

# Notes on Xanadu Lineages and Related Matters

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## CONTENTS

Preliminaries .....	2
A Little History in English: Xanadu .....	3
A Simple Phylogeny .....	4
Olivia Netwon-John's Film and Song .....	7
Identities and Networks .....	9
Waves in The Web of Culture .....	12
Other Memes in "Kubla Khan" .....	15
So What? .....	16
Appendix 1: Memes, Emics and Etics .....	16
Appendix 2: The Human Web .....	18

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## **PRELIMINARIES**

This set of notes is consequent on a discussion of the |xanadu| meme that I initiated online at The Valve:

<http://tinyurl.com/cwzaj>

Note that I am using the vertical-bar convention (|...x...|) as a more or less neutral designation of a theoretical object in its various manifestations: Zamdu (Purchas), Zanadu (Coleridge and after), Shangdu (Chinese: 上都; Hanyu Pinyin: Shàngdū). It is not clear, however, that Zamdu and Shangdu are, in fact, manifestations of the |xanadu| meme. That is a question I will take up later.

Further note that my use of the term “meme” should not be taken as a tacit endorsement of the Dawkins-Dennett account of cultural process as involving virus-like entities called memes. I have in the past explicitly argued against such usage and I haven’t changed my mind.

Dawkins coined the term and it’s a good one to designate general cultural “stuff,” whether in verbal, musical, 2D and 3D visual, or any other form. Just what the |xanadu| meme is, then, is somewhat up in the air. As Tim Perper pointed out in the discussion at The Valve, it probably is a phonetic sequence. The physical sound is important. I note that the word Coleridge read in Purchas has two syllables, while the word in “Kubla Khan” has three. That change is important for the poem’s meter, and has stuck with the |xanadu| meme ever since. I further note that the Chinese Shàngdū is two syllables as well. I am no judge of the sound of the Chinese word and how it compares with Purchas’s Zamdu, but I note that Chinese is a tone language, while English is not. The Chinese sound could thus not “survive” in English.

But |xanadu| is more than a sound. Just what that is seems to vary from one context to another. Whether or not there is a core meaning there is open for analytic consideration. Sound symbolism is a real phenomenon, though not well understood. Is the core meaning of |xanadu| coupled with its sound? I do not know. I suspect so, but that’s all. Even if so, that does not mean that I believe this core meaning is some how mystically encapsulated in the sound itself, to be released into the hearer’s brain upon reception. To the extent that the sound itself is meaningful, that must be explained naturalistically in terms of the nervous system. Any further “resonance” is to be explained by reference to the specific settings in which the meme has been placed (e.g. a poem, a movie). Such settings are created through deliberate intention and effort, though much that is done may be unconscious or intuitive rather than being explicitly formulated. Those settings are apprehended through similar intention and deliberation.

### *Xanadu Lineage*

The object of these notes is simply to display a bit of the evidence so far and, particularly, to consider how |xanadu| has been passed from place to place and person to person over time.

#### **A LITTLE HISTORY IN ENGLISH: XANADU**

Let us consider a little historical evidence. The OED lists the following examples for Xanadu:

1625 Purchas his Pilgrimes III. I. iv. 80 Xandu, which the great Chan Cublay..built; erecting..a maruellous..palace of marble.

1816 S. T. COLERIDGE Kubla Khan 55 In Xanadu did Kubla Khan A stately pleasure-dome decree.]

1948 'J. TEY' Franchise Affair i. 7 To that douce country lawyer..Scotland Yard was as exotic as Xanadu, Hollywood, or parachuting.

1958 M. KENNEDY Outlaws on Parnassus xi. 165 Desirable readers..do not expect Xanadu to put them in mind of Yarmouth.

1962 Holiday Aug. 70/1 It was only about half an hour's drive to the Xanadu of le facteur Cheval.

1969 Guardian 12 Nov. 5/7 Bob's double-tiered hideaway..overlooking the fairy-lit battlements of his Xanadu in Mayfair.

1972 K. BONFIGLIOLI Don't point that Thing at Me viii. 76 The Ambassador was at some Xanadu-like golf-links far away.

1977 Time 25 July 2/1 We have lived in Southern California for twelve years and watched nearly everything encapsulate itself within a plastic bubble; not only giant 'pop Xanadus' like Sea World and Universal Studios, but also miniature golf courses, shopping centers and finally the American home.

Notice the dates. We've got Purchas, 1625, Coleridge, 1816, and six examples distributed over 1948-1977. We need to know how |xanadu| got to Purchas. That, I believe, is known to some extent: he read about it in a book, and the book may well have been identified, I've not checked up on that. In which case where'd that other writer learn about it? Somewhere along the line we'll end up back in 13th century Mongolia-China. It would also be nice to know what went on with |xanadu| between Purchas and Coleridge. Not much, presumably, or not anything interesting *that we know about*, else there would be some trace of it in the OED.

And then there is the interval between Coleridge and the 1948 citation. I know a little about that, and more can be discovered. In 1927 there is, of course, the publication of Livingston Lowes's book, *The Road to Xanadu*.

