

Chapter 3: Technology and art in the late twentieth-century visual culture

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In the previous chapter, a sketch of the late twentieth-century dystopian world was presented. It was argued that this world seems to be a fragmented amalgam of various kinds of utopian constructions, *both* pleasant *and* unpleasant.

In this chapter an overview of the role of **technology** in the dystopian late twentieth-century world and, more specifically, in Western visual culture, is provided. This section was written from the perspective that at this moment in the year 2001, [new technologies](#) in visual culture have become generally accepted and generally used in the Western world. In most Western late twentieth-century dystopian renderings, the central position of technology, machines and computers is evident, a cultural condition that has been labelled by theorists as technoculture. However, this does not mean that technoculture and dystopia are synonymous.

3.1 Technology as ideology in the late twentieth century

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Since the earliest times, myth and the imagination have played an important role in technological invention. Current technological developments in the twentieth century must be interpreted against the background of centuries of utopian thinking that have impacted in a radical manner on the ideological architecture of late twentieth-century culture.

It is possible to argue that the dystopian condition has come about partly as a result of the mythical belief in the advancement of the human race and the genial scope of scientific and technological discoveries and inventions. Since the postulations of the eighteenth-century

philosopher David Hume on the empirical foundation of knowledge, the purist notion of the rationality of science has been denied. His well-known contention that invention is *a priori* entirely arbitrary and therefore every effect distinct from its cause (Runes 1960: 132, s.v. "Hume, David") has been upheld by many other theorists, including the astro-physicists of our time. Thus, the awareness has been established that it is through the ongoing accumulation of details of recurring patterns that a close, but never a closed, reading of universality can be approximated; it is neither the general principles per se nor the logic and factual evidence inherent to the process of cause and effect that render meaningful outcome.

[Nowotny](#) (1984: 9) argues that "science and technology created a horizon for the myth of the history of reason to unfold ... [and] provided the methods, the content and the ideology to make a certain kind of future thinkable". In 'On the Notion of Technology as Ideology: Prospects', Robert [Pippin](#) (1994: 93) argues that the ideology surrounding technology and the enthusiastic reliance on technology in the history of Western modernisation is something that was anticipated and embraced by the early founders of modernity, especially Bacon and Descartes. Yet, he argues that, in the twentieth century, technology has created a number of problems and controversies. It has led to the concentration of social power in fewer hands; de-skilling; a narrowing of public debates to technology-related topics; an increase of administrative power; a new role for technology in security issues; and complaints that the technological tail is starting to wag the human dog ([Pippin](#) 1994: 93 - 95).

In the twentieth century, according to [Pippin](#) (1994: 96), to view technology (often presented as a value-neutral tool) as an ideology, is to "see an extensive social reliance on technology and its extensive 'mediating' influence in daily life as already embodying some sort of 'false consciousness'". Rather, the social appeal of technological mastery must be seen as a central aspect of the "ethos of the modern revolution itself" ([Pippin](#) 1994: 102). There has been an emergence of a technological imperative, not simply a contemplation of objects and tools as in previous ages. Habermas does not view the acceleration of the technological process in modern times as a unique historical phenomenon ([Habermas](#) 1970: 1987) but sees it simply as an extension of the basic human structure of purposive-rational action, thus de-idealising technology's process of progress.

In Martin Heidegger's phenomenological postulations, the link between time and technology ([Heidegger](#) 1973: 499) is extensively argued. In *Sein und Zeit* (1973) his implicit point is that the structuring of time must have occurred before it could be made amenable to measurement. Historical time is that time which has been transformed by human activity:

Once time has already been transformed by praxis into historical time, it then can be measured in a secondary operation . . . Technological measurement must assume that everything that can be measured has the same character of being amenable to measurement. ([Motzkin](#) 1994: 144).

Heidegger thought that this problem of the measurement of time was a problem more of technology than of the investigation of time. According to [Motzkin](#) (1994: 146), Heidegger is pessimistic about technology, since he views it as a tool more for the manipulation of history

than for the manipulation of nature. Therefore, in Heidegger's thought, the relationship of technology to history and the seminal role of technology in shaping history is of more importance than viewing technology as the diffusion of the scientific world view. The actuality of technology has been destructive, because it has been used for the measurement and control of nature, and not for the production of meaning. Technology is part of the way in which we tend to temporalise ourselves, that is, part of the way in which we produce ourselves and time and attribute meaning to that self-production ([Motzkin](#) 1994: 149).

When the idealisations around and the mythic role of the computer in the contemporary Western world are considered, it would seem that hopes of prosperity and the 'good life', that is, utopian thought patterns, are still firmly seated in technology discourses. According to [Segal](#) (1994: 177), technological prophecies, advertising, theme parks and so forth are linked by a common vision of technological utopia or at least of high tech's notion of the 'good society'. Throughout the twentieth century, technology has played an important role in promoting entertainment and good times for the masses, including in the form of world fairs. One of the first of these was the 1939-1940 New York World's Fair. This Fair postulated the prospect of creating a veritable utopia in the near future ([Segal](#) 1994: 196). According to Segal, as with so many technological utopias, including World Fairs, and visionary writings, the problem has been two-fold: (1) the inability to predict the 'real' future technologically and non-technologically, and (2) the inability to translate actual technological advances into equivalent social advances.

During the Sixties, a new kind of landscape art developed, that of the urban landscape. New York attained new status as the world's economic capital as well as the new art capital, especially during the postwar period when many European artists fled to the US and a sophisticated art audience gathered in New York as centre (Stern 1995: 1155). Artists shunned exterior nature and favoured the cityscape. Huge high-rise buildings became mountains and the city lights at night the stars. A new contextual sublime developed, a sublime brought on by technology. By 1960, American society resembled the 'world of tomorrow' in the forms of skyscrapers and superhighways. During this time World Fairs were amended to amusement parks, trade shows, and theme parks as exemplified by Disneyland and Disney World. Visitors to these implicitly utopian spectacles are provided with a romanticised and/or fantastical vision of the past and the future. Most of these contemporary utopias are technology determined in the sense of ultimate high-tech dreams and future worlds. Still, they remain artificial, superficial and constructed of fibre-glass, all the moving parts controlled by silicon chips.

