Incredible Machines

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June 4th 2014

media archeology  video collage  Bell Labs  actor-network theory

Abstract

This page presents a series of investigations around an essay on early computer-generated movies at Bell Labs (and the documentaries that accompany them) through the contemporary cipher presented in the digital compilation movie *We Edit Life* (2002) by People Like Us (Vicki Bennett).¹ Rather than bind *We Edit Life*...
with the interpretive knot of critique, this essay seeks to deploy the movie as a conduit to open productive passages into the database. *We Edit Life* is uniquely poised to spell out the vexed relations among issues of remediation, digital composition, and archival use. At one and the same time the movie reflects on the origins of computer arts while providing a pioneering instance of the now-ubiquitous digital compilation movie. A close reading of *We Edit Life*—tracing its myriad material sources, the mode and style of its composition, the networks of archival dispersion that screen the movie along with presenting its source material, and finally the broader art historical and contemporary cultural context within which the work embeds itself—offers a passage back into these historical works operating at the birth of computer culture while refreshing their interpretation from our present vantage. The method of this essay, therefore, is waylaid by a heterogeneous array of interpretive and descriptive strategies, applicable to the n-dimensional facets of digital objects in general and the historical conflux of found footage or compilation movies in particular.

**Full Movie:**

People Like Us, *We Edit Life* (2002, 10’03")

[We Edit Life (2002)](http://avant.org/media/incredible-machines)
1. Found Footage and Cultural Critique

Before exploring the digital compilation movie, we can outline the methods for interpreting its immediate precursor, the found footage film. Roger Luckhurst, in his excellent article on found footage science fiction films, reiterates the received wisdom of collage interpretation: “For the project of found footage... [the] most significant discovery was that the coherence of spliced collages could be held together by the instant recognition of genre iconography and narrative formulae.”

That the spectator (or critic) may “generate a sort of mega-text of potential narrative possibilities from their implicit familiarity with cinematic codes.”

And again, “any coherence the film musters is at what [Craig] Baldwin calls the ‘metacinematic’ level, where the spectator can recognize both the codes of each re-purposed fragment but also read the critique.”

This doxa directs both the creation and the reading of found footage films—subversive montage enacting cultural critique remains the predominant mode of understanding the genre. So pervasive is this interpretive strategy, from avant-garde traditions to television or Hollywood films—to say nothing of the internet—that samples from educational, industrial, sci-fi, or ephemeral films are rarely deployed in contemporary works without standing in for some particular object of critique.

**Full Movie:** Bruce Conner, *A Movie* (1958, 11'40")
In deference to Conner’s well-known response to YouTube, I present A Movie here in absurd exaggerated compression, thanks to Tudou.com (http://www.tudou.com/programs/view/3).

See also: Caspar Stracke, “The YouTubing of Bruce Conner (http://post.thing.net/node/211

2. Digital Compilations and Critical
Complications

However, the model of creation and interpretation built on critique fails digital works on a number of significant levels. Again, we may quickly draw a line in the sand by maintaining that the critique of institutions holds no water in the free flow of a control society or network culture.\(^5\) The practices emerging from the use of filmic artifacts widely available via relational databases operate on dynamic spectra of availability, fluidity, and saturation.\(^6\) In particular, the collage essays of People Like Us resist older models of critical interpretation. Over and against critique as a mode of composition, PLU directs our attention to happy accidents, unforeseen rhythms, and regimes of availability—exploring the database as a form rather than critiquing any particular object within that database. Instead these works exemplify the aesthetic turn outlined by Lev Manovich, wherein “pulling elements from databases and libraries becomes the default,” and the joined determinations of software and hardware express the database itself as a dominant form.\(^7\) Dense with clips remediated (and hypermediated) from newsreels, industrial films, and popular science footage, these works are structured according to fluid principles of rhythm and digital compositing that erase the specificity of a pointed historical argument.\(^8\) Further critical complications arise as each new digital compilation movie deploys a range of nostalgic pixels drawn from a variety of analog media. As often as the differences between found footage and digital compilation are noted, filters for reading digital works remain limited by traditional models of critical interpretation. Instead, this essay proposes a range of descriptive methodologies that provide an expanded set of tactics for reading works crafted within the database.
3. Actor-Networks and Digital Objects

