

science,
TECHNOLOGY
and humanity
visions of the future in
2001: a space odyssey

Stanley Kubrick's *2001: A Space Odyssey* (1968) has a claim to being the greatest of all science fiction films. With the exception of Andrei Tarkovsky's wonderful *Solaris* (1972), *2001* predates the next great wave – *Alien* (Ridley Scott, 1979), *Blade Runner* (Ridley Scott, 1982) and *Brazil* (Terry Gilliam, 1985) – by more than a decade. Before *2001*, most science fiction films – and there were some good ones, including *Invasion of the Body Snatchers* (Don Siegel, 1956) – had a certain B-grade quality to them. By contrast, *2001* is

defined not just by its status as a 'serious' movie, but as the first attempt to bring all the attributes of the 'Golden Age' of science fiction – that period between roughly 1940 and the late 1950s, dominated by three writers: Isaac Asimov, Robert A. Heinlein and Arthur C. Clarke – to the screen. In those years, science fiction outlined the key tropes for which it became famous. It was interested most centrally in the impact of science and technology on humanity, which naturally raised the question of the place of

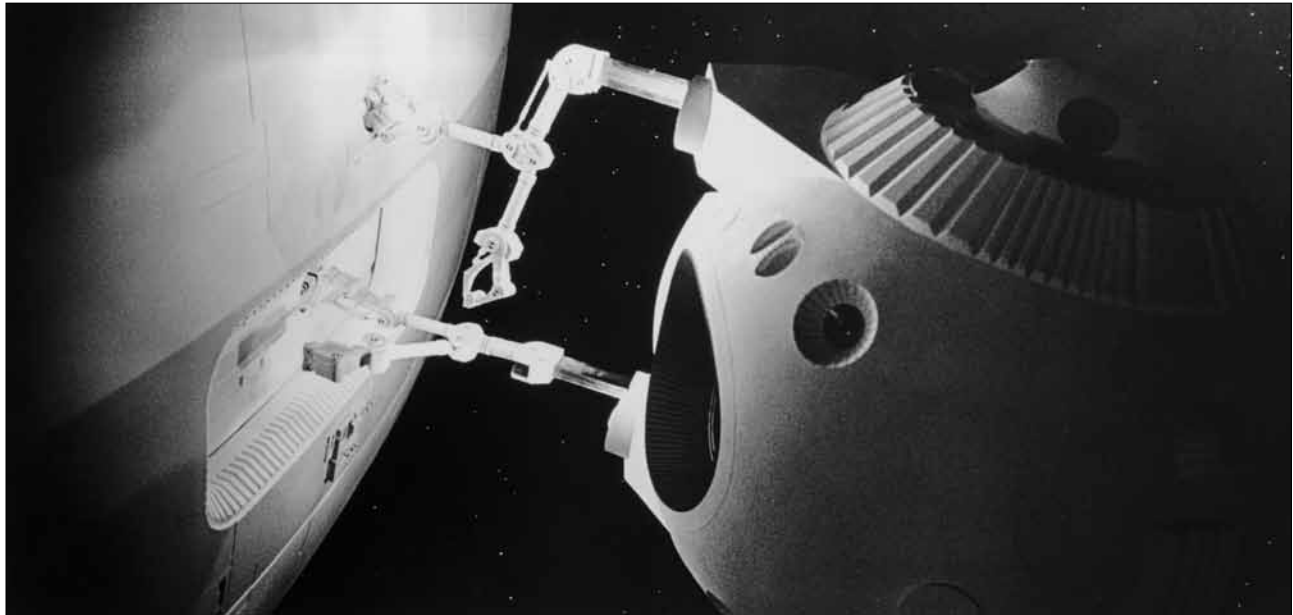
humanity in the universe. Would it be able to escape the confines of the tiny blue-green sphere spinning in the vast seas of space? If so, what would it find out there in the infinite blackness? Would there be intelligent life, and how would the moment of first contact with alien species transpire?

These classic Golden Age questions turn out to be exactly those that Kubrick would investigate in his film, which he co-wrote with Golden Age sci-fi icon Clarke.