In the section on [global culture](#), there is reference to contemporary Western ideologies of technological literacy. Technological literacy is a matter of learning the alphabet of the world-wide revolution in knowledge, information and communication. This relates to the ironies embedded in technology as ideology. One such irony is, according to [Segal](#) (1994: 206), the outright acceptance of technological thinking and values by humanists and the pervasive assumption among engineers and technologists that the fundamental problems of the world are technical in nature and have been and are being solved by technology.

The irony here is that technology can never be the solution to every problem and that it remains utopian fiction as demonstrated in the developments in the domains of robotics, genetic engineering, space colonies and so forth. Another irony, according to [Segal](#) (1994:207), is that technological literacy may not be as crucial to the daily functioning of our societies or society as its advocates would have us believe.

3.2 The late twentieth-century urban landscape

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Since the establishment of a technology culture in the West during the 1960s and subsequent developments in computer technologies in the following decades, visual culture and art as commodity have been deeply affected. Since the Renaissance, art has become increasingly commodified, but it is especially since World War II and the emergence of mass-culture that this aspect has become a core function of art. In the twentieth century the art market has prospered into a veritable consumer paradise with modernist works fetching high prices.

As American economic life grew during the first half of the previous century, art collecting became a prime form of trade. However, whilst American artists seemed to have been virtually unaffected by the two World Wars, most twentieth-century European artists were fundamentally influenced by the conditions and horrors of these wars, which were interpreted by many as utopia-gone-wrong (such as Nazism) and the failure of the modern project of progress and technological advancement (the inhuman consequences of the use of nuclear weapons, poisonous gas, bombs, guns, aeroplanes, and so forth). For the above reason two orientations towards technology are found in visual texts that have emerged since the Sixties: technology as threat (dystopia) and technology as advancement (utopia).

French sociologist Jacques Ellul (1964: 21) sees the technological phenomenon as the central preoccupation of the late twentieth century. Interactive machines designed for providing information in aquariums, museums, bookshops, shopping centres, automatic banks, library systems, the Internet, and so on, spring to mind. This is also Spider-Man's world, as depicted in Figures 22 and 23. The technological world of Spider-Man in [DeFalco](#)'s *The Amazing Spider-Man: The Chump, the Challenge and the Champion* consists of cigarettes, an armoured car, power stations, sub-stations, electricity, big screen television, sub-zero refrigerators, CD systems, hijacking, non-conductive webbing, health food stores, headlines, spot welding, mutant telepathy, generators, monitors, energy flows, an insulated costume and cartridges. There are blow-ups, explosions and energy bursts. It is a world that is presented and represented as a threatening, cataclysmic setting in which the battle to survive is predominant.

The synthetically constructed cultural world has become dense and excessive in all its complexity, but, exactly because of this syntheticism, it is a world that is radically alien and antithetical to the natural world. The urbanite knows that this world has no depth, that there is no metaphysical or ontological depth



[Figure 22](#)
electro22.jpg ([DeFalco 1997: 22](#))



[Figure 23](#)
electroback.jpg
([DeFalco 1997: backcover](#))

beyond its mere manufacture, and that therefore this world is 'read' on the surface; in most cases the urbanite does not have this realisation and merely accepts the synthetic world for what it is -- at face value. It is not questioned.

Because of the abundance of non-natural goods, the inhabitant of this world feels alienated -- yet it is a world that is aestheticised in an attempt to make it livable and pleasant. The postmodern citizen does not necessarily feel alien to his/her technological world. In Video clip 9: TalkSml.avi, the aestheticisation of mechanically produced goods and the domination of technology in people's lives are aptly illustrated. The work demonstrates the relationships between the natural, the manufactured world (the hamburger) and the machine (the microwave oven), and becomes a contemporary alternative reworking of Plato's cave myth. In the Platonian myth, dichotomy concerning the dividedness between the inner world, the cave, and the outside world is expressed. It is only through the hamburger's moving out of the microwave oven, the inner world, into the exterior world that its ultimate goal and intention will be realised: to be consumed.

The concept of consumerism refers to physical as well as visual consumption, and involves a 180° degree turn away from the aestheticisation of the natural world to the world of commodities. In the following quotation Hans [Bertens](#) (1995: 213) draws a parallel between the "essentially urban and aestheticized" character of the postindustrial world and that of Walter Benjamin's *flaneur*, the stroller through late nineteenth-century Paris:

In this aesthetized commodity world the department stores, arcades, trams, trains, streets and the fabric of buildings and the goods on display, as well as the people who stroll through these spaces, summon up half-forgotten dreams as the curiosity and memory of the stroller is fed by the ever-changing landscape in which objects appear divorced from their context and subject to mysterious connections which are read on the surface of things. The everyday life of big cities becomes aestheticized. ([Bertens](#) 1995: 213)

Bertens aptly depicts the typical twentieth-century urban scene: a highly technological world teeming with mechanically produced goods. In *The Electronic Eye: the Rise of Surveillance Society* (1994), David Lyon of Queen's University, Ontario, develops a theory that postindustrial societies have become communities of surveillance, a theory that echoes Benjamin's idea of the *flaneur*. In the section entitled 'Dystopia and Surveillance Theory', he interprets Los Angeles as the ultimate, real-time dystopian city that captures environments and situations, such as catastrophe, that must be avoided in future ([Lyon](#) 1994: 200).

Both the postindustrial *flaneur* and the Lyonian surveyor 'survey' the technological world in a neutral and almost apathetic way. It is a matter of observation of, and not participation in, the manifold ideologies presented and articulated in the late twentieth-century mechanised, industrialised and technological world. In Duane Hanson's *Self-Portrait with model* (1979), Figure 24, the artist portrays himself as intently focusing on his subject matter and perceptually 'surveying' or studying the model. She is objectified in the process and dehumanised as a



[Video clip 9](#)
TalkSml.avi
([Kinetix](#) 1999)

stereotype (cf. Figures [68 - 70](#)). Speaking about his work in 1977, Hanson said: "The subject matter that I like best deals with the familiar lower and middle class American types of today. ... I want to achieve a certain tough realism which speaks of the fascinating idiosyncrasies of our times" ([Hough](#) 2000: 20).