A rigorous accounting coordinated with an extensive retracing of sources used in sample-based media manages to highlight the rich conversation (beyond mere genre convention) a new work enacts with—and within—its source material. In this way, this essay proposes a constructive remapping of the generative processes of

selection, distribution, and editorial modulation at the heart of the work’s networked formation. This is not to discard a political analysis, but to assert that detailed descriptions of the networks of constitutive digital objects more fully inscribes the politics of the work within its digital environment along with a host of empirical data. Indeed, Bruno Latour’s work offers the most powerful corrective to critique, countering the “contradictory repertoires [of] antifetishism, positivism, [and] realism,” marking a critical landscape that has lost its way. Along with Latour’s social history of science, we might argue that for digital movies “there is no greater intellectual crime than to address with the equipment of an older period the challenges of the present one.” When everything is available—and previously ephemeral, arcane, or rare footage is only a click away—an appropriate scholarship can only begin by tracing the robust trails of information radiating from any given object. Not only is the character and significance of the contemporary feature shaped by this networked research: the source materials themselves gather relevance in the growing intertext accumulating through each new use and reuse. Thus, rather than performing genre-based cultural critique, this project traces material links extending both inward and outward from *We Edit Life*, in the attempt to assemble an actor-network for demystification beyond critique.
4. Movie Introduction and Online Reception

With these tactics now on screen, we can turn our attention to *We Edit Life*. Commissioned by Lovebytes, *We Edit Life* debuted as part of an international festival of digital art in Sheffield, UK. Reusable from the beginning, People Like
Us first presented the digital movie alongside an improvisatory remix performance entitled Recyclopaedia Britannica which resampled many of the sources comprising We Edit Life. The first in a series of digital collage works, We Edit Life was soon distributed in a variety of formats on Archive.org, UbuWeb, YouTube, and Vimeo. In a statement for the Lovebytes debut of the work, PLU emphasizes the use of samples from the Prelinger Archive. Still a nascent project in 2002, the Prelinger Archive joined the Internet Archive in 1999, with substantial uploads of digitized industrial, educational, and ephemeral films only beginning to appear online. More than simply sampling, PLU’s selection of sources for We Edit Life helped generate Prelinger’s digital archive—many required samples had yet to be digitized, and were soon uploaded to Archive.org. Thus, in We Edit Life, the viewer sees the creation of the moving picture archive along with one of the earliest examples of a movie entirely derived from freely available internet content. Three years before YouTube, We Edit Life anticipates widespread flash remix culture—indeed, on YouTube today, DJ Rolling Paper’s remix of We Edit Life outnumbers the original by over 3,500 views. The distribution history and reception of We Edit Life can be tracked in comment threads on Comedy Central, via Vicki Bennett’s personal website, and through 63,300 other hits on a Google search for “we edit life” + “people like us.”

The reasoning for this brief provenance of the work is not toward comprehension, but rather to locate a history of dispersion. While it’s obviously impossible to describe this network at large, it would be a greater mistake to begin without a sketch of the regimes of production and distribution that enable the movie itself.
5. Opening Frames and Film Leader