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TEXT

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It is no surprise that the novel of *2001*, created in tandem with the screenplay and published three months after the film's release, was written by Clarke, in dialogue with Kubrick. The idea for *2001* first came from Clarke's short story 'The Sentinel', written

explains why *2001* has a four-act structure, essentially telling four interlinked stories. This structure allows Kubrick to position humanity in the long arc of evolutionary history, beginning with the pre-human ape, and ending with the Star-Child, a

(Keir Dullea) across the universe and transform him into a transcendental post-human, the Star-Child.

Yet if these are classical themes of Golden Age science fiction, it is the moment when the film

movie's mystery.³ Lodged then between two times, Kubrick's *2001* resists closure, leaving its answers ambiguous, a quality usually associated with the emerging 'postmodern' culture of the 1960s. As Clarke has said:

*Stanley wanted to create a myth. And I think he succeeded. A myth should work on all sorts of levels and different people should have different interpretations. And that is exactly what happened.*⁴

While the *structure* of the film suggests the scientific optimism of Clarke, its *ambiguities*, the pieces of the puzzle left out by Kubrick, act to undermine that optimism. It is here, at its moments of contradiction, that the film is most intriguing.

Scientific progress and the allure of space

For Clarke and Kubrick, the next step in humanity's evolution is space exploration. The images of space flight are particularly beautiful

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*at Christmas 1948 ... it's a mood piece about the discovery of an alien artifact on the Moon – a kind of burglar alarm, waiting to be set off by mankind's arrival.*¹

According to Clarke, 'Stanley wanted to make a movie about man's place in the universe.'² In such a movie, then, the main character would not be an individual, but humanity itself, and this

mysterious post-human creature. Briefly, the story follows humanity's discovery of three monoliths placed by aliens: one on Earth, which sparks humanity's development of technology; the second on the Moon, which is a 'burglar alarm' to inform the aliens of humanity's scientific and technological progress; and a third, which allows the aliens to transport astronaut Dr David Bowman

departs from these tropes that it is most interesting – and here the influence of the 1960s, rather than the earlier period, makes its mark on *2001*. Indeed, we can see the sensibilities of the two creators diverge when we compare the novel with the film. Clarke himself has noted that 'The novel ... has sometimes been criticized for explaining too much, and thus destroying some of the



in *2001*. The shots are long and hypnotic, allowing the eye to rove over slowly moving spaceships. The camerawork here is tightly controlled, emphasising smoothness and symmetry: Kubrick's direction underscores the *gracefulness* of spaceflight. (Indeed, like most of his films, Kubrick's control of his set pieces in *2001* results in a certain *staginess*.) The music in the opening scenes of space flight is equally important, especially 'The Blue Danube' by Johann Strauss II: the delicacy of this piece immediately recalls all of humanity's long cultural and artistic history. The spaceship is subconsciously linked with the exquisite refinement of classical music – that music which requires the most precise technical skill. Space flight is thus placed in the long line of humanity's cultural achievements as something beautiful and to be unconditionally celebrated.

It was crucial for Kubrick to present the space flight as

being scientifically accurate. According to *2001*'s scientific adviser, Fred Ordway:

*All of [the] modules on the spaceship [Discovery] had to be exact and had to be realistic and had to be approved by the best scientific knowledge that we had at the time.*⁵

This commitment included building massive and complicated sets to simulate centrifugally produced gravity in space. One of Kubrick's great triumphs in the film is his technical mastery of these things. One might compare this to the scientifically inaccurate *Star Wars* (George Lucas, 1977), where noises can be heard in the vacuum of space, explosions occur as if they were under the conditions of gravity, and people walk around the spacecraft as if there were earthlike gravity. Each of these scientific errors mark *Star Wars* as essentially fantasy, rather than the more proper *science* fiction of *2001*, which refuses to contravene known scientific laws.