[Figure 24](#)

Duane Hanson,

Self-portrait with model (1979)

([Duane Hanson](#) 2000: 21)

Anselm Kiefer created many works on the theme of the flying palette, such as *Palette with Wings* (1981), Figure 25. The heroic palette is metaphoric of the artist-genius detached in god-like fashion from the events 'below'. Kiefer first explored the theme in *Resumptio* (1974) and in later works dealing with the myth of Icarus, such as *Icarus - March Sand* (1981). In the myth, Icarus flew too close to the sun, melting the wax on his wings and falling to his death. The flying palette enjoys a certain freedom and hovers above the excavated land brimming with histories of disaster.

In the two previous works, the artist becomes a *flaneur*/surveyor of the late twentieth century contextualised in a historical, political and existential perspective. Not only is the visually observed world surveyed in detached fashion, but also the metaphysics of time, place, event and object. The significance of this image is central to an understanding of the dystopian condition.

3.3 The culture industry

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The postindustrial world is still very much about massculture, although the term has now been replaced by 'culture industry'. Within such postindustrial industry, the related concepts of process, technique and work have become prominent. (The human aspect of work, figuratively presented in Spider-Man as technician, will be investigated in [Chapter 5](#)).



[Figure 25](#)

Anselm Kiefer,

Palette with Wings (1981)

([Rosenthal](#) 1987: 82)

Postindustrial *Lebenswelt* has become imbued with an awareness of a culture industry of accelerating technical processes and consumer markets. Information processing and archiving have been revolutionised, leading to information overload, non-synchronicity and the loss of self in the speed of invention and the new. The new communication society has set off in many directions which involve new technologies, bandwidth, specialty services, convergence, mobility and networks. In terms of the notion of cultural determinism as mentioned above, Philip Hayward argues that "... the most zealous proponents ... [view] technologies and new approaches to these technologies as necessarily inaugurative of an utopian era where all facets of technology and culture are combined and reconciled" ([Hayward](#) 1990: 1).

Within a generalised perspective, it is fair to argue that technique has always had a bonding effect, even in the earliest of civilisations. Yet, according to [Ellul](#) (1964: 431), developments in computer technology, in particular, have led to a profound mutation of being by becoming determined by and the objective of technique. He argues that:

Every component of civilization is subject to the law that technique is itself civilization. Civilization no longer exists of itself. Every activity - intellectual, artistic, moral - is only a part of technique ([Ellul](#) 1964: 130).

Technical activity is a primal activity and at its core lies the phenomenon of invention. History has shown, however, that invention is ideologically driven. Since computers and the World Wide Web have come into general use subsequent to the Sixties, a technique-driven society and an impulse towards global group cohesion has become discernible.

Deborah Cook of the University of Windsor, in *The Culture Industry revisited: Theodor W Adorno on Mass Culture* ([1996](#)), describes how, during the early twentieth century, Adorno pioneered the exploration of many of the debates inherent in the idea of mass culture while undertaking a comprehensive appraisal of mass societies under late capitalism. Adorno sees the culture industry as a profit-making entity controlled by centralised interlocking corporations, marketing and financial experts, management and production teams and technicians. It entails a standardisation and homogenisation which is merely the promotion of capitalism through ideology.

Adorno borrows [Freud](#)'s idea that there is a split between the psychological and socio-economic realms. He further follows Freud's idea that the culture industry uses libidinally charged techniques ([Cook](#) 1996: 2) and exploits emotion and instinct to such an extent that it undermines and resists rational thought. The individual psyche is targeted by the culture industry, but the individual is simultaneously a product of or determined by that society (Adorno following Karl Marx). In Figure 24, this dichotomy is demonstrated. Eugène Atget's photographic work, *Corsets, Boulevard de Strasbourg, Paris* (1905), depicts the impact of cultural determinism and libidinal charged techniques in the culture industry. The corsets on dummies speak about mass culture in its early stages, stereotyping and a posited ideal sexual format for females. According to Honnef (2000: 643), Atget's work is concerned with a world on the verge of disappearing; that is, old Paris and its customs in decay. The photograph expresses fin de siècle sentiments and millennium fears of collapsing structures and values in society. Another idea that is articulated is a dichotomy between the natural and the artificial, but more than this, the conviction that within the twentieth-century culture industry, the artificial has the upper hand.



[Figure 26](#)
Eugène Atget,
Corsets, Boulevard de Strasbourg, Paris
(1905)
([Honnef 2000: 644](#))

Sixties critics such as Lewis Mumford and Ellul cautioned against technological utopianism, and more so, against technological determinism. Within such a perspective, the human being as the target and historical construct of society, grown weak and helpless against the forces at

work in society. As such the individual regresses to being a mere social object and suffers from loss of economic autonomy and consciousness as subject. A conflict within the self emerges as the split or the dichotomy between the natural self and the technologically determined self is experienced.

In the novel, *Spider-Man: The Venom Factor* (1994) by Diane [Duane](#), the idea of the blurring of the biological and the technological is developed. The real author hides behind a pseudonym and presents various adventures and events in the life of Spider-Man, the double agent for Peter Parker, under the pretext of the real.

It was his best one, a Minax 5600si, with an extremely advanced automatic exposure- and shutter-control system - which it would need, when its owner was hanging by synthesized spiderweb from the top of some building, swinging after a crook, tens or even hundreds of yards away. The camera screwed into a little platform with a ball-and-socket joint able to yaw, roll, and pitch. That, in turn, screwed into the top of a small collapsible tripod which had the motion-control motors and the teeny PC motherboard, each bolted to one of the tripod's legs in a small shockproof case. The whole business, when collapsed, would fit comfortably into a backpack or one of the several elastic pouches that Peter had built into his costume over time.

Finally, there it all stood, ungainly looking but theoretically functional. He took the camera off its stand, popped off its back, rooted around in a nearby desk drawer for some time-expired film he used for tests, loaded the camera, and seated it on the stand again.

The instant the camera was turned on, it whirled on the stand. The camera's inboard flash went off as it took his picture, and another one, and another, and another...