A pastel colorized leader streams in the browser window, reproducing the grainy filmic attributes of a conspicuously transcoded object. The soundtrack, a recording of amplified projector pickups, similarly directs the user to an uncanny moment of filmic projection. We see scratches from the leader’s repeated trips...
through the projector, along with specks of dust and strands of hair, chemical
imperfections in the celluloid, misplaced splices, and frame edges. Though we are
viewing in a browser, *We Edit Life* playfully codes itself as a work of film, confusing
the opening moments as the ‘play’ icon of a perfectly animated flash video player
fades into the movie. Indeed, while the anachronistic deployment of these cinematic
artifacts are common to a computing environment that offers “aged film” filters for
nearly every commercial application, the digitized leader and projector soundtrack
opening *We Edit Life* points more strongly to the medial transcoding before the
browser.\(^{19}\) Along these lines, we might also chart the movements of *We Edit Life*
within a refractive mode of essayistic cinema.\(^{20}\) As William C. Wees outlines in his
classic manifesto for Recycled Images, found footage films “cannot avoid calling
attention to the ‘mediascape’ from which they come, especially when they also share
the media’s formal and rhetorical strategies of montage.”\(^{21}\) While *We Edit Life*
extends far beyond traditional montage, its samples nevertheless consistently index
a digital reflection of the filmic mediascape.
6. Timing and Synchronization

One step further, we may observe how these opening frames draw the filmic source material into a playful engagement with digital composition. Immediately recognizable to anyone familiar with analog film editing are the puncture holes used for timing and synchronization between film reels. What first registers as a skip or glitch common to film projection still grappling with sprocket alignment reveals itself to be the repeated sequence of frames including the puncture hole. The
exactitude of digital repetition is craftily embedded into this archaic representation of leader—the tightly controlled timing of an Adobe editing suite renders imprecise analog techniques inoperative. This digital precision continues into animation as the pastel blue title “We Edit Life” slowly fades in and out over the fluctuating filmic background. As the leader projects an ambient background for the title, these superfluous punctures serve the dual purpose of producing attention to the media historicity of the film as a material object while introducing the seamless techniques of digital editing employed throughout the feature. This database aesthetic returns, as Stephen Mamber has persuasively argued, to a generalized field of analysis more akin to the pre-cinematic work of Marey. Operating as an analytic medium, the digital movie “displaces a dependence upon real-time linear presentation and the chemically-based realism of cinema...in its exposing (even revelling in) its own constructions.”

Clip Loop:

We Edit Life, Title Sequence (0'0" - 0'5")
7. Film Editor and Adobe Premiere

Before we lose the attention span of the viewer to another tab, let us quickly skip to the first ‘cut’—a similarly degraded shot of a filmmaker in profile, closely examining a strip of 35mm film. Looking frame-by-frame, with the celluloid in one hand and a pencil in the other, he is both writer and filmmaker—an editor in both senses.
Meanwhile, the leader continues to roll out a countdown in a background layer as Bennett keys the film editor up to the first layer in the foreground. Indeed, the meticulous editing of PLU demands a frame-by-frame modulation closer to animation than montage. Toward the end of *We Edit Life*, we see a mirroring of the film editor’s work desk: PLU’s screen displaying panel arrays of Adobe After Effects 5.0 and Pro Tools Free, both released in 2001. The foreground features an After Effects layer trimmed to the editor’s outline while the background continues streaming the leader sample into a count down. More akin to multi-track audio mixing, *We Edit Life* retains the decidedly DIY aesthetic of digital collage while streaming an increasingly elaborate composite of layered samples throughout the movie. If traditional found footage films require close scrutiny of montage-based juxtapositions, the digital compilation movie requires a detailed accounting of a variety of layered editorial decisions along with the fluid interactions between sampled works. If an understanding of this mode of composition may continue to stream in a background track to this essay, we may begin to explore the samples comprising the layered frame.
8. Stan VanDerBeek and Kenneth Knowlton
“How much trouble is it to get that changed to some other color?” the filmmaker asks, looking up from the celluloid to a technical advisor speaking off-screen. An answer follows: “just find the right place in the program, make the appropriate change, and we’ll run the whole thing again,” but at the mention of the program the filmmaker returns his uncomprehending gaze to the materials at hand. The collaboration at play follows the art-and-technology combination of artist and engineer prevalent in the technological excitement of mid-sixties neo-avant-garde art. The filmmaker shown in profile throughout the scene is Stan VanDerBeek, a prominent underground filmmaker best known for his animated collage films. In 1967, at the time the original footage was shot, VanDerBeek was working as an artist-in-residence at AT&T Bell Labs in Murray Hill, New Jersey. His technical interlocutor is Ken Knowlton, an engineer specializing in computer graphics and motion pictures at Bell Labs. The footage VanDerBeek holds is toward creating one of a series of “poemfields,” a set of experimental short films begun in 1965 that deploy Knowlton’s innovative BEFLIX computer graphics program—a pioneering mode of generating images via a mosaic of Unicode characters. Literally, to alter the film, VanDerBeek must inscribe changes to the character mosaic via a card that is fed into an IBM 7094 mainframe that rewrites the entire sequence onto electronic tape that is later fed through a Stromberg-Carlson 4020 microfilm recorder and finally converted to film. With characteristic wonder, VanDerBeek notes: “The writing of pictures that will make pictures in motion, in coded text form, means a new notation system to store images by... In other words, motion pictures can be written, stored indefinitely (in punched paper form or tape form) and brought ‘to
life’ later. Motion pictures can be conceived (written) in airplanes.”

