

Science and Theme in *ID4* and *The Arrival*

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No better example of how Hollywood can simultaneously botch and elegantly propound one of science fiction's oldest tropes can be found than in these two summer movies from 1996.

A bloated extravaganza populated by cliched characters, flimsy assumptions and elaborate special effects, Roland Emmerich's blockbuster *Independence Day* doesn't merely ignore physical realities, but rewrites the rules by which we can apprehend them altogether.

The cock-eyed rationale for why the Area 51 researchers in the film haven't been able to reverse-engineer a downed enemy scout craft in their possession since the 1940s is a prime example: "We haven't been able to do any experiments because we can't duplicate their power sources," defends Brent Spiner's Dr. Okum before the American president--an explanation that conveniently overlooks the fact that were humans able to duplicate the unknown technology, there would be no need to experiment in the first place.

Released just prior to the larger profile production, David Twohy's *The Arrival* engages the viewer with truly individual protagonists, relevant themes and a story driven more by the excitement of discovery than by overpowering visuals.

"Definitely Sky-Based"

Maverick radio astronomer Zane Zaminski's adherence to established protocol regarding a briefly-intercepted '[wow](#)', or 'shock wave' signal from an extraterrestrial civilization dramatizes the film's unique respect for how real science is done, as his first act is to substantiate his findings through independent verification by other radio observatories, demonstrating how the veracity of all findings ultimately rest on their reproducibility.

Abruptly laid off before he can prove his case, a determined Zaminski (played with paranoid intensity by Charlie Sheen), uses his new job as a satellite TV repair man to surreptitiously link up his customers' dishes to re-acquire the signal on his own--an established principle in radio astronomy called [interferometry](#), where several smaller antennae working in unison can equal the receiving capability of a single larger dish.

Where the signal originates also hinges on actual astronomical knowledge, relevant to the characteristics of variable stars, which, in the case of *Arrival*'s candidate body, may have once been suitable for harboring a life-bearing world prior to becoming lethal in the last few decades. This lends pronounced urgency to the motivation of the film's foes, here to engineer our environment in accordance with the formerly viable conditions of their dying world.

They Came From Roswell

In place of conjecture built upon established scientific or engineering concepts, *ID4* indulges in the tenets of UFOlogy from the outset, associating its alien menace with the abduction phenomenon and reports of saucer crashes.

Visually staggering, yet poorly-considered spectacle fills in the rest of the screen time. In his book, *Beyond Star Trek: Physics from Alien Invasions to the End of Time* (HarperCollins, 1997), renowned physicist Lawrence M. Krauss observes how, given its stated mass of one quarter that of the moon, the colossal mothership orbiting the Earth could devastate our planet through tidal effects alone, eliminating the need for deploying dozens of 15-mile-wide saucers to destroy Earth's major cities.

The “Things I'm Passionate About”

But if the movie treats its technical details with little regard, it treats its characters with even less: the aforementioned Okum is a stereotypical absent-minded professor; Will Smith, a cigar-chomping fighter pilot; Jeff Goldblum's David Levinson, a gifted, if under-motivated, environmental idealist (nothing wrong with ideals, but why wait for something as unlikely as an alien invasion to act on them?).

Arrival's Ilana Green certainly doesn't. A globe-trotting climatologist alarmed by unaccountably accelerating greenhouse gases close to Central America, her path converges with Zaminski's in a Mexican town, where he is tracking down the intended recipient of the mysterious signal.

In this superior suspense tale, we find people whose creative commitment to their respective specialties make them not just interesting, but genuinely admirable in a way that no 'Top Gun' stereotype could match.

Mutual Funds for PlanetCorp, Extinction for Humanity

Far more thoughtful than *ID4's* simplistic jingoism, *Arrival* notably plays up with finesse the disastrous relationship between the West's commitment to global corporate expansion and the health of the planet.

Rather than showcasing what hardware they used to get here, Twohy's script concentrates on the slippery ease with which the aliens attain their goal by exploiting the post-NAFTA industrial and financial sectors that are, in turn, devastating economies and our shared biosphere at an ever-rising clip (little wonder Zaminski's long-suffering girlfriend is an up-and-coming investment advisor).

The Arrival may have been unable to hold its own against Emmerich's event picture at the box office, but the more equitable accessibility of today's DVD market should surely have granted additional visibility to the more substantive production. Though the producers of *Independence Day* had originally hoped the film would become an enduring holiday theatrical tradition, in view of today's acute geopolitical, economic and climate problems, it is Twohy's thriller that is more deserving of repeated attention.