The sense of space flight as a signal of humanity's progress is specifically a notion of the early post-war years. Though an Englishman, Clarke was part of an American world view, and his writing, as critic Roger Luckhurst has pointed out, 'comes closest to the American model of SF'.⁶ The United States was wealthy in the period preceding the 1960s, and science, rationality and technology seemed to be the source of this wealth. Richard Pells has argued that the lack of damage to capital and infrastructure during the Second World War allowed the US to see the war as part of the *source* of its wealth. 'For millions of Americans, the war brought not terror and suffering, but renewed prosperity and a better way of life after ten years of staggering economic depression.'⁷

Historian Todd Gitlin reminds us that the role of science changed during the Second World War, when it served government, and then during the post-war period, when it

was put to the service of big industry:

*Science was our faith: Golly gee, Mr. Wizard. Knowledge solved problems; it worked. Even the pandemic fear of polio had a happy ending when Dr Jonas Salk developed his vaccine in 1954; what miracles could not be wrought by scientific knowledge?*⁸

In this context it was easy to imagine a domestic future of full employment and the evolutionary development of society towards perfectibility; the United States conjoined enlightenment philosophy and values to the economic conditions of the post-war boom. Humanity was heading towards a monotone future where progress would lead us from the suburbs to the stars, a path of linear development, just as in *2001* we move from apeman's struggle for survival to a wonderfully 1960s future, filled with cleanliness: everything is white, fresh and comfortable. Indeed, one



feels that the sets themselves are fantasy projections of some 1960s interior decorator: see the numerous shots in the second act of the film where Dr Heywood R. Floyd (William Sylvester) is making his way to the Moon. Most notable is the incredible *spaciousness* of the interiors of the spacecraft, and once again, their impeccable cleanliness. It is as if the domestic fantasies of the post-world-war generation are being played out on the screen: with *2001*'s world of vast interiors, designer couches, video telephones and liquid designer meals (compare this, for example, with the degenerated science-fictional landscapes of *Blade Runner* or *Brazil*).

There is also a deep subconscious link between the spacecraft and the automobile. For central to the suburb was the car, which was not simply a mode of transport, but a sign of affluence, freedom, comfort and power. This was the world in which the rocket ship was, as

Thomas M. Disch explains, a symbol for the car:

*When the future began to arrive, in the '50s and '60s – that is, when the dreams of SF magazines began to be translated into the physical realities of the mature consumer culture by a generation of designers and engineers who'd come of age in the pulp SF era – cars were streamlined to resemble rocket ships. In fact, the car was revealed as the secret meaning of the rocket ship – a symbol, at gut level, of absolute physical autonomy.*⁹

The role of technology in evolution

Key in Clarke and Kubrick's view of humanity's evolution is the development of technology as *the* historically determining factor. Once the first monolith is discovered, humanity is set on the path to technological progress. According to Clarke, the 'monolith is essentially a teaching machine. It was a device ... which affected their

brains directly.'¹⁰ This is one of the moments where the film is significantly more ambiguous than the novel. In any case, the presence of the monolith is the catalyst for the ape Moon-Watcher's (Daniel Richter) discovery of the potentially deadly use of bone clubs: in this scene, as Moon-Watcher conceives of the club, there is a momentary cut to the image of the monolith. Importantly, however, the first use of this tool is for destruction – to crush an antelope's skull, then to murder the competing ape tribe to secure the water supply for Moon-Watcher's clan. The moment of conception is accompanied by Richard Strauss' 'Also sprach Zarathustra', with its triumphant and ominous brass and rolling drums signifying a moment of terrible importance, with far-reaching and not necessarily universally positive consequences.

The famous dissolve, in which the club used by Moon-Watcher for murder transforms into a space

bomb (but indistinguishably a space bomb; usually it is thought to be a spaceship), shows the linearity of this world view, for technology is implied here to be the driving factor in humanity's evolution. Such technological determinism is indeed one of the defining characteristics of the Golden Age of science fiction.