Watching VanDerBeek marvel at having Knowlton’s program “run the whole thing again,” we might consider *We Edit Life* in 2002 alongside the popular emergence of real-time graphic interfaces capable of writing a full range of digital media formats.

Clip Loop:

*We Edit Life*, Opening Sequence (0'5" - 0'17")
9. *Incredible Machine* and Bell Labs

Lingering for a moment on this short opening clip, we might return to the provenance of the sequence featuring VanDerBeek and Knowlton. The sample is pulled from *Incredible Machine* (directed by Paul Cohen for AT&T, 1968), a fifteen-minute sponsored film covering recent Bell Labs breakthroughs in “computer graphics, computer-synthesized speech, and computer-generated movies and music.” The scene in *We Edit Life* modifies a sequence entering *Incredible Machine* at 3:35, rearranging the conversation and remixing the audio track. Overlays of circuit diagrams and the flashing text “DATA INCOMPLETE” in the background of this scene in *We Edit Life* are both sampled from an earlier segment of *Incredible Machine*. The chalkboard becomes another screen, introducing a variety of clips that will feature prominently in the latter half of the movie—children performing a group experiment in electricity, flowing graphics representing sound waves, stock footage of a home, and a layer matrix of hands operating dials. With voiceover narration and samples from *Incredible Machine* peppered throughout *We Edit Life*, the communications research film serves as the core around which the samples deployed by Bennett constellation and eventually spin out of control. Even on a cursory viewing, without supplemental information describing the samples, the
genre format, ideological thrust, and intended audience of *Incredible Machine* are easily recognized by the casual internet spectator: this is a commercial-industrial-promotional computer science and technology film, bright-eyed with a starry utopian vision of progress, narrated by a familiar paternal voice educating a general populace. Rather than perform a critical turn on this content, however, PLU plays within in its network of association, activating a concerted set of associated materials and concerns.

**Full Movie:**

Paul Cohen/AT&T, *Incredible Machine* (1968, 14'56")
Via AT&T Archives (http://techchannel.att.com/showpage.cfm?ATT-Archives), a recent
distribute a truly incredible set of sponsored films from the Bell Systems archi

