

ASSAYING THE ESSAY: SCIENCE DOCUMENTARY
AND SELF-PORTRAIT

by

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ABSTRACT

Documentaries about science have long relied on expository and observational modes of filmmaking to perpetuate a pretense of objectivity and authenticity. I contend that these claims on objectivity are false, and that other modes, specifically the self-portrait essay, can more authentically communicate scientific principles. This paper examines case studies of science-related self-portrait films that foreground subjectivity and reflexivity to varying degrees, and analyzes their effectiveness. I argue that the self-portrait essay film and its rejection of objectivity is a compelling alternative to conventional science documentary.

INTRODUCTION

And so the opinion I give... is to declare the measure of my sight, not the measure of things. ...No man ever treated a subject he knew and understood better than I do the subject I have undertaken; ... in this I am the most learned man alive.” — Michele de Montaigne

When Michele de Montaigne published the first volume of ‘Essais’ in 1580, he prefaced it with the comment that he wrote for “the private benefit of friends and kinsmen ... some traits of my character and of my humours” (lxiii). He didn’t set out to pioneer a literary genre and affix a label of his choosing, but rather simply to convey that these were his attempts to put his musings, criticisms, and recollections on paper.

Since Montaigne’s day, the literary essay form has evolved, been transformed and co-opted into several artistic forms of expression. In describing the virtually limitless possibilities of the modern literary essay, Aldous Huxley said, “The essay is a literary device for saying almost everything about almost anything...” (330). The possibilities that Huxley imagined for the literary form of the essay can today be seen in essayistic forms throughout the arts: in music, painting, theater, and film. The extreme variability, the “almost everything about almost anything,” of the essayistic makes it difficult to succinctly define what it is. Just as Montaigne’s writings ranged from meditations on the meaning of life to the recounting of his passing a kidney stone, the essay of today can run the gamut of scholarly analysis to lighthearted anecdote.

One essayistic form in particular, the essay film, is notoriously difficult to pin down. Indeed, it is often easier to define the essay film by what it is not, rather than by what it is. Reda Bensmaïa called it a “melange of genre” (50), and understandably so because there are so many disparate styles and approaches that are rolled up into the

catch-all of essay film. Laura Rascaroli noted that “despite its widespread use... there is much confusion as to the meaning of the term, which is applied to a puzzling variety of films and cinematic forms” (1). Documentaries of past generations, such as of the Griersonian tradition or Direct Cinema genre, tended towards objectivity, continuity, and the presentation of “fact” in an attempt to claim authenticity, whereas the documentary of today increasingly embraces uncertainty, impression, fragmentation, and subjectivity. So many current popular documentaries are now driven from a personal point of view, ranging from the muckraking bravado of a Michael Moore to the animated reconstructions of an Ari Folman, that contemporary audiences have come to expect some degree of subjectivity in documentary film. Rascaroli went so far as to say that “...from such an expansive use one derives the impression that essay is almost becoming synonymous with documentary” (1).

Hans Richter first proposed the term in his 1940 paper “Der Filmessay: eine neue Form des Dokumentarfilms,” imagining that the essay film “allows the filmmaker to transgress the rules and parameters of the traditional documentary practice, granting the imagination with all its artistic potentiality free reign” (192). But Richter’s description, born out of the avant-garde movement of the early 20th century, doesn’t get us any closer to what the essay film *is*. The resistance of the essay film to categorization and classification, however, hasn’t prevented some from making the attempt. Timothy Corrigan proposed five essayistic film modes spanning everything from the didactic to the parodic: the portrait essay, the travel essay, the diary essay, the editorial essay, and the refractive essay. Though the creation of such modes might help one to position an

essay film in relation to others, the reality is more complicated because essay films rarely employ a single mode. Corrigan conceded that “Categorizing essay films according to these modes is, admittedly, a slippery strategy since essay films invariably overlap and mix several of these modes or figures. I believe this overlapping is partly to do with the ‘unmethodical method’ that, according to Adorno, is the fundamental form of the essay and helps explain one of the central paradoxes and challenges of the essay: It is a genre of experience.” (Corrigan, Introduction)

THE GENRE OF EXPERIENCE

I am myself the matter of my book.
— Michele de Montaigne

So what is this “genre of experience”? Francois Truffaut famously predicted films of the future would be first-person, and more like a confession or diary (Truffaut, 19). Georg Lukacs envisioned a future where film would be “an event of the soul” (Lukacs, 2). These descriptions sound very much like the essay film, where the experience of the individual is prized over the disembodied omniscience of the off-camera voice of god in traditional documentary.