I've searched the *New York Times* archives on "xanadu" between 1851 and 1980 and gotten 443 hits. Only 3 of them were in 1900 or earlier. I checked only the first one, an article on child labor from 1870 and was unable to find |xanadu| in the article itself. I checked a few later articles, including a review of Lowes and one of a Coleridge biography. There were a number of articles about yachting and ocean racing in the 1930s and into the 1940s (and even after, if I recall). I checked two of them. One mentions a yacht named "X Anadu" and another mentions one named "Xanadu." While the first might be a typo, I wouldn't assume so; yachts are often oddly named.

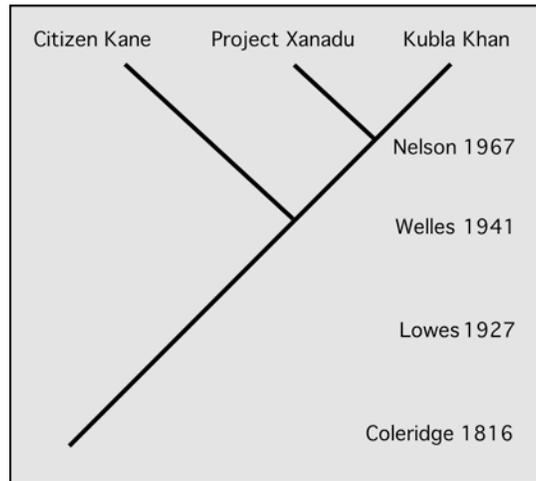
Now for those OED entries starting in the late 1940s. I'm going on the assumption that they follow more or less from Orson Welles' *Citizen Kane* (CK), where Xanadu is the name of Kane's unfinished mansion. The first five lines of the poem were put on the screen early in the movie and they were read in the voice-over; this was part of a newsreel on Kane's life. The NYTimes review for CK was 77th in the list of 443 hits over the period between 1851 and 1980. Thus over 80% of occurrences of |xanadu| are *after* CK.

Without going into further discussion of evidence, some of which can be found in the online discussion, I think it reasonable to assert that a significant portion of the recent occurrences of |xanadu| can be attributed directly or indirectly to CK. That is the usage that seems to have been compressed into a dictionary definition: "used to convey an impression of a place as almost unattainably luxurious or beautiful: three architects and a planner combine to create a Xanadu." As I have indicated in the online article and discussion, there is another cluster of uses that can be attributed to Ted Nelson's Project Xanadu (PX) and yet another deriving from Olivia Newton-John's (ONJ) eponymous movie and song. Rather than comment on these three, I want to turn to some diagramming.

### **A SIMPLE PHYLOGENY**

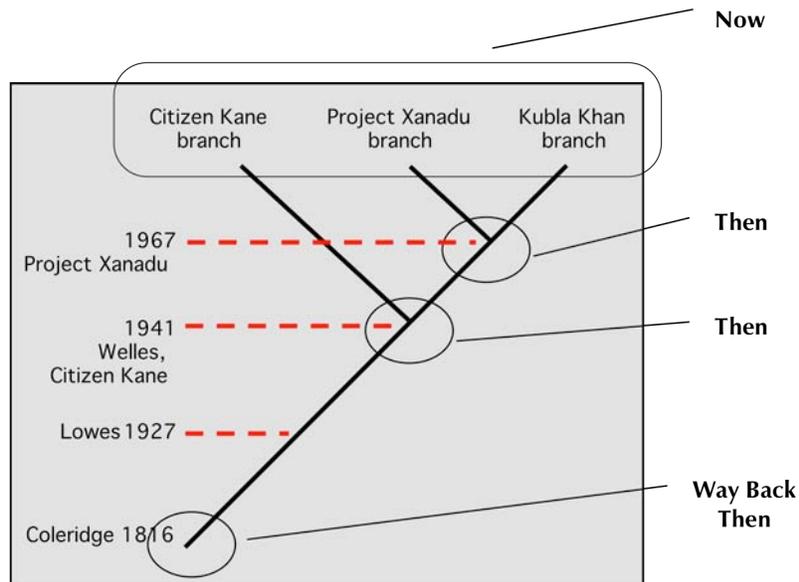
In thinking about how one might represent this diagrammatically (comparable to the trees Moretti used in the third chapter of his book), I initially assumed a view that can be diagrammed as follows:

*Xanadu Lineage*



This diagram takes no notice of Purchas, much less of old Kublai Khan himself. Initially, at least, that was merely a matter of diagrammatic convenience; nothing significant had apparently happened to the |xanadu| that far in the past, so there was no point in depicting it on the diagram. Similarly, there is no particular reason to have included Livingston Lowes, as his book does not seem to designate a branch point, only an early 20th “amplification” of the main lineage. Finally, there is no explicit indication of ONJ’s movie and song.

I sent the above diagram to Tim Perper and he offered various clarifications as follows:



Time moves from the bottom to the top. What does it mean to put those two branches off the Coleridge-KK lineage?

### *Xanadu Lineage*

The poem was explicitly referenced in CK. Anyone who has seen the movie will have caught the reference, though they may not have recognized that it *was* a reference. They may not have ever read the poem and they may not have done so subsequent to viewing the film. They may even have picked up |xanadu| from a review of the film, or discussions with friends, but not from the movie itself, much less the poem. The movie was quite controversial. Thus one have seen the meme while reading about the controversy (assuming, of course, that the term was mentioned in reporting on the controversy, which I haven't checked). Thus the movie created opportunities for encountering |xanadu| that are no longer coupled directly to the poem, but rather are coupled to the movie. It created a new and independent cultural lineage.