10. "Daisy Bell" and Elektro the Westinghouse Robot

Continuing this track, our attention to the details of source materials like Incredible Machine opens robust networks of signification in the rhythmic composition of We Edit Life. The structural and semantic importance of Incredible Machine grows increasingly telling as We Edit Life moves from a focus on computer generated film to computer generated music. The score for Incredible Machine, as the narrator reveals, “was entirely composed by a computer.” This would be no small feat just a few years after “Daisy Bell” famously debuted at Murray Hill. The team programming this first computer to sing—comprised of John Kelly, Carol Lockbaum, and Max Mathews—are all featured in Incredible Machine. Mathews, the grandfather of electronic music, provides the score for the film. Sampling Mathews’ pioneering audio track along with visual layers from Incredible Machine, PLU’s aural attention might best locate We Edit Life in a digital music video genre, where both image and sound are driven more by rhythm and fluid spatial montage than cutting. If there is a narrative to draw out from the movie, we might argue for a story of artificial life, as the various dials and diagrams, engineers and conductors orchestrate the creation of a singing robot. Here, Elektro the Westinghouse Moto-Man, sampled from a newsreel of the 1939 world’s fair in New York, may stand in
for the titular ‘life’ edited by PLU’s computer.\(^{29}\) As *We Edit Life* becomes increasingly disjointed toward the conclusion, Elektro joins with a circuit made of children to sing an ominous remix of “Music Alone Shall Live.” Far from generically sampled, the source material behind Elektro’s threatening ballad in *We Edit Life* invokes a dense mesh of insightful references, beginning with HAL’s death rattle rendition of “Daisy Bell” in Stanley Kubrick’s *2001: A Space Odyssey* (1969), which naturally brings us back to Murray Hill and the birth of synthesized speech, covered in detail by *Incredible Machine*. The ambivalent temporality of *We Edit Life* imports the technological thrill of these sixties innovations into a premonitory mix with the melodic anxieties of a database that will, as Elektro tells us, outlive us all.

**Sampled Clip:**

Medicus collection, Elektro the Westinghouse Moto-Man (1939, 0'56", silent)
11. Poemfield No. 2 and Man and His World