Some wondered if Truffaut’s prophecy would ever be fulfilled. In the 1990’s, Phillip Lopate lamented in his paper “In Search of the Centaur: The Essay-Film” that the essay film was nowhere to be found (Lopate, 244). Now twenty years later, essay films are moving in from the margins of cinema and increasingly connecting with broader audiences. The box-office success of performative documentaries by the likes of Michael Moore, Morgan Spurlock, and others may have paved the way for greater acceptance of the essay film form. The films *Fahrenheit 9/11* and *Super Size Me* may not be truly essayistic as many scholars have argued, but they share to some extent the mode of address, the subjectivity and reflexivity, and the “digressive, playful, contradictory, and political” characteristics that have been associated with the essay film (Alter, 18). As such, these films have acclimatized contemporary audiences to key traits of the essay film.

Subjectivity and reflexivity are key components of the essay film, but as I mentioned above, they are not solely its domain. Rascaroli argued that beyond subjectivity and reflexivity, constant interpellation and interaction with the individual spectator are what set the essay film apart from other genres. While a conventional documentary will feed an anonymous audience a “complete, closed argument” (Rascaroli, 34), an essay film will challenge an individual to question the validity and veracity of the ideas put forward by the film’s author and engage in a dialogue with the author on multiple levels.

Though to some degree all essay films are personal, a smaller share is truly autobiographical. Rascaroli identified this subset as composed of the following modes: the diary film, the notebook film, and the self -portrait film. These are films that blend the personal with larger cultural or societal issues, and establish a singular authorial identity through voice-over, captions, subtitles, or onscreen presence that is stronger than in most modes of filmmaking.

Though a diaristic tendency can be found in many kinds of essay films, the diary film as defined by Rascaroli is strictly chronological and time-bound. It is typically created as events depicted unfold, and often singular in address. *Sherman’s March*, an essay film about Ross McElwee’s metaphorical march to the sea while seeking love and fulfillment, and Peter Friedman’s and Tom Joslin’s *Silverlake Life: The View from Here*, a documentary about the final months of life of gay partners suffering from AIDS, are exemplary of how a diary film can reveal the most personal dimensions of the autobiographical form.

The notebook film, in contrast to the diary film, is not obligated to follow a chronological timeline, and as such, can be fragmentary and discontinuous in time. It can be seen as one talking to one-self, jotting thoughts down for future use. It is commonly used as tool for a filmmaker to work through his or her ideas and feelings. The notebook film can stand as an independent work, or serve as a starting point for a future, more in-depth work. Since the intended audience is typically the filmmaker him/herself, this autobiographical mode is unfamiliar to most audiences today.

A much more common autobiographical mode is the self-portrait film. This mode doesn't rely on a continuous narrative, but instead takes circuitous or even random paths in sharing the filmmaker's personal story with the viewer. Rascaroli drew on Bellour to describe the self-portrait's departure from conventional story:

The self-portrait clings to the analogical, the metaphorical, the poetic, far more than the narrative. Its coherence lies in a system of remembrances, afterthoughts, superimpositions, correspondences. It thus takes on the appearance of discontinuity, of anachronistic juxtaposition, of montage. Where autobiography closes in on the life it recounts, the self-portrait opens itself up to a limitless totality (171).

The interaction of the self-portrait with the viewer is one of direct interpellation, but also one of exchange, where the viewer identifies with the author, and one of direct reflection, where the viewer sees oneself looking back. The spectator is asked not only to relate to the filmmaker's vision of self, but to place oneself in the filmmaker's position and relate to one's self. The self-reflection of the filmmaker is transformed into the self-reflection of the spectator. It is the self- portrait mode of film that I am personally drawn to over more conventional forms of documentary because it is there that I discover

greater insights about others as well as myself, and where I find greater challenge and greater satisfaction through such exchange with the author.

Historically, the science documentary has been predominantly situated in the expository mode, far removed from the subjectivity and reflexivity of the self-portrait film. Films of this mode, as described by Bill Nichols, typically employ a disembodied voice-of-God narration and authoritative style, and one-way interaction. The viewer is expected to accept truth claims made by expository documentaries as unquestioned fact. Yet blind acceptance of claims without inquiry or interrogation flies in the face of the scientific method, the heart and soul of the very subject that science documentaries are attempting to treat. Austin and de Jong quoted Michael Renov as saying that first person cinema could be a way to challenge the authenticity of these claims:

The documentary tradition has long traded in that currency of the real, using it to build and sustain arguments or induce agency. But autobiography, even when constructed of indexical parts, remains an agnostic in the house of certainty. ...it seems to me that autobiographical works can breed a kind of healthy skepticism regarding all documentary truth claims (Austin, 41).