"Oh jeez," he muttered, "cut it out." He stepped away, trying to come around the setup sideways to turn off the slave. Unfailingly the camera followed, taking pictures as fast as it could wind itself, about one per second. The flash was beginning to dazzle Peter. He jumped over the table and took a few steps further around it. The camera tried to follow, fouled itself on its own motion-control cables, and got stuck, still taking picture after picture, its motor making a pitiful and persistent hnh, hnh, hnh noise as it tried to follow him right around the table. Peter reached out and caught the tripod just as it was about to fall over. ([Duane](#) 1994: 36 - 37)

The camera is anthropomorphically presented as having a voice and a life of its own. Peter Parker's handling of the camera technology is narrated, yet it is equipment that *both* characters, the (fictional) real Parker *and* the (fictional) fictional Spider-Man use. Peter steps in, in Spider-Man fashion, just as the camera is about to 'fall over', just before an accident happens. There is allusion to technology as threat and the postulation of the idea of human beings who are not completely in control of sophisticated technological equipment.

In the next section, the idea of the postindustrial world as a culture of industry and technology will be investigated within the context of the concept of globalism.

3.4 Global culture

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Globalisation is a complex process that is rooted in economic, social, moral and intellectual advancement. The idea of a global culture is not new, and had already been thematised during the second century by Polybius in his *Universal History* in his reference to things happening in

the world as united in a common bundle (with reference to the Roman empire) (Robertson in [Featherstone](#) 1990: 21).

With regard to the globalising impulse, Huyssen's first set of debates on the end-of-utopia, that of political conservatism and homogeneity, is applicable. Within this framework the utopian thinking as it has been articulated in pre-twentieth-century contexts has been subverted into a non-ideological value system in which the ethics of information technology and communication are determined by their pragmatic value. The onset of globalisation in the twentieth century cannot be simplistically interpreted as a direct consequence of the ideology and utopian thinking inherent in technological development and perceived as the development of 'tools'; that is, the notion that since the earliest times technology has been invented to ensure survival (war, food) and better living conditions (agricultural tools, vehicles, communication), as well as to control the fate of humankind (nuclear weapons, satellites). Global culture is concerned far more with competent business practice through effective communication as well as an awareness of inequalities and unevenness in (predetermined) knowledge(s) and subsequent 'civilisation'; therefore, (according to the communications giants) nations need to be wired up and connected.

Important in the consideration of global culture, is the conflict of the local and the global, alternatively phrased as the dichotomy between the particular and the universal.

3.4.1 Stages in globalisation

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Attempts by sociologists and other theorists of the past few decades to explain or analyse late twentieth-century culture vary from a radical deconstruction of all forms of universalism to more structuralist tendencies. In many structural theories mass culture and phenomena such as multinational capitalism, Americanisation, media imperialism and consumer culture are often viewed as global issues, that is, as universal forces that manifest without and obliterate differences.

Historically, the phenomenon of global culture started to appear during the Sixties and Seventies when sensitivity for social injustices and prejudices was cultivated worldwide, leading to arguably more democratic, transparent and equitable systems. Yet, in retrospect, most twentieth-century theorists have been concerned with globalising theories since the beginning of the century. Jean Baudrillard, for instance, attempts a structuralist analysis of globalisation as part of the modernising impulse and sees modernity as starting with the Renaissance (Sarup 1993: 163).

The development of the idea of global culture in the late twentieth century has shown various stages. Some theorists refer to first; second and third wave differences, dealing respectively with industrialisation, postindustrialisation (since the 1960s) and the information society (since the 1980s). Others identify a first and second wave of globalising theory starting in the Eighties. In a general sense, postindustrial theory of the 1970s began with bold statements about the conflation of culture and structure, for

instance, the statement by Ernest Gellner (cited in [Archer](#) 1990: 100) in his essay, 'Thought and Change' that "Modern science is inconceivable outside an industrial society ... science is the mode of cognition of industrial society, and industry is the ecology of science".

3.4.2 The structuralist approach

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Margaret Archer, Professor in Sociology at the University of Warwick, finds the subordination of culture to such theories of globalisation, premised on the conflation of culture with structure, highly problematic. She believes that this approach rules out, for instance, the significant contribution that belief systems have made to social change and the formation of societies ([Archer](#) 1990: 117). She further strongly argues against theories which reduce human beings to social agents, resulting in a series of humanoids such as "industrial man", "modernistic man", "postmodern man" and now the infant "information man" ([Archer](#) 1990: 97). She finds the concept of 'metastructure' (as encountered in the writing of Roland Robertson) equally problematic, since it also amounts to impoverishment. If culture is subordinated to the epiphenomenon of structure, it robs humankind of an independent moral vantage point for the evaluation of postindustrial trends or for articulating so-called "techno-choices" ([Archer](#) 1990: 98).

Archer seems to be in agreement with other social theorists who discard the globalising impulse within the twentieth century in favour of more fashionable and non-conformist tendencies (contextualised within the evolution of the avant-garde), instigated by Nietzschean genealogical analyses of history. Such tendencies have led to the abolishment of any form of universalising by claiming the fundamental of 'error' as the basis for all theorising, that is, that no interpretation or theory can ever be final or absolutely valid and that there is no ultimate truth or accurate reading.

Structuralists such as Daniel Bell incorporate the elements of individuality and cultural value in their global theories. This is also reflected in the so-called first wave of globalising theory of the Eighties that may be viewed as a kind of conceptualisation of unity through diversity, or as Mike [Featherstone](#) (1991: 145) puts it, "a unity permitting differences". In many socio-economic and political systems of the Eighties, as in South Africa, for instance, this has been and still is evident in tendencies to strive for cultural integration or homogenisation as part of postmodern ideology to eliminate boundaries and to acknowledge previously marginalised groups.

3.4.3 Ideologies and the nation-state concept

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As mentioned in the Introduction, globalism is grounded in ancient concepts of nationalism and the [nation-state](#) which originated from the Greeks. The utopianism inherent in the concept of nation-state is, however, not much different from that of globalism and *Weltbürgertum*. The ideologies behind globalism include the mythical belief in general upliftment through the introduction of social and geographic mobility; scientific and rationalist thinking; the rationalisation and greater efficiency of administrative systems; the application of science and technology to economic production in the industrial and agrarian sectors; the opening up of opportunities to all classes of the population; the growing intercourse among castes and religions; the spread of general education of both sexes; and the struggle against illiteracy ([Wiener](#) 1974: 334). The myth of repopulating the world with a homogenous 'race', which may be interpreted as a highly efficient and sanitised form of imperialism, could be added to the list.