Most interesting, then, is the third act of *2001* in which HAL 9000, the computer in charge of the Jupiter mission spacecraft, develops an instinct for self-preservation. Having realised that there was something about the mission hidden from the crew and himself, HAL becomes fearful and paranoid, most clearly expressed in his discussion with Bowman:

I've never completely freed myself of the suspicion that there are some extremely odd things about this mission ... Certainly no one could have been unaware of the very strange stories floating around before we left. Rumours about

something being dug up on the moon ... I find them difficult to put out of my mind. For instance, the way all our preparations were kept under such tight security ...

Can HAL – or any artificial intelligence – legitimately be considered to have emotions? HAL's actions, aimed at killing the crew and preserving himself, raise this essential question. This is ultimately a reversal of the traditional Golden Age science fiction attitude to technology, best exemplified by Isaac Asimov's robot stories. In these stories, there is *always* a rational scientific reason for any robot action.

These robots had lost the libidinal charge of destructiveness so apparent in the 1930s pulps (to be reborn on the covers of the 1950s pulps) or such films as *Metropolis* (Fritz Lang, 1927). The earlier period expressed a fear of technology out of control as represented by the robots running amok.¹¹ In a sense, HAL is a return to such concerns, but in a new context. In the novel of *2001* the events are much closer to Asimov's vision; in the film, Kubrick's image seems so much darker and more contemporary. Perhaps this shows the influence of someone like Philip K. Dick, at that point working on similar concepts of artificial intelligence turning against its creators, especially in his 1968 novel *Do Androids Dream of Electric Sheep?*, later filmed as *Blade Runner*.

Here, then, *2001* significantly departs from its implied argument that technology brings progress: the beauty of spaceflight becomes a nightmare. Things are dialectically inverted and our

relationship to technology thrown into question.

Aliens and transcendentalism

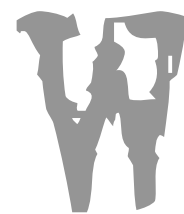
In its *structure*, but not in its details, *2001*'s view of space travel and technology is steeped in optimism for the future. Clarke has a certainty of vision:

How many of those potential heavens and hells [other planets in the universe] are now inhabited, and by what manner of creatures, we have no way of guessing ... But the barriers of distance are crumbling; one day we shall

to Kubrick, who, after much discussion, decided not to represent the aliens at all.¹³

Indeed, the difficulty of presenting the truly alien has always posed a problem for science fiction, for the truly alien simply *cannot* be portrayed – otherwise it would not be truly *alien*, but instead in some way familiar. In other words, the alien is a matter of degrees. The aliens' decision to place Bowman in a Victorian-style room at the end of the film, for example, is an attempt to make him feel comfortable. In other words, this is a somewhat human (i.e. non-alien) trait.

As is usual, Clarke's novel resolves any ambiguity, and this does seem to ruin the mystery of the film. Clarke outlines in one chapter entitled 'Experiment' the aliens' precise motives: 'because, in all the galaxy, they had found nothing more precious than Mind, they encouraged its dawning everywhere'.¹⁴ The aliens themselves transcended their material bodies, first to become mechanical, then 'creatures of radiation, free at last from the tyranny of matter'.¹⁵ Their aim is to raise the other 'children' of the universe to the state of pure mind, and Bowman is the



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*meet our equals, or our masters, among the stars.*¹²

For Clarke, space travel necessarily means contact with alien species, and he and Kubrick investigate this in *2001*. Indeed, it could be claimed that the alien species who placed the monoliths are the *protagonists* of the film. They set off humanity's technological development, and at the end of the film transport Bowman through a star-gate, keep him alive in a strange Victorian-style set of rooms, and upon his death raise him to the status of post-human 'Star-Child'. The difficulty of presenting the moment of contact was clear