I argue that a break from the tired and worn expository conventions of science documentaries of the past is needed. An injection of the autobiographical into science documentary through the use of essay film, and specifically the self-portrait film, is a credible way to make that break. The self-reflexivity and subjectivity of the self-portrait film can foster the healthy skepticism of documentary truth claims that Renov imagined, and engage the spectator in a manner that is more respectful of the spectator's intelligence and more befitting the scientific method. In the following pages, I look at

some science documentaries that have used the self-portrait mode to varying degrees and with varying degrees of success, and revisit my argument.

CASE STUDY #1 — CONNECTED: AN AUTOBLOGOGRAPHY ABOUT LOVE,
DEATH & TECHNOLOGY

When you tug at a single thing in the universe, you find it's attached to
everything else. — John Muir

Filmmaker Tiffany Schlain originally set out to produce a conventional “voice-of-God-narrated” documentary about the growing interdependence and connectedness of our world in the 21st century, but then life intervened. Her father Leonard Schlain, author of the best-selling books *Art and Physics* and *The Alphabet Versus the Goddess*, was diagnosed with terminal brain cancer and given nine months to live. Tiffany also learned that she was pregnant, unexpected news after several years of miscarriages. As she struggled to come to terms with the imminent loss of her father and sudden changes in her life, she recognized frequent parallels between the themes she was exploring in her film and the cards that life was dealing her, and felt compelled to explore them. Mid-stream in production, Tiffany changed course and began producing a very different kind of film: a science documentary blended with the essayistic and autobiographical. This hybrid is what eventually became *Connected: An Autobiography About Love, Death, & Technology*, a film entered into competition at the 2011 Sundance Film Festival.

Keeping just fragments of the original voice-of-God narration by Peter Coyote, Schlain injected her personal life into the film. Using a blend of animations, home movies, archival footage and photographs, she shared her personal relationship with her father and included the viewer in her father's last days, all the while exploring themes of technology, communication, community, human rights, consumption and *consumerism*, cross-pollination, revolution. With each exploration, she drove home the central theme

that our world is at the beginning of a “participatory revolution” (Moxie) brought on by our increasing interconnectedness.

Leonard Schlain, a surgeon by profession, was criticized in the press for wading into waters deeper than he could swim, for his treatment of subjects that he had no professional experience in. Tiffany addressed these criticisms in her film, and questioned if she, like her father, were an outsider, and that being outsiders enabled them see the bigger picture and connect the dots between interconnected themes that others couldn't see.

In attempting to connect so many big picture themes, Tiffany may have spread herself too thin and failed to make the ambitious connections she was attempting. In a New York Times review, Paul Brunick made similar observations: “In its frenetic pace and surface-skimming analysis, 'Connected' unfolds like a manic burst of Internet browsing: a cinematic clickstream of Wikipedia-worthy overviews, Facebook family albums and Twitter-sized philosophizing. ...this documentary essay ricochets among personal memoir, a social topology of the digital era, the evolutionary origins of human civilization and (deep breath) a cosmic history of the universe in the period after the Big Bang. ...There are a lot of vibes in this film, most of them vaguely positive. If only 'Connected' had a stronger center of gravity” (C8).

Though the film went on to win the Women in Film Award at the 2011 Sundance Film Festival and the Disruptive Innovation Award at the 2012 Tribeca Film Festival, audiences sided with the critics. John Anderson of *Daily Variety* added that *Connected* was “too self-indulgent and rife with banal observations to make many inroads among

audiences not being held hostage in a classroom” (12). Online viewer reviews are peppered with phrases like “no focus,” “lack of cohesiveness,” and “self-indulgent,” and express dissatisfaction with the hybrid structure of the film:

The mashing up of the personal family story with the lame attempt at understanding technology did not work for me at all. All it did was serve to break up the flow of each story. (W, Spencer, online posting at rottentomatoes.com)

It’s significant that critics and audiences alike found fault with elements of *Connected* that are central to the self-portrait mode: digression, fragmentation, excursion (Roud), self-reference, images of personal worlds and their subjective construction (Nichols). Corrigan wrote that “both subjectivity and experience are of course the products of discourse, and rather than stabilize and harmonize the encounter between these two discourses, the essayistic creates clashes and gaps in each and across their meeting with each other as a place that elicits, if not demands, thought” (Corrigan, ch. 1). Is it possible that audiences were uncomfortable not just with Schlain’s execution of *Connected*, but with the subjectivity and reflexivity integral to the self-portrait essay and the demands it places on the spectator?