It is my view that the emergence of global culture theories, that have the pros and cons inherent in the technological project at their core, is not about imperialism, but about the making of a world-system. It must be stressed that global culture is not synonymous with universality, but it is a theory that deals almost in bird's-eye fashion with the making of a world, therefore with viewpoints that are inclusive of differences. In *Spaces of Identity: global Media, electronic landscapes and cultural boundaries*, [Morley & Robins](#) (1995: 11) argue that globalisation, being a concept that embraces difference, has brought on identity crises on many levels. Still, just as universalism was concerned with the question of world order, so globalisation is a conceptual entry to this problem in the most general sense.

3.4.4 Global communication

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One of the most significant transformations now occurring as a consequence of globalisation and new technological forms of delivery, is in the domain of the information and communications media. During the 1980s a new media order came about as a result of the complex interplay of regulatory, economic and technological change. Within this changed context citizens are no longer considered in political terms, but as economic entities or parts of consumer markets. Within the mythology of the new media, the reality of international media is driven more by market opportunity than by national identity.

There is "restructuring of information and image spaces and the production of a new communications geography, characterised by global networks and an international space of information flows" (Morley & Robins 1995: 1). The idea of planet earth as a global village is predicated in computer technology that wires together the global world into a microcosm entrenched in communication. In Figure 25 the idea of a 'small', manageable, controllable planet



[Figure 27](#)

earth is expressed, but also of a planet earth dominated and overshadowed by technology and human inventions.

Apollo-earth.jpg
([Kinetix](#) 1999)

Spider-Man's webbing can be interpreted as a metaphor for the digital wiring up or webbing of the global world, as well as alluding to the World Wide Web as communication tool and structure. The media industry that has sprung up around the character of Spider-Man consists of (to date) more than 147 comics and books, more than 300,000 Internet sites, a TV cartoon series, toys, games and a block buster film that is currently being produced and, according to publicity, will be released on 3 May 2002 (Video clip 10). This industry demonstrates typical globalism in the formation of smaller transnational groupings within the larger global culture.

3.4.5 Third cultures

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Due to the high level of specialisation, international exchange seems to have deviated from national groupings or identities and to have moved into transnational exchange or groupings. The international flows of money, goods, people, images and information have given rise to what has been called 'third cultures' (not Third World cultures), all of which are transnational and mediate between national cultures, including, for instance, large financial institutions, international law firms, ecological concerns, transnational intellectuals, and so forth. These include technoscapes, finanscapes, mediascapes and ideoescapes as respective flows of multinational corporations, currency markets, mass media images and state or counter state movement ideologies ([Featherstone](#) 1990: 7). Such groupings have moved beyond mere interstate liaison and combine different facets in the interaction to become eventually a highly specific, adjustable, conceptual and abstract unit. In this regard, the term, 'new singularity', is often encountered.

Yet, a second phase of globalisation has already emerged: the construction of groupings within groups organised around central interests, a common culture or shared consciousness. [Featherstone](#) (1991: 146) calls this a "common ethnies". Most of these groupings seem to have a shared interest or common political agenda, although some of the strongest groupings have already been proof of the fact that all of these are continually subject to dissolution. To [Mannheim](#) (1936: 19) such groupings are indispensable,

whether true or false, since meaning is derived in terms of certain conceptions inherent to the grouping and it is meaning that is the product of crystallised experiences.

The so-called transnational groupings or third cultures also include systems in which there is absence of the legitimacy of sovereign systems (where real power normally defines the limits of legitimacy). They are replaced by fictionalised collectivity with a collective soul ([Wallerstein](#) 1990: 47). Examples of this are groupings that rely on patriotism or loyalty for cohesion, but remain fundamentally hypothetical, fragile and subject to sudden death due to cyclical power shifts. This is a late twentieth-century phenomenon that occurs in a product-oriented environment and environments based on power relationships. Many of the characteristic groupings in contemporary society have moved beyond authoritarian control, such as workers' unions, engaging in strikes and stay-aways; there are uncensored activities of, for instance, Internet surfers who 'hack' into any site or harass other users. Such groupings are only sometimes ideologically premised, but are mostly without any real claim of ownership for their concept or ideology.

It would seem as if 'interconnectedness' has become the signal concept in the global world.

3.5 Globalism and Africa

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The histories of Africa have always been and still are inextricably bound up with the economics of Western trade and expansion ideologies. With regard to the role of the West in Africa, the 'Big Brother' concept as developed by George Orwell in 1984, is applicable as a kind of dominating Western, monitoring, know-it-all force.

In Africa and Latin America, nations were formed within the historical 'artificial' boundaries of colonialism, the coloniser's gaze "transfixed by the ideal that Africa is a dark place waiting to receive the colonizer" and the "marketplace for 'authenticity', 'tradition', and 'naïveté'" ([Kellner](#) in [Enwezor](#) 1997: 31). [Wallerstein](#) (1990: 43) argues that:

It is precisely because there is in reality a hierarchy of states within the interstate system and a hierarchy of citizens within each sovereign state that the ideology of universalism matters. ... But racism-sexism as an ideology equally serves to contain the contradiction involved in creating sovereign states within an interstate system that contains a single division of labour. For racism-sexism is precisely what legitimates the real inequalities, the always existing (if continually shifting) hierarchies both within the world-system as a whole and within each sovereign state.

Current globalisation processes are often draped in noble criteria such as the spread of information, the upliftment of historically disadvantaged or marginalised groups, collective ethos (for instance, ecological interest groups), or the deconstruction of patriarchy. Western culture is idealised as the dominant universal culture and those cultures that do not conform to this structure are seen as 'inferior' or 'backward' in one way or another. [Kluitenberg](#) (1996: 2) argues that:

... on a global scale, the picture is threatening[ly] homogenous. All these local perspectives seem to consist of the same few basic elements, conjuring up an image of global uniformity. A global village in which to be different means to be out of the picture. ... This particular image of the global village is misguided with regards [sic] to the potentials of digital networking. If the global networks remain decentralised and structured from bottom-up, built by the users who provide their information and services to others out of their own private impetus (as it is now), there will not be a single global village. Instead a multitude of global villages will emerge, focused [sic] on special interests and niche markets. Special interest communities that can be very idiosyncratic indeed, yet be distributed world-wide. In this context local cultures could actually be given a global voice, rather than be squashed by global uniformity.