Reeling back from this expanding intertext, we might go deeper into the diegesis, returning to the footage VanDerBeek holds at the opening of We Edit Life. The footage under consideration is most likely Poemfield No. 2 (ca. 1966), one of the ten short poetic films VanDerBeek and Knowlton made in collaboration over a four-year span from 1965 to 1969. It might also be Man and His World (1967), a one minute short film after the title for Expo ’67 that translates the phrase ‘man and his world’ into a variety of the world’s languages. Literally comprised of a mosaic of international textual detritus and small symbolic characters, the poemfields explore the representational capacities and inherent variability of language within computational environments. While VanDerBeek’s background is in image-based collage films like Science Friction, the lexical construction of BEFLIX films inspired a literary form—each word-image necessarily contains thousands of letters as pixels. Reading the text for Poemfield No. 2 alongside We Edit Life, certain resonant themes emerge:
Seeming to see separate things together, PLU reanimates Elektro to a singing life-likeness and more generally deploys disparate archival sources in a variety of repurposed narrative configurations. On this digital translation, we might say We Edit Life, alongside the poemfields, “passes as a punctualized actor,” concealing an intricate network that holds them together. The suspicious ease of a cohesive collage is central both to VanDerBeek’s previous films and PLU’s audio remixes, where dead media is everywhere lifelike. Toward these ends, We Edit Life channels the Incredible Machine soundtrack over a man whittling miniature wooden deer over footage of ‘real live’ deer, stating: “Experimenters in visual perception are using computers to create weird, random patterns that never occur in real life...The art of computer graphics is only in its infancy yet it is already stimulating creative thought in far out areas where research is likely to get complex and unwieldy.”
12. Gathering Sources and Concluding Links
While this extended descriptive performance draws out signification patterns from *Incredible Machine* and associated materials, we can conclude by anthologizing a number of the films sampled by PLU, all of which might offer interpretive feedback between *We Edit Life* and the database from which it stems. More than a supplement, this collection performs a potential inherent to reading works operating within a database. Each source returns to *We Edit Life* while simultaneously pointing the user into an n-dimensional system of signification radiating out from each new source. Rather than limit the reading of *We Edit Life* to a pointed critical position, this project seeks to deploy the movie as a conduit that might direct its user to unimagined passages beyond this particular constellation. In other words, as one screen among many, this essay can only conclude with new directions. Thus, what follows are a select few strands among the many worth tracing: Panels and operators are taken from IBM’s *The Thinking Machines* ([techchannel.att.com/play-video.cfm/2011/3/28/AT&T-Archives-The-Thinking-Machines](http://techchannel.att.com/play-video.cfm/2011/3/28/AT&T-Archives-The-Thinking-Machines)) (1968) an educational short following a robotic cartoon that concludes with a clip from the previously outlined *Man and His World*. At 4:30, the radio director from CBS’s *On the Air* ([www.archive.org/details/OntheAir1937](http://www.archive.org/details/OntheAir1937)) (1937) pops up over a diagram for the chemical formula of celluloid culled from *The Alchemist in Hollywood* ([www.archive.org/details/Alchemis1940](http://www.archive.org/details/Alchemis1940)) (1940). A voiceover from *The News Magazine of the Screen* ([www.archive.org/details/NewsMaga00_7](http://www.archive.org/details/NewsMaga00_7)) (Vol. 7, Issue 3, 1956) describes footage taken from Fashions on the *Ice and Snow* (1940) and *Switzerland: The Land and the People* (1963), confusing time through place. Sound waves, computer panels, and musicians are sampled from *Discovering Electronic Music*.
(www.youtube.com/watch?v=AN8_brP9-8E) (1983), further integrating the parallel history of early computer film and music within We Edit Life. Numerous samples from a variety of orchestral recordings, musical education films, and soundies—including Conducting Good Music (1956), Instruments of the Orchestra (1947), Sound Recording for Motion Pictures (1960), and Looking at Sound (1950), for example—all import melodies and archival narratives to the mix. Indirect samples may also be found: the kitschy “Happy Valley Ranch” sign above the rolling credits calls up the “Lazy-X Ranch” in The World at Your Call (www.archive.org/details/WorldAtYourC) (1950), a Jam Handy/AT&T telephonic communications film. Similarly, the title “We Edit Life” can be heard as an echo of the industrial short We Use Power (www.archive.org/details/we_use_power) (1956) referenced in PLU’s Prelinger inventory. More distantly, Man and Computer (www.youtube.com/watch?v=BUCZJWo9Mzo) (1965) originates the filmic metaphor of the conductor as computer operator in a related hypermediated format. Finally, "IBM Corporation, Military Products Division" presents: On Guard! The Story of SAGE (www.archive.org/details/OnGuard1956) (1956), wherein panel operators at the IBM mainframe bring the innovations in computer technology to a familial Cold War context and the military-industrial complex more generally. Without space to offer more than this brief list of samples, the argument for a fuller archival activation of We Edit Life can nevertheless be concluded by pointing to the editorial remix of texts, images, and movies on this site, along with the outward links to expanded potential significations. Here, as in We Edit Life, the user is directed back into the database, where each sample contains a new network for exploration.
Home Movie:
Browsing the Source Materials & Associated Clips Sequence (8'59")


References
1. For this work, and many others, the prolific audio and video remix artist Vicki Bennett operates under the moniker People Like Us. With respect to this recoded authorship, this essay will refer to the maker of We Edit Life as PLU throughout.
3. Luckhurst, 195.
4. Luckhurst, 198.

6. Online, visual communication is common and the practice of movie-making de-specialized. Indeed, this argument may be extended to amateur FanVids, digital moving-image essays, and a wealth of emergent motion-picture communication systems enabled by the ease of editing and dispersion across networks. We may also recall that found footage is itself an outmoded term, as footage is replaced by flash, QuickTime, and AVI files.