Beyond this, there is the particular "valence" which the movie "bestowed" on |xanadu|. It is not at all clear to me in what sense *that* valence is there in the poem. Considered as a gloss on the poem, CK seems to me to be a very partial "reading." Rather than enter into a potentially endless discussion attempting to explicate that remark, I'll let it stand. When Welles and his team named Kane's mansion "Xanadu" and quoted the poem, they did so, presumably, with some sense of appropriateness derived from their reading of the poem and a sense of their film. They thus endowed |xanadu| with a certain resonance in this new lineage.

Similar considerations apply with respect to Ted Nelson's PX. Nelson had read "Kubla Khan" and had it in mind when he named his hypertext project in 1967. I don't know whether or not he explicitly cited Coleridge in his publications on the project, but that can be checked easily enough. The poem is mentioned in the central websites devoted to PX, with a link to an online text. Nelson's project is another opportunity to become aware of |xanadu| without having read Coleridge's poem.

And the valence of |xanadu| is different in the PX lineage than it is in the CK lineage. Project Xanadu is more cerebral than the movie. It is about connections between ideas, not grandiose architectural projections and out-sized ambition leading to abject failure. Just what that valence is, is hard to characterize. But it's different from that of CK and the poem itself.

That gives us two considerations for branching:

1. independent awareness of the meme
2. different connotative valence

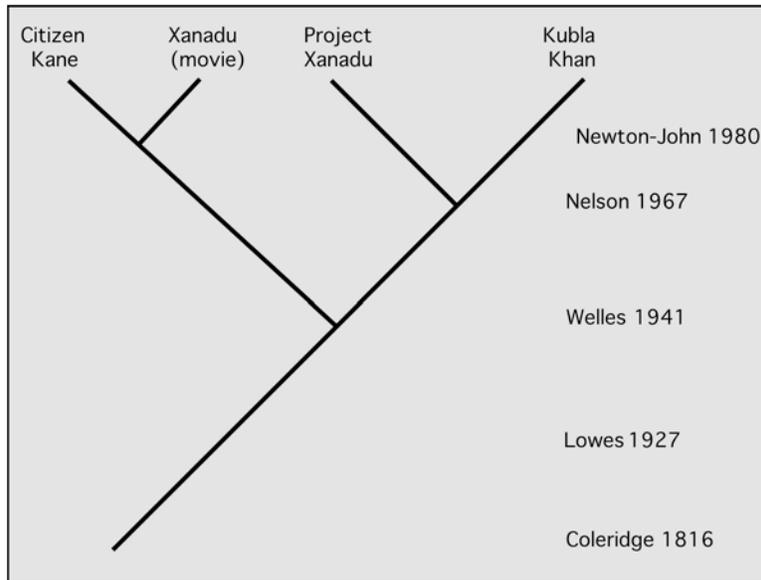
I note that the second should be amenable to empirical investigation through techniques such as the semantic differential.

Now let us consider the place of ONJ's "Xanadu" in this phylogeny.

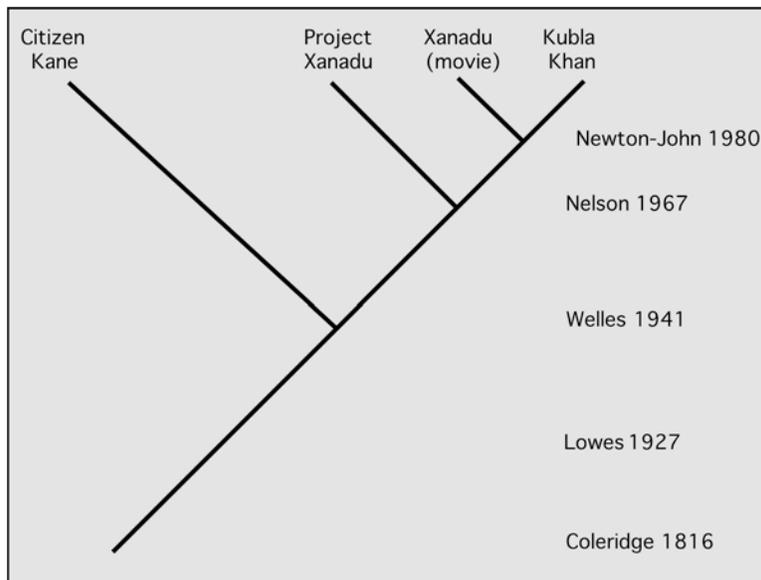
*Xanadu Lineage*

**OLIVIA NEWTON-JOHN'S FILM AND SONG**

For various reasons I had initially considered ONJ's film and song as the source of a new branch of the CK lineage, thus:



I have now seen the film and I believe that is incorrect. Here is my current view:



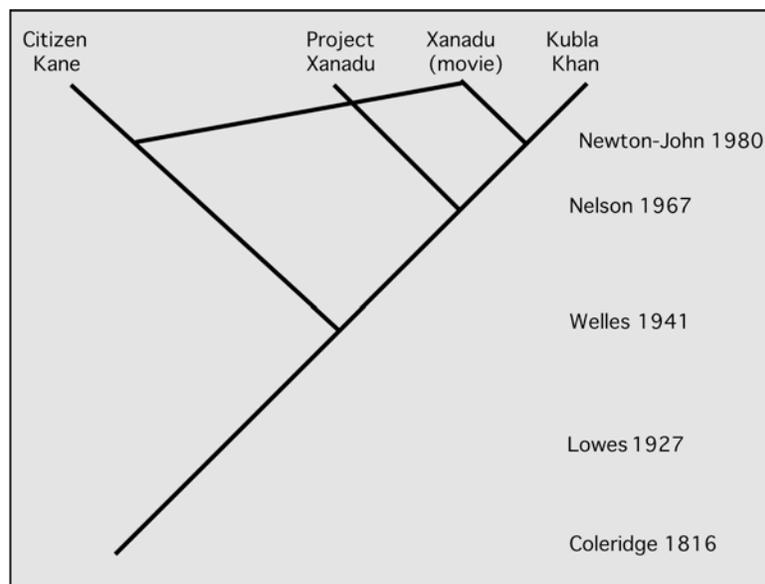
That is, the ONJ lineage comes from the main lineage originating with Coleridge (and on back through Purchas). In the first place, Coleridge's poem is quoted directly in the film in a bit of dialogue between Gene Kelly and Olivia Newton-John. Equally

### *Xanadu Lineage*

important, if not more so, the mood of the film is quite different from that of CK and the valence of |xanadu| is thus quite different.

In CK, Xanadu is the name of an incomplete, but grandiose, estate. It is a symbol of Kane's outsized ambition and, ultimately, his failure – failure in what?, to achieve happiness? In ONJ's film Xanadu is the name of a nightclub and is the fruition of the dreams of two men from two generations, Gene Kelly, and the other one, a young artist (who falls in love with, an honest to gosh goddess, the character played ONJ). It is thus a symbol of success and celebration. The final sequence of the movie takes place inside the Xanadu Club and involves dancing and singing and lots of good stuff – and some bittersweetness as well. For these reasons – direct reference to Coleridge's poem, connotative valence – I believe that ONJ's film and song have started a new lineage off the main one.

It is, of course, possible that upon further analysis and reflection I will propose something like this:



It is not entirely clear to me what this diagram implies in *this analytic context*. It seems entirely possible to me, in fact, quite likely, the people with principle involvement in ONJ's film were aware of CK. The film is, after all, quite well known and has been a staple in the college film circuit for years. It's not clear to me that that in itself is sufficient to place a link between the ONJ branch and the CK branch. Nor is it clear to me that the ONJ film picks up anything from the Welles that accounts for the |xanadu| tokens that are consequent to ONJ's film. Did ONJ's film and song "transmit" anything from CK to their audiences? I don't know the answer to that.

### *Xanadu Lineage*

I don't even know that it's an intelligible question. In one sense it is not. Films do not "transmit" anything from their makers to the audience. That's not how it works. Audiences "create" their own meanings from what is there on the screen in the sound track. But that's a different discussion, one we'll have to leave alone.

Let's consider a different aspect of ONJ's *Xanadu*. In the middle of the film there is an animated sequence. It was done by Don Bluth, who had recently left Disney's animation studios. To my eye that sequence owes debts to the "Nutcracker Suite" segment of *Fantasia* – like *Citizen Kane*, it was released in 1941, and it too was a box office failure initially. More specifically, the animated segment has portions that are like the underwater sequence and the ice-skating episodes from *F*.

Any full account of the cultural lineages intersecting through ONJ's film would have to acknowledge many of them, from various sources. That intersection happened in the minds of the creative team. They, collectively, were aware of "Kubla Khan," *Fantasia*, and much else and they, collectively, included these elements in the film. When audiences see the film, they see it whole. Whether or not they identify the poem fragment (first five lines) or the *Fantasia* reference depends, in part, on whether or not they have prior acquaintance with those works. But the film works as it does even if the references are not recognized.

Such things are true for *Citizen Kane* and for Project *Xanadu* as well. These are all complex cultural products. That each of them mentions *Xanadu* does not mean that each of them derives *primarily* from the |xanadu| meme. Cultural heritage is a tricky matter. Any complex cultural product is likely to be heir to many lineages. Sorting all this out will be difficult in individual cases, as will formulating generalizations about the process.

Nor, I might add, does it make any sense to talk about complex cultural products as some simple combination of the many lineages intersecting through each product. It is not as though these products somehow miraculously congeal into a finished work. That congealing requires the deliberate work of someone's mind, or, in many cases, the minds of many people.

### **IDENTITIES AND NETWORKS**

While I have been interested in "Kubla Khan" all my adult life, I've only been interested in the |xanadu| meme, as such, for two or three years. But it's only been in the last 1, 2, maybe 3 months that I'd googled "Xanadu" and discovered that there are roughly 2M websites that use the word in some fashion. I immediately conjectured that all those usages were either directly or indirectly linked to Coleridge's poem. Indirectly can, of course, be very indirect, through 10, 20, or more links. Though I suspect that, in the majority of cases, the number of links is well under ten, I haven't investigated the matter and so don't really know. One might conjecture that, once the linkage is sufficiently

large – whatever that might be – the linkage to Coleridge is irrelevant.