Wallerstein (1990: 49) maintains that:

The West had emerged into modernity; the others had not. Inevitably, therefore, if one wanted to be 'modern' one had in some way to be 'Western' culturally. If not Western religions, one had to adopt Western languages. And if not Western languages, one had at the very minimum to accept Western technology, which was said to be based on the universal principles of science.

The utopianism projected by the West onto developing countries in Africa entails that such countries should 'catch up' as speedily as possible (Wiener 1974: 336). The rapid progress of scientific technology and the population explosion, however, add to feelings of worldwide frustration. Globally a deconstructive desire emerged to liberate Africa from its colonial past and to recognise the merit and validity of its indigenous cultures. This presents an inherent paradox in the sense that within global perspective a drive (from so-called First World countries) developed simultaneously to work towards the dissolution of boundaries and the inclusion of African nations into the new emerging world structure. According to Wiener (1974: 336), such nations,

... many of them without any previous history of nation-state existence, have aimed at national unity and integration of various tribal, ethnic, or linguistic groups rather than at the secure establishment of individual rights. Capitalism seemed to favor emphasis on individualism and private or personal goals; like the existence of political parties it seemed a divisive element. Socialism, on the other hand, appeared to stress communal efforts and the subordination of individual or group interests to the common good. This "socialism" was claimed as the morally better principle of economic and political organization; the guidance by the state, originally accepted out of necessity, was now welcomed as the "morally higher" instrument for achieving a more efficient and satisfactory economy. What was perhaps an unavoidable consequence of economic and social backwardness was now dignified with the virtue of a spiritual halo. [My emphasis]

It is precisely because there is in reality a hierarchy of states within the interstate system and a hierarchy of citizens within each sovereign state that the ideology of universalism matters. ... But racism-sexism as an ideology equally serves to contain the contradiction involved in creating sovereign states within an interstate system that contains a single division of labour. For racism-sexism is precisely what legitimates the real inequalities, the always existing (if continually shifting) hierarchies both within the world-system as a whole and within each sovereign state.

Contemporary global theories, under the pseudoscientific cloak of universalism, claim to be non-sexist and to signal the end of racist theories. Yet, on closer inspection the same old subjective racism-sexism ideologies are revealed. Science and technology are utterly synonymous with knowledge, and knowledge is conflated with the idea of the 'Information Society'; therefore postindustrial theorists cultivate a formula of desire + instrumental + rationality + technology = progress, as providing the means which enable humankind to achieve its desires.

Achebe (1990: 3) describes the predominant Western perspectives of Africa as gloomy, according to the standards of the West, showing deteriorating infrastructure to name but one problem. Three decades ago, that is during the Seventies, after many countries had gained

political independence, the West painted Africa's future in bright colours ([Achebe](#) et al 1990: 3). The primary challenge for these countries then was to organise the political machinery for government and the guiding ideology was mainly pragmatic and sometimes revolutionary.

Today the situation is that many African countries are supported financially by the international communities and are therefore 'controlled' by these parties. Such sponsors mostly idealise technology, and especially information, as the primary 'tool' for upliftment in terms of urbanisation, economic performance, manufacture and production. One of the dangers facing the technologisation of Africa is that it could become an intellectual play zone and, in Roland Robertson's words, a site for the expression of residual social-theoretical interests, interpretative indulgences, or the display of world-ideological preferences one might add, glib oversimplification. An example of such intellectual 'playing' might be to see ethnic revival as a consequence of the contemporary phase of globalisation.

When we look at the South African situation, it is clearly characterised by multiculturalism, a term describing South African culture in all its diversity. The local cultural picture of South Africa reflects the broader picture of Africa and demonstrates how nationalist, racist, messianic and socialist elements have entered into a strange new amalgam ([Wiener](#) 1974: 337) that, according to Wiener, should rather be interpreted as emerging pan-nationalism within the larger rising global epoch. This situation concerns a flattening of differences between cultures in the universalising language of Westernisation and modernisation. In Wayne Barker's *The World is Flat* (1995) (Figure 26) such flattening is literally depicted. The work also plays with the utopian ideas of paradise as rendered in the image of the green patch.

In the globalisation of Africa, the problems of ideology and ethics remain. It seems, however, that industrialisation and ensuring consumerism have brought about a new, alternative, artificial dimension, almost a reality with a life of its own. David Koloane (Enwezor 1997: 32) makes the following statement: "... the crux of the matter is that artists in South Africa not only had to walk the tightrope -- between two diametrically opposed worlds, the one being the apathetic community without any basic resources, and the other being the power and influence of patronage -- but also had to run the full Apartheid gauntlet." Although the devastating effects of apartheid cannot be ignored for one moment, this kind of statement is often severely criticised by other critics (and, as Koloane mentions, by a particular Nigerian academic) as being too entrenched in politics and martyrdom and requiring a paradigm shift beyond the apartheid syndrome. There is a need to move on into new unchartered territories.

As Africa (and South Africa) becomes more and more urbanised, the cities will allow for a very focused geography of strategic places, a kind of geography of centrality (Saskia Sassen in [Enwezor](#) 1997: 56). In 'Globalisation and the Formation of New Claims' Sassen further argues that the city as an organisational commodity also provides the infrastructure to disenfranchised and disadvantaged communities to grow and 'catch-up'. By sharing resources that are the very consequence of a racist regime



[Figure 28](#)
Wayne Barker,
The World is Flat (1995)
([Williamson & Jamal](#)
1996: 81)

a new transnational economic geography can be created and the past overcome. Cities are the terrain where many different cultures can meet, but they also present new crises in terms of identity.

Although many people are happy to be global or 'world' citizens or to be their 'own' person, there are cultural purists who feel threatened by globalisation. They see their cultural groupings as sacred and feel adamant that every effort should be made to leave innate cultural character intact. Such a view is problematic since it is grounded in the perspective that traditional cultural groupings are static whilst we know that these are not. The answer might lie in every nation, culture or grouping finding its own identity in relation to its context and environment. Featherstone suggests that "... it is much more useful to observe and refer to specific sequences and practices" ([Featherstone 1991: 145](#)).

