasks were undersubscribed.

3. **Determine what was right or wrong with what happened.**
   Apart from development work, it is hard to tell what’s happening around P2PU. Presumably participants who have identified critical and unsolvable problems simply leave.

---


4. Determine how the task should be done differently the next time.
   In a traditional university, there are typically a lot of ways to resolve problems without dropping out. P2PU is working on a new peer support model, which will should help with this issue. This will also function as a lightweight way to build organizational knowledge. However, issues related to the involvement of volunteers in organizational matters needs further attention.

**LEARNING IS DISTRIBUTED AND NONLINEAR**

:: Design considerations

1. Review what was supposed to happen.
   People are supposed to choose and assemble suitable learning resources (blogs, OER, etc.) for their courses, in which everyone is supposed to learn something.

2. Establish what happened.
   This is essentially what happened, but it is hard to measure when and whether knowledge was gained.

3. Determine what was right or wrong with what happened.
   The organization is striving to handle the complexity of life online. The system is explicitly in an experimental “beta” stage, and people who participate in betas are guinea pigs (and should know this). Quality control has a somewhat precarious meaning in a beta or “eternal beta”, but this makes life interesting.

4. Determine how the task should be done differently the next time.
   In terms of measuring learning, P2PU would have to work hard to use anything but “participation” as a proxy value. In terms of broader issues of quality control, one thought is for P2PU core members to “eat their own dogfood” and use the platform to organize their activities. Indeed, everyone involved with the project could, in theory, use the platform to help measure their “stretch/churn” as they document what they’re learning.

**REALIZE THE DREAM IF YOU CAN, THEN WAKE UP**

:: High level roadmap

1. Review what was supposed to happen.
   At one time, the high-level vision was arguably a Declaration of Independence from Formal Education. But perhaps each participant has their own vision.

2. Establish what happened.
   At the time of this writing, the P2PU organization is just convening its first board meeting; perhaps that is where the high-level vision and roadmap will be set. For the moment, it’s not clear whether the vision has shifted, digressed, or stayed right on target.

---

18 [http://www.youtube.com/watch?v=t8wxUbU1w_0#t=12m11s](http://www.youtube.com/watch?v=t8wxUbU1w_0#t=12m11s)
3. **Determine what was right or wrong with what happened.**
   There hasn’t been clear communication about progress.

4. **Determine how the task should be done differently the next time.**
   P2PU should build an explicit public roadmap that leads from now up to the point where the vision is achieved. They should do regular or ongoing open/public assessments of quality, and refine or adjust the vision as needed.

**LIMITATIONS**

As important and ubiquitous as peer learning is, other styles and theories of learning clearly have their place. For example, while new parents learn a lot, young children inarguably learn more; for young kids, socializing is important, but it is clearly no substitute for parenting.

Older students may not always be ready to be strong peer learners either: consider the design of an introductory college course in philosophy. The standard view is that “honors student” might prefer a student-led seminar, and that others would find this unproductive and would get more out of a traditional lecture/homework model. We see no particular reason to challenge this thinking.

Paragogy stands ready to grow and improve as it is tested in practice and developed further in empirical studies, but it also needs to be ready to get out of the way. For example, edge cases for paragogy include highly independent learners and creative people, whose peers are spread out distantly in space and time.

**VISION**

Reflecting on education-relevant potential of new media in a traditionally hierarchical and centralized model, Martin Weller writes: “It is thus no easy task to adopt a decentralised model, since it will require massive procedural, economic and professional change in higher education” [23]. We would argue that what’s new here is not simply a disruptive force in the traditional educational landscape: there is also a compelling chance to understand learning better. We hope that ongoing developments in paragogy can contribute to this process in a practical way.

**References**