CASE STUDY #2 — ENCOUNTERS AT THE END OF THE WORLD

Werner Herzog's 2007 film *Encounters At The End Of The World* is a documentary filmed at McMurdo Station, a U.S. research station on the south tip of Ross Island in Antarctica. When Herzog was awarded a grant from the National Science Foundation's Antarctic Artists and Writers Program to film at McMurdo, he warned the NSF that his ideas of nature were not like other people's ideas of nature. In his words from the film's opening, "The National Science Foundation had invited me to Antarctica even though I left no doubt that I would not come up with another film about penguins." He went on to make good on that warning: *Encounters* is as much a documentary about the nature of the people who live at McMurdo as it is about the nature of the Antarctic world. (To his credit, and in true Herzog style, he did make room for a few minutes about penguins - about penguin prostitution and suicidal tendencies!)

One of the most revealing descriptions of the characters interviewed by Herzog in his time at McMurdo was offered up by a linguist and computer scientist, William Jirsa. Jirsa lumped himself in with the other residents of McMurdo who he saw as misfits and wanderers searching for a home. He said "...if you take everybody who's not tied down they all sort of fall down to the bottom of the planet, so that's how we got here, you know. We're all at loose ends, and here we are together. I remember when I first got down here I sort of enjoyed the sensation of recognizing people with my travel markings. I was like, hey, these are my people. PhDs washing dishes and linguists on a continent with no languages."

This is a great part of the film's appeal. Rather than unloading fact after fact on the viewer about Antarctic biology, weather, and the impact of global warming on continental ice sheets and sea levels, the director departs from the didacticism of mainstream documentary and instead employs the diverse characters he encounters to springboard into myriad topics such as the extinction of languages, the unsustainability of human civilization on earth, freedom, independence and interdependence, the weirdness of sub-atomic particles, and the cosmic harmony of the universe, all while obliquely exposing the viewer to the stark beauty and complicated reality of Antarctica. This unpredictable meandering from topic to topic is typical of the essay film, and serves to foreground the filtering, artistic choices, and opinions made by the filmmaker to leave no doubt as to the personal nature of the film.

Herzog student Brad Prager was shocked to learn that “where possible he prefers to fabricate and stage material in his documentaries. This inclination of Herzog violates most of the written and unwritten rules of conventional documentary filmmaking, and even unconventional documentary filmmakers such as Nick Broomfield, Ross McElwee and Kirby Dick that embrace subjectivity would likely avoid deliberate fabrication in this sense. By contrast, Herzog is proud to say that one cannot even call his documentaries ‘documentaries’ because he stages, invents and scripts dialogue for them” (7).

Encounters was no exception to Herzog's preference of fabrication. Just as Erik Barnouw theorized that *cinema verite* and its devices (the overt presence of the filmmaker, interaction between filmmaker and subject, intervention of the filmmaker) “could bring hidden truth to the surface” (255), Herzog might justify his staging not out

of disregard for truth, but because the staging could reveal truth on a greater scale. For example, the scene where scientists crouch or lay down on the ice to listen to seal calls was staged. The scientists were directed to their marks and coached on their positions and expressions. There were no seals to listen to at the time, and even if there were, the calls would not have been audible to either the scientists pressed to the ice or to the sound assistant's boom mic; the seal call audio recordings were added in post-production. The scene with its almost alien-sounding trills served to reinforce how foreign, almost alien, the Antarctic world is. Herzog says, "I rehearse and I shoot six times over, like in a feature film... And sometimes I create an inner truth. I invent, but I invent in order to gain a deeper insight (Davies)" (Prager, 8).

Unlike *Connected*, audiences and critics alike connected with *Encounters at the End of the World*, and it was nominated in 2008 for an Academy Award for Documentary Feature. Ironically, the qualities that viewers found fault with in *Connected* are the same that viewers praise in Herzog's film: a strong personal presence central to the film, digression and excursion from any continuous narrative, topics ranging from the trivial to the profound. These qualities are indicative of an essay film, and though Herzog doesn't appear in *Encounters*, I would argue that the film is autobiographical as well. Though it is a series of portraits of the quirky people working and living at McMurdo Station, I believe it is first and foremost a *self*-portrait film. Herzog's face is not required for it to be a self-portrait; the film has a "clearly visible subjective voice" and "personal organizing presence" (Corrigan) through Herzog's voiceover and his interaction with interview subjects; it is no less a self-portrait than the more obvious *Connected*.