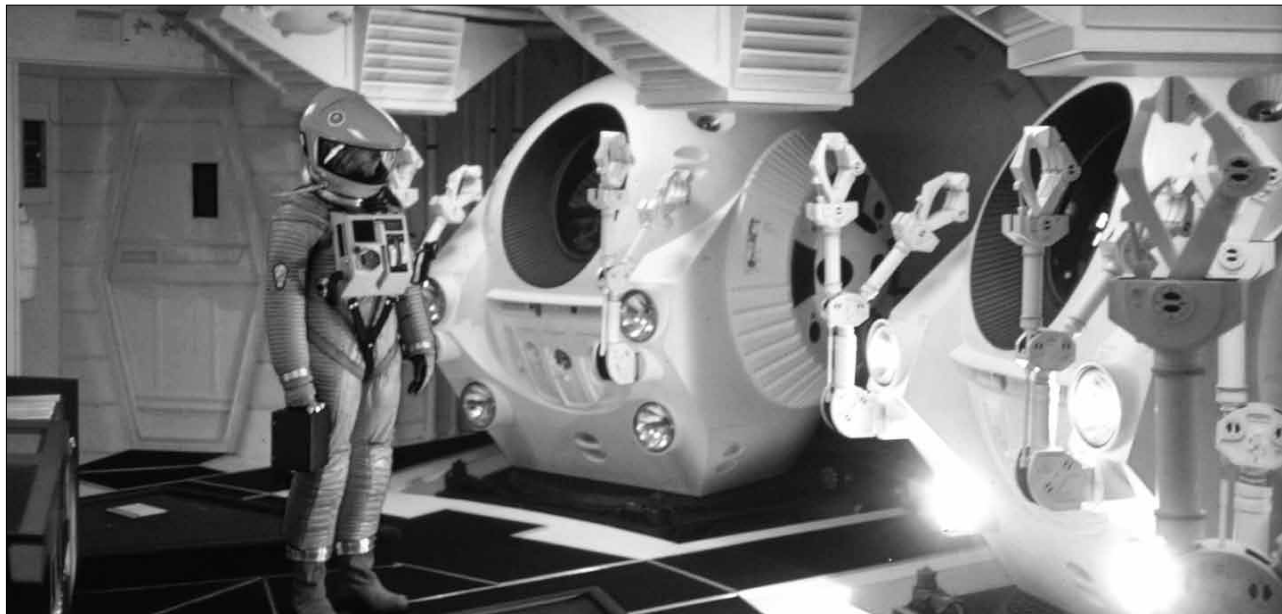
The other great cinematic attempt to represent the alien is Tarkovsky's *Solaris* (masterfully remade by Steven Soderbergh in 2002).

Again, this final sequence in the *film* is ambiguous. What do the aliens want? What are they doing with Bowman? (Kubrick heightens this ambiguity with his direction, not only the hallucinatory trip through the star-gate, but the ageing sequence, in which younger Bowmans view older Bowmans, only for the younger Bowmans to disappear from the scene as our point of view changes.) What is the meaning of the emergence of the Star-Child?

first to make this peculiar transmigration.

This is, according to Disch, a 'recension'¹⁶ of Clarke's 1953 novel *Childhood's End*, in which the children of Earth evolve and unite with a cosmic 'Overmind'. According to John Clute and Peter Nicholls' encyclopedia, Clarke is a paradox:

the man who of all sf writers is most closely identified with knowledgeable, technological Hard SF is strongly attracted to the metaphysical ... the man ... seen as standing for the boundless optimism of the soaring human spirit, and for the idea ... that there is



nothing humanity cannot accomplish, is best remembered for the image of mankind being as children net to the ancient, inscrutable wisdom of alien races.¹⁷

This transcendental vision for the future of humanity is a semi-religious turn, one common in science fiction,

beyond the end of the universe? Why *this* universe and not another?

The transcendental move, in which humanity undergoes a transmigration of the soul into a post-material form, has long been a science-fictional displacement of the religious notion of transcendence, in

age of computers. In *2001* humanity's future is a glorious and transcendental one. We are heading towards a kind of non-material immortality.