But if the link is not through Coleridge, no matter how indirect, then where else could the word have come from? Coleridge got the word from a 17th century book by Samuel Purchas. Surely others have read the book. That's one possibility. But, the word in Purchas is the two-syllable "Xamdu" not the three syllable "Xanadu." If there are tokens of |xanadu| on the web that came through Purchas, but not Coleridge, then someone in that line of contact had to have made the same change that Coleridge did. Similarly, the word might have come through a line of contacts that goes back to ancient China but not through Purchas. This presents us with the same problem as the Purchas hypothesis: how did a two syllable word, Shangdu, become three? Finally, there is the possibility of independent invention out of "thin air."

Each of these seems possible, at least in principle, and there are no doubt other possibilities as well. I'd say that I think these unlikely, except that I cannot, at the moment, think of any way of assessing likelihood. That is to say, we are dealing with a real phenomenon caused by real processes in the real world. If we wish to make judgments of likelihood then we need some specification of causal mechanisms so that we can estimate the probability that those mechanisms will produce certain results. I can't think of how to do that in these cases. Hence their likelihood is simply undefined in any rigorous sense.

Let us take one more step along this path. It comes down to this: Did |xanadu| originate in one place, with other tokens deriving from that, or did it originate in two or more places independently? This in turn implies matters of identity.

By identity I mean continuity through time. Consider the old conundrum about great grandfather's knife: *Grandfather replaced the blade, father replaced the handle. In what sense is the knife I now have the same as great grandfather's knife?* Or, consider the relationship between the acorn and the oak, the tadpole and the frog, the caterpillar and the butterfly. In what sense are Shangdu, Xamdu, and Xanadu the same? In the case of Shangdu and Xamdu we can say that they refer to the same city. It is not at all clear what we do with Xanadu on this matter as it was coined within a visionary poem. There is a clear line of *awareness* extending from more recent moments back into the past: Coleridge was *aware of* Purchase, who was *aware of* Kublai Khan. (Note that I *did not* say "line of *transmission*.") But Coleridge changed the word in a significant way, he added a syllable. Beyond that, he set his new word in a particular context, that of a poem, "Kubla Khan." And that poem is what brought the |xanadu| meme to broad awareness. In each of the three cases we've investigated above – *Citizen Kane*, Project Xanadu, and ONJ's *Xanadu* – someone at the branch point knew Coleridge's poem. And that poem certainly played a role in the use to which they put the |xanadu| meme. Each of them used the meme to name something, and the appropriateness of the name somehow derives from the poem.

### *Xanadu Lineage*

To be sure, there seems to be a kernel of meaning associated with the sound itself, but it's not at all clear to me how far that would get without the surrounding poem. If, for example, Coleridge had never written "Kubla Khan," but chatted about Xanadu, maybe wrote about it in some of his many prose pieces of all types, would we now have 2,000,000 |xanadu| hits on the web? It's hard to say. But the answer is quite possibly, no, not nearly so many.

And so we turn to the settings that provided a matrix for |xanadu| and a fragment of the poem at each branch point in the lineage. As I've indicated in the discussion above, each of these branches has a different penumbra of significance surrounding the core |xanadu| meme. While that significance has roots in the poem, it only carries or amplifies some aspect of the poem. The rest is left behind.

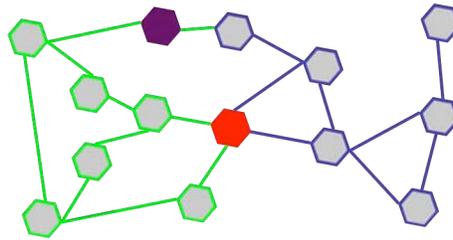
In this respect the story of the |xanadu| meme resembles Moretti's story about the course of free indirect discourse from the early 19th century on into the late 20th century. As that stylistic feature moves to a new (national) literature it acquires a new valence. This movement is necessarily one of geography.

It is not at all clear to me how important geography is in the story we've been telling about the |xanadu| meme. Coleridge wrote his poem in early 19th century Britain. Livingstone Lowes expounded upon it in early 20th century New England and then Welles made his movie in mid-20th century Hollywood. What is the significance of these locations? Hollywood, for instance, is very significant as the physical center of the movie business, beyond that it seems irrelevant. The movie itself, after all, has been screened around the world. The same with Nelson's Xanadu Project – Nelson himself has been various places in the world, including Japan and England – and with ONJ's movie and song. What is important is that each of these vehicles appealed to a different group of people, a different public. And that is true for the novels Moretti surveys as well.

Given the nature of transportation networks, communication and media networks, the constraints imposed by language, and so forth, Moretti deals with marketplaces strongly constrained by political geography. In the case of the branches of the |xanadu| meme lineage, those seem to be geographically centered in the United States, but involve different populations within the United States. Further, I note that much of my evidence comes from web searches, and that biases the results in favor of regions with advanced technology. Beyond that, the fact that one of the lineages is about hypertext technology may well bias results in favor of the Xanadu Project. We simply do not know the prevalence of the |xanadu| meme in the population at large, the world over.