[Archer](#) (1990: 108-109) argues that science and technology have never been non-ideological, although the technocratic consciousness is aimed at universalising and depoliticising. The new science, just like other sciences, works through and is grounded in fixed rules, internal consistency, *a priori* methods and standards of clarity. Archer refers to an emerging positivism with 'peripherals':

Positivism rules, in public and private life with the boundary between the two dissolving as information technology invades the home and, it is claimed, rules supreme. It rules through its self-evidently beneficial effects: user-friendly technology has thus become like health, obviously a good thing. ... It rules to the exclusion of other modes of thought and thus without opposition. Metaphysics are dead: moral philosophy has been put out of business. What remains is not even the philosophy of science ... but philosophy for science ([Archer](#) 1990: 108-109)

I conclude with the thesis that globalisation does signal utopian thinking and that the making of a new world order through the 'new science', phrased by [Ellul](#) (1964: 21) as a science of means and techniques, is ideological.

3.6 Art and technology

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The relationship of twentieth-century art movements with technology and science has been covered by many twentieth-century theorists writing on society, culture and the arts. In this section the focus will be on shifts that occurred in artmaking processes as a result of changes in technology in the twentieth century.

Although, since the earliest times, technology was ideologically conceived for the improvement of people's lives, it also had the function of creating avenues or means through which to facilitate spiritual experience, as well as to create functional objects. As early as the onset of Industrialisation during the late nineteenth century, the impact of technology on art and literature manifested in the form of [science fiction](#).

Along with new mechanical developments, the beginning of the twentieth century was marked by a radical change in scientific thinking as quantum theory replaced classical physics. (Cf. 'the camera' in [Chapter 4](#):



[Figure 29](#)
Öyvind Fahlström,
Roulette, Variable Painting
(1966)
([Fricke 2000: 209](#))

Photography and documentarism). New engineering technology and its scientific models soon entered the vocabulary of artists and a new aesthetic developed that entailed parallel modes of enquiry between art and science ([Bijvoet 1990: 17](#)). Most Modernists of the early and middle twentieth century were familiar with these novel concepts and art became preoccupied with the expression of the alternative fourth dimension and transcendency.

American and European developments in art during the twentieth century differ markedly, perhaps because Americans were not as traumatised as their European peers by the two World Wars. In America a far more capitalistic and materialistic orientation has been observed as well as the continuation of a firm belief in the myths of progress and advancement through science and technology. In European countries, especially in Germany, the trauma of the War years made deep imprints and affected national identities profoundly. Many European artists fled and immigrated to America when rumours of war started in the early part of the twentieth century.

Several art movements manifested during the twentieth century that had a distinct technological orientation. One such movement, emerging during the Fifties and the Sixties, was the Kinetic movement. This developed in various directions. Three principal strands of this movement were Op(tical) Art (including the work of European groups such as ZERO and the *Groupe Recherché d'Art Visuel*); The Machines and Mobiles School (including artists such Jean Tinguely and Alexander Calder); and the Lightcinetics school (including members of Zero, *Groupe Recherché d'Art Visuel* and the artist Moholy-Nagy) ([Bijvoet 1990: 18](#)). These movements represented the progression from the use of mechanical technology to electronic technology in art.

Another movement that appeared during the Sixties was the Art and Technology movement, discussed in the next section under the heading of [3.7 New Media](#). After the Sixties, developments in attitudes towards artmaking show a 'mixing' of technology modes, such as in the painting, *Roulette, Variable Painting* (Figure 29) of the Swedish-American artist, Öyvind Fahlström, who combines comic-strip clichés with found materials such as photographs, vinyl, cardboard and magnets.

To summarise, during the twentieth century, the technological awareness in artmaking manifested in various ways:



[Figure 30](#)
Marcel Duchamp,
Nude Descending a Staircase,
No 2 (1912)
([Ruhrberg et al 2000: 129](#))



[Figure 31](#)
Lyubov Popova,
Still Life (1915/1916)
([Ruhrberg et al 2000: 165](#))



- * firstly, in imagery showing the awareness of machine culture developments, such as in the work of Marcel Duchamp (Figure 30) and the Futurists who were fascinated by movement and speed;
- * secondly, in the articulation of a new spatial awareness, such as in the work of the Cubists, De Stijl artists and the Russian Suprematists (Figure 31); (the use of flat two-dimensional form in representation in the work of many Modernist artists can be interpreted as evidence of the impact of technology on the human condition, in the sense of the Marcusian one-dimensionality or reduction of human beings to functionality. The Spider-Man comics speak of this posthuman condition in which dimensions and potentials of being human have been watered down under the influence of the technological impact.)
- * thirdly, in the use of found materials revealing the awareness of production and manufacture, such as the Cubists, the Surrealists, Joseph Beuys (Figure 32) and Marcel Duchamp;
- * fourthly, in the use of imagery and materials commenting on aspects of the human condition and changes in identity, such as in the work of artists Edvard Munch, Wassily Kandinsky, Edward Kienholz (Figure 33), Anselm Kiefer (Figure 34), Magdalena Abakanovicz (Figure 35), Hermann Nitsch and Gerard Richter, to mention but a few;
- * fifthly, the emergence of performance as art form in which the body becomes a (mechanical) vehicle for expressing some idea, as in the work of Olaf Martens, Marina Abramovic; (Figure 36) and Stelarc (Figure 37) (to mention but three); and
- * sixthly, installation as art form, frequently employing found materials and technology to convey a conceptual meaning, as in the work of Alan Kaprow (Figure 38), Joseph Beuys, George Segal (Figure 39), Duane Hanson (Chapter 5, Figures 63 to 65) and others.

What has been firmly established during the twentieth century, is the conviction that representation is non-ideological and a matter of choice and concept. This becomes clear when the ideological content in the form of presentation in a painting such as Dürer's *Virgin of the Rose-Garlands* (1506) (Figure 40) is considered. Not only is there harmony, order and constraint in the symmetrical composition, but figures of authority are idealised and celebrated as well as figures from the realm of the arts, such as the

[Figure 32](#)
Joseph Beuys,
Fat Chair (1963)
([Ruhrberg et al 2000: 553](#))



[Figure 33](#)
Edward Kienholz,
The Portable War memorial
(1968)
([Ruhrberg et al 2000: 512](#))



[Figure 34](#)
Anselm Kiefer,
The Painter's Studio (1980)
([Rosenthal 1987: 112](#))



[Figure 35](#)
Magdalena Abakanovicz,
Crowd (1986/1987)
([Ruhrberg et al 2000: 538](#))



musician. The pluralism in mode of representation that became established early on in twentieth century became radicalised during the latter half of the century and led to dystopia in the ensuing fragmentation.