Optimism and the death of the future

The 1970s marked the end of Clarke and Kubrick's vision of

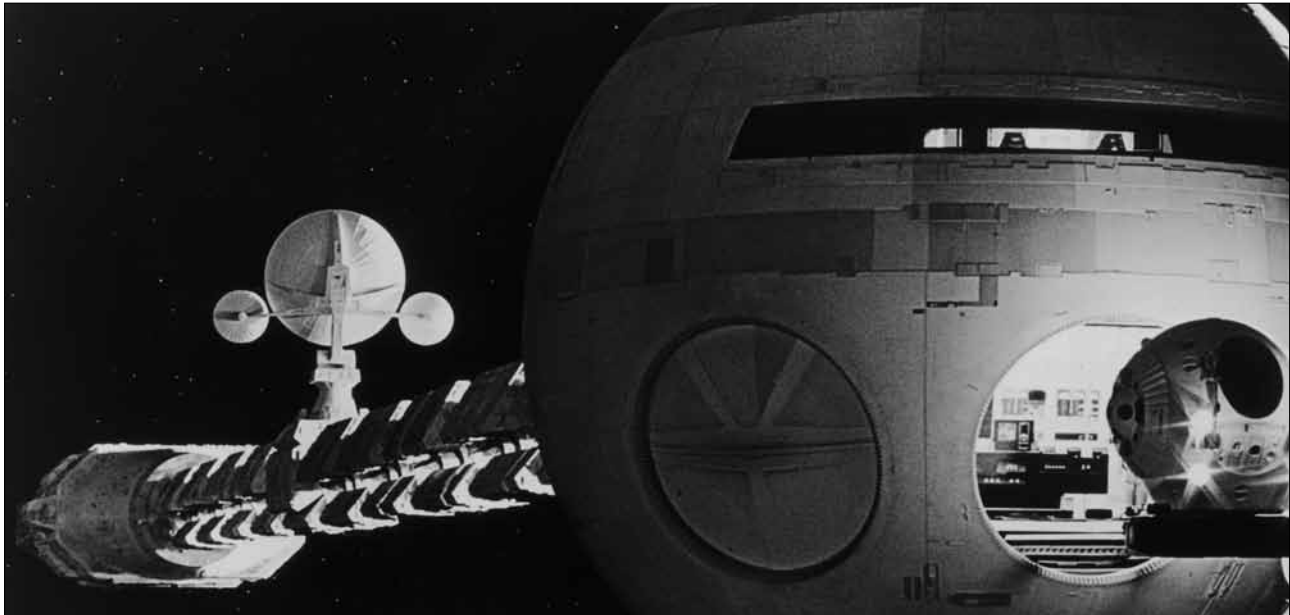
with a 1960s disillusionment. Just as science and technology lead us to a world of beautiful space flight, of control over the natural world, of affluent and spacious lifestyles, they also produce HAL, who threatens to undermine that very moment. If the promise of science and technology is the dominant mode of *2001*, HAL prefigures the time that followed, both in science fiction – the entropic obsessions of the new wave science fiction of the 1960s and 1970s, best exemplified by J.G. Ballard – and in terms of broader outlooks on social development. NASA funding has been cut in the face of public indifference, but greater than that indifference is the breakdown of the optimism of the post-war years. By the 1970s, the great hopes seemed to be dashed. The future turned out not to be of social 'perfectibility' but instead of disintegration. The idea of space travel was supplanted by concerns about resource wars,

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because ultimately humanity comes up against the existential dilemma of the unknowable. What, in the end, gives our lives meaning within the vast seas of blackness that surround us? There are forces in the universe that we simply cannot explain, nor can we even *comprehend*: how long does time last for? What lies

which we leave this degraded material existence for 'heaven'. More recently in science fiction, it has developed in new, more philosophically materialist directions: see, for example, the 'post-humanist' discussions about the possibility that we could transcend our organic form by mapping our minds, bodies and memories into the digital

progress, already being undermined in the 1960s. *2001* shows the strains of this vision coming apart. What makes it such a great film is its resting place upon the fissures between the optimistic and pessimistic outlook. At each moment, as it asserts the Golden Age science-fictional optimism, it undermines this assertion



environmental degradation, the rise of extremist ideologies (both state and non-state sanctioned), economic crises, terrorism, mass poverty in the third world, and our entrapment by the technologies we have built around us.