But my general point stands, the different lineages appeal to different populations. In general each of us belongs to a variety of different populations and social networks (see figure below).

### *Xanadu Lineage*



The red person and the are connected to two different social networks, but do not know one another.

Some of those are highly constrained by geography, other are not. It is the social networks that are important; they are the carriers of culture from one person to another. Geography is only one factor constraining the structure and functioning of social networks.

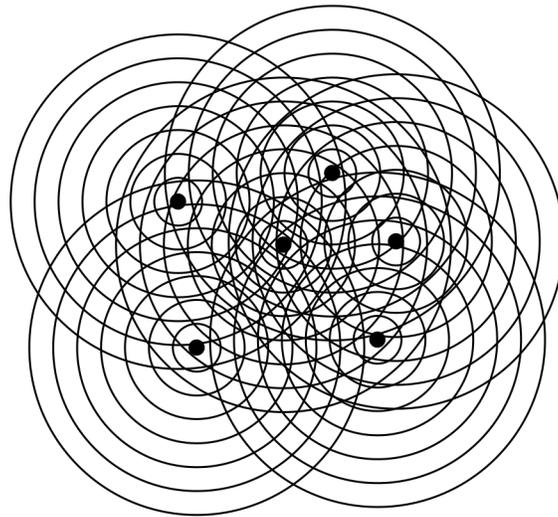
Next, I note that these two features, the |xanadu| meme and free indirect discourse, are quite different in nature. In general, I note that any study of cultural evolution is going to have to deal with many different kinds of phenomena. Generic forms, like the sonnet, or the blues, are in there as well. All of them move through social networks.

On the question of convergence or divergence, I think the answer depends on what you examine. The courses of free indirect discourse or the |xanadu| meme seem to be divergent. But, as I noted above, an individual “product” such as ONJ’s *Xanadu* would seem to be a point of convergence among different cultural lineages. And so forth.

### **WAVES IN THE WEB OF CULTURE**

Let me suggest a metaphor: You drop a pebble into a pond and it sends waves rippling across the surface. Think of that as a wave of memes moving through a population. Now drop another pebble. It sends another set of waves rippling across the surface. Those two sets of waves interact with one another, sometimes strengthening one another, sometimes canceling one another out. Now imagine 10 and 100s and 1000s of pebbles, various sizes, various times, hitting the surface of the pond (see figure below). The patterns will be very complex. That’s culture, rippling through a population of people.

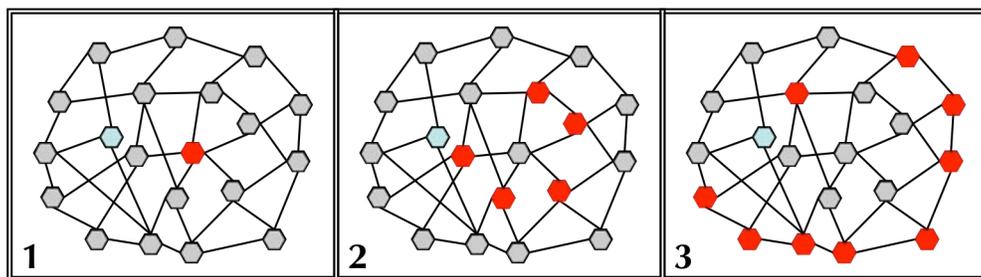
*Xanadu Lineage*



*Cultural waves ripple through the human pond.*

In this metaphor, the points of interaction are individual people, not the movies and books and songs and so forth. Those constructions are simply part of the machinery for transmitting cultural “waves” through the population. From this point of view, each individual is the site of intersection of countless cultural waves. But we are hardly passive repositories for memes passing through. Each of us selects memes to become permanent aspects of our affective and behavioral life. Sometimes the selection is the result of a deliberate decision, often enough the decision is more casual, its basis invisible to conscious mentation.

In the diagrams below we can see individuals and their relations with one another.



*A meme spreading through a social network.*

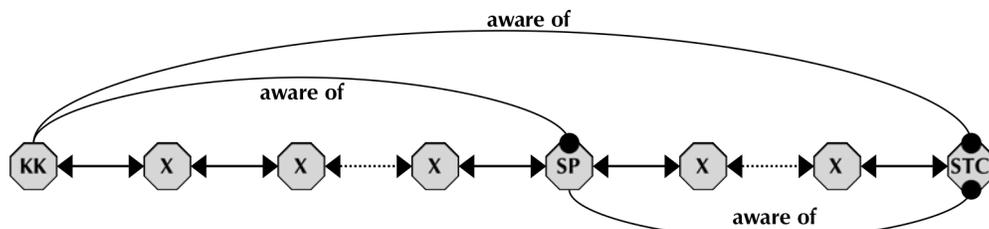
Someone creates a meme in the first diagram, communicates it to her neighbors in the second, and they to their neighbors in the third, and so forth. Diagram one, for example, could represent Coleridge writing “Kubla Khan.” The second diagram would then represent him giving readings of the poem. Diagram three shows (knowledge of) the poem circulating beyond those who got it from Coleridge himself. Eventually, of course, Coleridge published the poem, and that multiplied opportunities for awareness. But

*Xanadu Lineage*

diagram one could also represent the conceiving of *Citizen Kane*, Project Xanadu, or ONJ's *Xanadu*. And so forth.