11. For the most concise description of ANT, see John Law, "Notes on the Theory of the Actor-Network: Ordering, Strategy and Heterogeneity," Centre for Science Studies, Lancaster University (2003). “This, then, is the core of the actor-network approach: a concern with how actors and organisations mobilise, juxtapose and hold together the bits and pieces out of which they are composed; how they are sometimes able to prevent those bits and pieces from following their own inclinations and making off; and how they manage, as a result, to conceal for a time the process of translation itself and so turn a network from a heterogeneous set of bits and pieces each with its own inclinations, into something that passes as a punctualised actor.


14. *We Edit Life* was first uploaded to The Prelinger Archive (archive.org) in 2004: http://www.archive.org/details/WeEditLife. Kenneth Goldsmith then uploaded the work to UbuWeb in 2007: http://www.ubu.com/film/plu_edit.html. Around the same time, willmed uploaded the work to YouTube: http://www.youtube.com/watch?v=y_hJmmi_mnI. Vicki Bennett herself uploaded the work to Vimeo on March 30, 2010: http://vimeo.com/10553139. From these various uploads, countless embeds have distributed the work on other sites.


17. The remixed *We Edit Life* is set to a remixed audio track derived from the Crystal Castles’ “Vanished,” http://www.youtube.com/watch?v=AmABw-JaNes

18. This essay operates on Lev Manovich’s definition of trancoding to best describe the translation between media formats, and the computerization of culture more generally. See: Manovich, The Language of New Media, 46-47.

19. In the “Trivia” section of Wikipedia’s page on film leader, we can note the particular resonance of this opening with PLU’s software: “The video editing software Adobe Premiere (as well as later versions, including Adobe Premiere Pro and Adobe Premiere Elements) features a computer-generated version of the SMPTE leader, entitled the "Adobe Universal Leader." It can be customized with different colors, and can be set to beep either at the beginning of each number or just at the two.” http://en.wikipedia.org/wiki/Film_leader

20. On refractive essay films, Timothy Corrigan writes: "In these reenactments of the cinematic, the best of these films about art and film do not simply describe or document filmic or other aesthetic
practices but specifically engage them within an essayistic arena that abstracts the very activity of thinking through a cinematic process." Timothy Corrigan, The Essay Film: From Montainge, After Marker (New York: Oxford University Press, 2011), 182.


23. Since Marey has just been evoked to highlight the analytic slant of digital movies, let us now note that until 2006 Adobe Premiere software packaging featured an iconic galloping horse in homage to Muybridge.


27. Adobe Premiere 6.5, released in August 2002, was the first consumer suite to feature real-time previews.


The Medicus collection presents “detailed documentation of the ‘World of Tomorrow’ in beautiful Kodachrome.”

30. However, since Man and His World is featured as complete and colorized later on in Incredible Machine, it is unlikely to be the source of the conversation between VanDerBeek and Knowlton during the filming of Incredible Machine. Similar in form, it could be any of several poemfields made around this time.

31. This transcription varies from VanDerBeek’s own notation in an attempt to highlight certain textual features from the film that are elided in the script.

32. John Law, “Notes on the Theory of the Actor-Network: Ordering, Strategy and Heterogeneity,” Centre for Science Studies, Lancaster University (2003), 2. “This, then, is the core of the actor-network approach: a concern with how actors and organisations mobilise, juxtapose and hold together the bits and pieces out of which they are composed; how they are sometimes able to prevent those bits and pieces from following their own inclinations and making off; and how they manage, as a result, to conceal for a time the process of translation itself and so turn a network from a heterogeneous set of bits and pieces each with its own inclinations, into something that passes as a punctualised actor.” [http://www.lancs.ac.uk/fass/sociology/papers/law-notes-on-ant.pdf](http://www.lancs.ac.uk/fass/sociology/papers/law-notes-on-ant.pdf)

33. All films not linked in this paragraph have either never been uploaded to the internet, or have been taken down (or perhaps cannot be found by the writer). All are mentioned in PLU’s source list, and thus can be presumed present in We Edit Life.