But the film's very ambiguity makes it of far greater relevance than the book, for its central questions are now as pressing as ever: what is humanity's place in the universe? What is our future? What role does technology play in our lives? It is the very *departure* from the Golden Age scientific certainties that make *2001* great. Without this rejection of the certainties, the film would have suffered from the kind of didacticism that plagues the worst science fiction. The effect is that questions are posed

rather than resolved. The film is a thought experiment: it plays with possibilities, rather than asserts certainties. This has helped to give the film a longevity, for our own answers would certainly be significantly more downbeat than those not only of Clarke and the Golden Age of science fiction, but even of Kubrick himself.

Endnotes

- ¹ Arthur C. Clarke, quoted in the documentary *2001: The Making of a Myth* on *2001: A Space Odyssey* Special Edition DVD, 2001.
- ² Arthur C. Clarke, 'Foreword to the Millennial Edition', *2001: A Space Odyssey*, ROC/Penguin, New York, 2000, p.xi.
- ³ *ibid.*, p.xviii.
- ⁴ Clarke, quoted in *2001: The Making of a Myth*, op. cit.
- ⁵ Fred Ordway, quoted in the

documentary *2001: The Making of a Myth*, op. cit.

- ⁶ Roger Luckhurst, *Science Fiction*, Polity Press, Cambridge, 2005, p.133.

- ⁷ Richard H. Pells, *The Liberal Mind in a Conservative Age: American Intellectuals in the 1940s and 1950s*, Harper and Row, New York, 1985, p.6.

- ⁸ Todd Gitlin, *The Sixties: Years of Hope, Days of Rage*, Bantam Books, New York, 1987, pp.20–21.

- ⁹ Thomas M. Disch, *The Dreams Our Stuff is Made of*, The Free Press, New York, 1998, p.7.

- ¹⁰ Clarke, quoted in *2001: The Making of a Myth*, op. cit.

- ¹¹ This theme was not only common in American science fiction but is also to be found in Karel Capek's 1921 play *R.U.R.* and Fritz Lang's *Metropolis*. See

Peter Wollen, 'Modern Times: Cinema/Americanism/The Robot', in Peter Wollen, *Raiding the Icebox: Reflections on Twentieth Century Culture*, Indiana University Press, Bloomington Indiana, 1993, pp.35–71.

- ¹² Clarke, 'Foreword', op. cit., p.xi.

- ¹³ According to Arthur C. Clarke, quoted in the documentary *2001: The Making of a Myth*, op. cit.

- ¹⁴ Arthur C. Clarke, *2001: A Space Odyssey*, ROC/Penguin, New York, 2000, pp.243–44.

- ¹⁵ *ibid.*, p.245.

- ¹⁶ Disch, op. cit., p.69.

- ¹⁷ 'Arthur C. Clarke', in John Clute & Peter Nicholls, *The Encyclopedia of Science Fiction*, Orbit, London, 1993.

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A promotional banner for the movie Black Ice. It features a woman's face on the left and a man's face on the right. The title "BLACK ICE" is in large, bold letters. A quote from Kirk Honeycutt of The Hollywood Reporter is on the right.

BLACK ICE

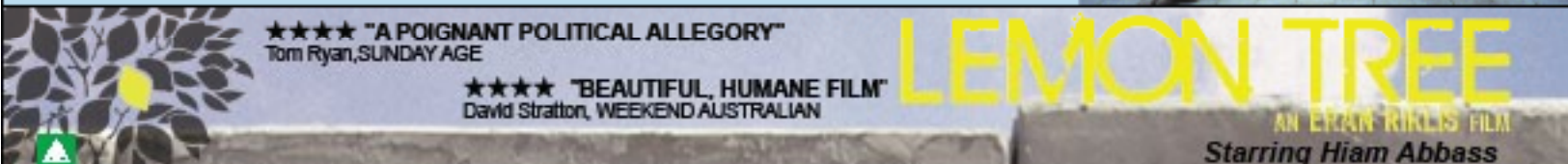
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A promotional banner for the movie Lemon Tree. It features a tree on the left and the title "LEMON TREE" in large, bold letters. A quote from David Stratton of Weekend Australian is on the right.

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★★★★ "BEAUTIFUL, HUMANE FILM"
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