Encounters succeeded with audiences without adhering to the established norms of science documentary. Herzog jettisoned the conventions of didacticism, objectivity, and linearity and instead embraced the subjectivity, reflexivity, and direct interrogation of the self-portrait essay film. This infringement of the subjective on the domain of the scientific makes some uneasy, as if an unspoken code were being violated, but I for one, believe it made for a more intellectually demanding, thought-provoking film, one that audiences appreciated.

MY SELF-PORTRAIT SELF

A thousand men, say, go searchin' for gold. After six months, one of them's lucky: one out of a thousand. His find represents not only his own labor, but that of nine hundred and ninety-nine others to boot. That's six thousand months, five hundred years, scramblin' over a mountain, goin' hungry and thirsty. An ounce of gold, mister, is worth what it is because of the human labor that went into the findin' and the gettin' of it.

— The Fred Dobbs character in *The Treasure of the Sierra Madre*

Michel Montaigne chose the title “Essais” because it meant “trials” or “attempts”, and he wanted to self-effacingly convey that he was exploring and experimenting with his writing. “I take the first subject that chance offers. They are all equally good to me. And I never plan to develop them completely. For I do not see the whole of anything; nor do those who promise to show it to us ... Each particle, each occupation, of a man betrays him and reveals him just as well as any other.” In much the same way, today’s science documentaries are full of such promises. The essay film can be a means of revealing these promises to be hollow, a way to argue that the objectivity and authenticity pretended by science documentaries is false and unattainable.

Two English words, ‘essay’ and ‘assay’, both rooted in Montaigne’s French ‘essais’, have come to mean very different things today. Students may know an essay as an analytic literary composition, but an alternate and older meaning is an attempt or effort. The word ‘assay’ is a measurement or quantification, such as of a drug or mineral ore. One of these descendants of ‘essais’ is imbued with uncertainty, while the other is about knowing with precision and exactness. An irony that I explore in my essay film at a gold mining operation, *Sweat of the Sun: Essaying the Assay*, is that both of these words

ultimately have their roots in gold. The Latin “exagium,” forebear to ‘essais’, was the weight of a Roman gold coin, the Solidus, the main gold denomination in its day.

In the film, I play these two words against each other in an attempt to better understand them, and to better understand how the looseness and subjectivity of a film essay, specifically the self-portrait, can mesh with the exactness and objectivity of science. I walk the viewer through both the science and art of gold fire assay, an ancient technique still in use today to measure the gold content of ore. Between steps in the process, I interject my thoughts on measuring gold, both literally and figuratively, and ask fellow assayers about gold in their lives.

I chose to replace myself physically in the film with a coworker, yet used my own voice and thoughts in narration. In part I did so because of the logistics of filming at an active gold mine; it was easier to operate the camera and place a coworker in front of the lens rather than put volunteer crew members through Mine Safety and Health Administration (MSHA) certification to enable them to work on-site. I had a second motive, however; I chose the substitution of myself with another to explore the idea of subjectivity in science film.

Documentaries treating science subjects, and even documentaries in general, have long made claims to authenticity through a strategy of objectivity by using an explanatory voice combined with the indexicality and assumed realism of the image. I believe, however, that such claims are false, that any and every reality is individual and subjective. The objectivity pretended by science documentaries is a façade that does injustice to the spectator. By intentionally substituting myself with an actor in *Sweat of*

the Sun, combined with the subjectivity and reflexivity characteristic of the essayistic self-portrait mode, I undermine traditional documentary reliance on the expository and observational modes' languages of objectivity and challenge viewers to evaluate any truth claims made in the film. I remind them that they are watching "...a constructed image rather than a slice of reality... that every representation, however fully imbued with documentary significance, remains a fabrication" (Renov).

Though not dealing with science subjects, there is precedence for substitution in self-portrait films, such as in Manoel de Oliveira's 2001 *Porto da Minha Infancia* (Porto of My Childhood). In his 90's when he directed the film, Oliveira was creating the latest of his several documentaries on Porto, the city of his youth. His first take on Porto, in the early 1930's, was in the "city symphony" style à la *Man With a Movie Camera* and *Berlin: Symphony of a Metropolis*. For his 2001 film, he used still photographs, archival footage, and actors (grandsons) as proxies of his younger self at two different ages to create a self-portrait of his youth with Porto as the backdrop. The film alternates between the Porto of Oliveira's memories and footage of the modern-day Porto, and makes frequent reference to earlier Oliveira works - filmed, theatrical, and written. Complicating the substitution, Oliveira himself appeared in the film as a stage actor, a burglar, in a recreation of one of his previous theatrical productions, while in the very same scene his grandson, portraying a young Oliveira, watches from a theater balcony. All of these subjective and reflexive choices reinforce his central theme of human memory being suspect and imperfect.