Culture “happens” in the human population over time. At any moment in time that population consists of a finite number of people. The number has grown over time but, cumulatively, is probably only in the billions or tens of billions. By some reasonable standards that's a large number, but it is still finite. So very much of the population has lived within the last century or two that it makes little difference whether we start the cumulative count 25,000 years ago or 2.5M, or even more. The is the conceptual object in terms of which we (should figure out how to) analyze cultural evolution.

That population has a connectivity structure consisting of *face-to-face* relationships and *mere awareness* relationships. By the latter I mean such things as Samuel Purchas being aware of Kublai Khan without the two of them ever having met or a viewer of ONJ's *Xanadu* being aware of Coleridge without every having met him. Consider this diagram:



*Awareness of people you do not know.*

At the bottom we have a chain of individuals connected through face-to-face relationship. Starting from the left, Kublai Khan knows someone who knows someone and so forth, who knows Samuel Purchas. There are many such chains, but most of them, perhaps all, are of little interest or consequence. Similarly, Purchase know someone who knows someone and so forth to Samuel Taylor Coleridge. The relationships that interest are the ones indicated by links with a small disk at one end, this indicate that the person at the disk end of the link is *aware of* the person at the other end. Such awareness relationships certainly existed in the preliterate world, but they multiplied with the advent, first of writing and printing, and then of the various electronic and digital media.

Let us consider the graphs Moretti uses to characterize histories of the novel in his first chapter. Each of them is a summary indicator of something going on in the underlying populations, each of which is defined by nationality. To revert to my metaphor of the pond, each of them is a snapshot of the pond's surface or, using the metaphor another way, each tells us about fluctuations in the depth of the water at a single point over a period of time. However you slice it, each is abstracted out of the manifold complexity

that is the dynamics of the cultural pond. The curves of origin show something new happening. Just what, that's not clear, other than the emergence of the novel itself. The rise of the middle class? Maybe, depending on where and when. The genre cycles in Britain? Something else. Each of those cycles is the net activity of millions of "memes" percolating through the social network that was the British population – which its extensions over seas as well.

The |xanadu| meme is one of the memes set afloat in that network. It arose in the Lake District on the cusp of the nineteenth century and rippled out from there. Until the mid-20th century its scope was relatively narrow. With *Citizen Kane* it began spreading far and wide and, in one sense, became "concretized" into a word that shows up in dictionaries with a more or less specific meaning relating to architectural extravagance, luxe, exoticism. Another movie and song, a software project, these created ripples of their own. And there are other, smaller, ripples we haven't examined.

#### **OTHER MEMES IN "KUBLA KHAN"**

Finally, I want to consider other memes, specifically, other memes in "Kubla Khan." In a sense, every word in the poem may be considered a meme on the principle that all words are memes. But, for reasons I can't articulate, I believe language is special. For that reason, I want to "bracket" that line of thinking and put it on the self where it can be retrieved later on.

What I have in mind are fragments, phrases, tropes, and notions that are in cultural use beyond the poem itself. "Xanadu" is, of course, one such example. "Paradise," the last word of the poem is another example, as is the trope of the inspired poet from the second part of the poem. Considered as muse, the damsel with a dulcimer is much the same. Each of these circulates far beyond and independently of Coleridge's poem. Has the pleasure-dome reached that status? I don't know. The underground river, the woman wailing? This isn't clear.

In his discussion of "Kubla Khan" Livingston Lowes identified many possible sources for elements in the poem. Is each of them a meme in the sense under consideration here? I don't know. Similarly, the rock group Rush has written a song called "Xanadu" that makes use of many images and phrases from Coleridge's poem. Does that give them memetic status? I'm not sure about that either.

I am inclined to think that the memetic states of some feature can be defined only in relation to some community of people. Whether or not it is a meme depends on its use within that community. Thus certain phrases from "Kubla Khan" might have memetic status within the community of Rush fans, but not otherwise.

Another tricky business.

And then we have the various devices of poetic technique that Coleridge employed in the poem. Many of them are quite common in English poetry. That confers memetic status.

Consider the sonnet in its many variations. These are common and widespread in Western poetry. They are memes. By contrast, no one else has written a “Kubla,” yet Coleridge’s poem has a well-wrought form. But it is not a form that others have found usable.

The point of these last remarks is that memetic status is not somehow inherent in specific entities such that there is, in effect, a “mark” on them proclaiming them to be memes. Memetic status depends on usage within a particular cultural system known to some network of people. An object can be a meme in one system, but not another. Within a given system its memetic status can change from one time period to another. Everything depends on systems of relationships.

## **SO WHAT?**

Much detail aside, two things are beginning to emerge into focus for me:

1) To think rigorously about cultural evolution, we need to think rigorously about the social structure of the human population, in total.

2) As I’ve said in the previous section, memetic status is not *inherent* in something. Rather, such status depends on the socio-cultural network in which some cultural product exists.

On the second question, I’ve appended some note occasioned by reading a passage by Roman Jakobson.

On the first, obviously we must think about culture evolving in the human population. What we need to do is to provide an appropriate abstract characterization of that population. Much of my discussion in the networks and webs sections is to that end. I’ve appended some further notes on that topic.

## **APPENDIX 1: MEMES, EMICS AND ETICS**

Roman Jakobson, Musicology in Linguistics, in Krystyna Pomorska Jakobson and Stephen Rudy, eds. *Language in Literature*, Harvard 1986, 455-457.

This piece is a response to an address given by a musicologist, G. Becking, and originally published in 1932. Here's a passage from pp. 55-56:

An African native plays a melody on a bamboo flute. A European musician will have great difficulty in reproducing the melody accurately, but when he is finally

successful in establishing the pitches, he is convinced that he reproduces the African piece exactly. But the native does not agree, since the European has not taken sufficient notice of the tone color or the notes. Now the native repeats the same melody on another flute. The European thinks it is another melody, since as a result of the different construction of the new instrument, the pitches have completely changed, but the native swears it is the same piece. The difference is that for the African the tone color is the essential point, whereas for the European it is the pitches. What is important in music is not the physically given reality. It is not those tones that are realized, but rather those that *are meant*. The native and the European hear the same sound and mean by it totally different things, since they comprehend it in terms of two different musical systems: musical sound functions as an element of a system.

We now know, as Jakobson did not back when he wrote those words, that the brain contains a multiplicity of cortical areas each specialized for dealing with some one aspect of the musical sound. Though I've not checked the literature, it seems reasonable to think the tone color and pitch involve different brain areas. Hence the two musical systems involved here are based on different neural substrates, although they must obviously overlap in many respects.

With respect to the study of language, the distinction involved is that between phonetics and phonemics. The phonetician studies the properties of linguistic sound, at least so far as they can be captured, described, and analyzed in scientific terms. The phonemicist is interested in the sounds that characterize the repertoire of a given language. The structuralists analyzed such systems in terms of binary oppositions.

Kenneth Pike took that distinction in phonology and generalized it to a whole system for thinking about culture. Thus he talks of *etics* and *emics*. It's the generalization that interests me. For I think there we have the key to an honest memetics. My idea is that, roughly speaking, memes correspond to the emics in Pike's system. [Note that I've read very little of Pike's work myself; he published quite a lot. My comments are based on material I've read *about* his work.]

Let's return to music and language. I like to talk of the sound stream as having an unbounded multiplicity of properties. Properties are identified through interaction with some system. Where the system is a animal nervous system sensitive to sound we talk of sensation and perception. Where the system consists of laboratory equipment we are more likely to talk of measurement and analysis. In either case, the system *apprehends* or *captures* the sound, but only *some aspects* of it. In the absence of any universal or transcendent mode of perception and-or measurement, one might say that the process of apprehending the sound stream brings some specific set of properties to the foreground. A different system would bring different properties to the foreground.

The phonemes of a particular language at one and the same time "belong" to the

language and are properties of the sound. They are memes. They allow people sharing the same phonology to communicate with one another through speech. They same is true of the enabling elements of a musical system. They are memes.

Note that in so identifying memes, I am identifying them as properties OF something that exists in the external world. The memes DO NOT exist inside people's heads as little critters that scoot about from one brain to another. They are out there in the external world. What's inside peoples brains are neural structures for perceiving the memes, for bringing them into the foreground through apprehension. Memes enable interaction among people to be based on culturally specified and constructed artifacts, such as language and music, but much else besides.

## **APPENDIX 2: THE HUMAN WEB**

These are from some notes I emailed to Tim Perper awhile ago:

You know the 6 degrees of separation stuff. That's about networks among human being, NOW. Now lets consider the network among all human beings that have ever existed to date. Obviously, there's large chunks of this network we can never know about in any significant way. But what interests me is this network considered as an abstract object. I'm interested in the topology of that network. And it's absolutely clear that, in thinking about that topology, time absolutely has to be one of the dimensions of our analytic space.

Now consider the various types of edge in this graph, such as:

1. symmetrical (A knows B, B knows A),
2. asymmetrical (A knows B, B doesn't know A),
3. synchronous (A & B exist in overlapping time lines),
4. asynchronous (A & B do not overlap in time),

for starters.

Now, at some point in time, writing began being introduced into human society. How does the introduction of writing allow for new topological structures in the net? Writing means that later people can know about earlier people, but not vice versa. So it introduces a new kind of asymmetrical relationship into the net, one that is asymmetrical AND asynchronous OVER a certain TIME SCALE. Whatever living memory is (3 generations, 4, 8, 9, I don't know), writing allows links in the network that have a span greater than that.

And so forth and so on.

*Xanadu Lineage*

There's a real mathematics needed here and I'm certainly not competent to develop it. For all I know big chunks of it may have been developed by physicists into quantum weirdness. Or maybe none of it has been developed.

But, think back to what I did in *Beethoven's Anvil* with coupling among a group of people making music. That's a real phenomenon, and can be studied through real mathematics. When Leonard Bernstein gets so deeply immersed in a Mozart score that he "becomes" Mozart, that's real too. What's that do to the topology of our net? This is a real time paradox business.

For you see, at one scale of analysis the net consists of individual people and their interactions with one another. At a different scale of analysis, we're looking at nervous systems. Each person has a nervous system. But, the nervous systems of individual can become variously coupled depending on what they're doing and what they're attending to.