To a much greater degree than *Sweat of the Sun*, Mitchell Block's *No Lies* (1973) is an excellent example of fiction wrapped in the trappings of documentary. It employs a single long continuous take, a hand-held home video aesthetic, and a filmmaker that converses with a subject from behind the camera in cinéma vérité style. The film was scripted by Block in an attempt to explore the relationship triangle of filmmaker, subject, and spectator. In what begins as a seemingly casual conversation between a young woman as she prepares for a night on the town and a male friend videotaping her preparations, the young woman reveals that she was recently raped. The male friend keeps shooting and questioning, going so far as to express skepticism as to whether the young woman is telling the truth or not. His aggressive and indifferent prying drive her to an emotional collapse which is raw and powerfully moving. Only in the credits does the audience learn that the conversation was staged, the rape was fictional, and that the two participants were actors. Nichols saw Block's film as a critique on "the very act of documentary filmmaking itself by suggesting that we as an audience are put in a position similar to the young woman's. We are also subject to the manipulations and maneuvers of the filmmaker, and we, too, can be left unsettled and distressed by them." (Nichols, ch. 2) Though Block wrote that *No Lies* should have been called *All Lies* to better convey that the documentary form can be manipulated to masquerade lies as truth, I argue it could just as fittingly be called *Half Lies*; the same manipulation used with disingenuous intent can also be used to urge spectator critique of documentary truth claims, and potentially reveal broader truth in the process.

Films like *No Lies* and *Porto of My Childhood* helped audiences reevaluate and reset their expectations as to what a documentary film could be; however, these are not science documentaries. It is useful to see science documentaries as documentaries *about science*, and not a genre in and of themselves; they are simply documentaries treating a given subject. They do, however, carry the baggage of a genre: they are burdened by spectator expectations as to how they should look and how they should behave. Science documentaries are expected to be didactic, expository with an authoritative omniscient voice, objective, and linear.

Science documentaries that intentionally buck those expectations to any extent are scarce. On the other end of the objective/subjective/non-reflexive/reflexive divide, personal essay films dabbling in the realm of science documentary are just as scarce. One is hard-pressed to find any such films in the theater or on television, and only a scant number of personal cinema entries in film festivals devoted to science and natural history, such as the Imagine Science Film Festival, the 360 Contemporary Science Film Festival, the Jackson Hole Wildlife Film Festival, and the Wildscreen Film Festival. Curious about this scarcity, I created a thesis film to explore how a self-portrait essay film involving science could be a subjective alternative to the tired expository or observational documentary modes of the past.

CONCLUSION

It was my intent with *Sweat of the Sun* to create an essay film sited at the intersection of the personal and the scientific to support my thesis: that a self-portrait film can use subjectivity and reflexivity to its advantage in engaging the individual spectator to learn about a scientific process. The result was a modest short film that encouraged the viewer to learn about measuring physical gold, as well as to reflect on the metaphorical search for gold that is part of the human experience. Through this filmmaking exercise, I felt that I was able to successfully introduce some fictional elements into the film for the purpose of foregrounding subjectivity and enabling spectator interrogation of the film's content, while communicating scientific principles at the same time.

Inquiry is central to the scientific method and science as a whole, and yet audiences of documentary films *about* science have long maintained expectations for the kind of films that give no place for the filmic equivalent of inquiry: spectator interrogation. Unlike documentaries about other subjects, documentaries about science have generally clung to a single mode of expression. It is an expository mode that preaches a scientific sermon to audiences with the presupposition that audiences will receive without misgiving, leaving spectators no space to question the context or authenticity of the message.

The subjectivity and reflexivity of the self-portrait film are a means for science documentaries to yield space for interrogation of the truth claims made by the filmmakers, and to allow for an important bidirectional dialogue between filmmaker and

spectator to take place. When science filmmakers stop propping up the facade of unassailable objectivity and pursue new strategies for the “creative treatment of actuality,” they will move towards a communication of science with greater respect for its recipients and more befitting the scientific method. (Grierson, 147).

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