During the late twentieth century, the technological imagination expanded rapidly and manifested itself in virtual technofantasies about robots, space travel, cloning and genetic engineering, to name but a few. These developments will be investigated in the following section.

[Figure 36](#)

Marina Abramovic and Ulay,
Light/Dark (1977)
([Ruhrberg et al 2000: 608](#))

[Figure 37](#)

Stelarc,
The Third Hand (1995)
([Ruhrberg et al 2000: 616](#))

[Figure 38](#)

Alan Kaprow,
Yard (1961)
([Ruhrberg et al 2000: 583](#))

[Figure 39](#)

George Segal,



[Figure 40](#)

Albrecht Dürer,

Virgin of the Rose-Garlands
 (1506)

([Art History Encyclopedia](#)
 1996)

3.7 New media

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It is fair to maintain that the majority of images found in everyday life today have at one stage or another involved a computer. The digital transformation at many levels of Western culture and the arts has been so dramatic and far-reaching that, according to Hannes [Leopoldseder](#) (1997: 11), at the turn of the millennium it can now be considered 'mainstream'.

The standard equipment in both visual and audio environments is the embedding of digital technologies within traditional technologies. New technologies not only enhance but also often replace old technologies. Traditional media and computer art are fast becoming subsumed under the umbrella of a large domain entitled 'cyberart'.

The production and manipulation of computer images has a relatively short history, dating back to the 1950s and the simple sine/cosine-type display of graphics on monitors originally used in military defence environments ([Darley](#) 1990: 39). From the outset there were many different motivations involved in computer image development, such as military, experimental and commercial objectives. Computer scientists, for instance, developed hard- and software in order to produce images via computers. According to [Darley](#) (1990: 42), by 1963, computer generated line animation films were being produced at Bell Laboratories using simple vector (wire frame) techniques for the purpose of creating visual simulations of scientific and technical ideas. He maintains further that “[the] beginnings of computer imaging in the Sixties occurred at a moment in history when students of culture believed they could locate the onset of important shifts and radical departures - a kind of watershed - in areas of both cultural and aesthetic practice and theory” ([Darley](#) 1990: 40).

The Fifties research and development that started in the field of computers grew exponentially, a process that is still continuing today. The new postwar context, the cybernetic era, saw an increasing interrelation between art, science and technology. New interdisciplinary fields, such as systems theory and communication theory, evolved. Such “intellectual technology” ([Bell](#) 1976) became the “new steering systems of post-industrial society” ([Darley](#) 1990: 41).

The new information technology that was developed during the Sixties, based on CAD (Computer Aided Design) technologies, could help design the production process as well as the product itself ([Rowe](#) 1986: 50). In the sense that the computer can store, generate and present enormous amounts of information, it is a valuable tool in the management of information and visual communication. The working environment and methodologies of the designer as technician underwent radical transformation; the most radical of these is probably the fact that designers have become empowered to simulate designs, layouts, environments, performances and objects. The development of holography can be seen as seminal in the inception of virtual reality creation. Holography involves the filming of scale models so that the surface of the model is subjected to light from a laser, creating a three-dimensional image in space.

CAM (Computer-aided manufacture), also emerging during the Sixties, involved more sophisticated computer control and was aimed at predetermined environments in which a series of operations are programmed into the computer and then endlessly performed and tirelessly repeated ([Rowe](#) 1986: 52). This is a facet of computer development that pioneered computer animation in which a series of actions can be programmed with the view to compiling a digital library of predetermined actions, movements and performances. (In [Chapter 4](#) this aspect is further explored with regard to the creation of believable three-dimensional virtual space and animated form, which raises basic questions regarding the real and the belief in appearances.)

CAM was further expanded into the field of micro- and mega-electronics, especially with regard to robotic applications. According to Christopher Rowe (1986: 52), the "essential difference between a machine and a robot is that the former is purpose-built to perform a specific task while the robot's microprocessor-brain allows it to carry out a series of tasks, and can be re-programmed to amend or totally change those tasks". Once the robot has been programmed it can execute its tasks with much greater precision and regularity than any human being. (Cf. [Chapter 5](#): the relationship of human beings to machines, as well as the implications of the last statement, will be investigated).

At the onset of the second half of the twentieth century, artists working with new media, that is, technological media, were seen as avant-garde. Artists pioneered aesthetic experiments with state-of-the-art technology and were especially enthusiastic about the potential of new computer technologies in terms of simulation and interactivity. The Japanese firm, Sony, which in 1965 developed portable video equipment (PortaPak), enabled artists such as Nam June Paik, generally considered the father of video art, to explore new dimensions of art and its

relationship to technology [Fricke](#) (2000b: 592). In the USA in the late Sixties and Seventies, many artists had the opportunity to apply their newly acquired skills in television studios.

During the Seventies art practice became strongly interdisciplinary and interfaced with industry, science and engineering, as evident in, for instance, Land art, Installation art, Video art and Performance art. During this period many publications saw the light, reflecting viewpoints on the role of the arts in science and technology and vice versa. Writers such as Marshall McLuhan, Buckminster Fuller, Norton Wiener and later Charles Snow, Frank Marina, Pierre Restany and Jonathan Bentall argued that an intimate relationship between art and science has come about and that the roles of artist and scientist have both become identified as modes of enquiry. A seminal work in this field is Jack Burham's publication, *The Effects of Science and Technology on the Sculpture of this Century* (1968). In this work Burham expressed the opinion that the traditional tools of art history and criticism -- stylistics, iconographical analysis, historical context and formal analysis -- had become insufficient and inappropriate for the explanation and understanding of the new art environment under siege of technology.

Now art does not come to us in a singular form such as an artwork of the previous century, but in manifold forms, mostly generated by digital technology. Visual culture dependent on technology now includes film, video, computer games, DVD, web sites and television programmes. While techno-art may appear to be new, the technology has in most cases been around for a long time. The utilisation of digital photography and video in art context, for instance, was derived from the imaging technologies developed in the mid 1960s for satellite surveillance and planetary explorations. Most Western artists are experimenting with new media, exotic technology, and inventive modes of access and avenues of distribution such as the Internet. Digital media are widespread and universally established as a prime form of visual communication and entertainment throughout the world.

A marked distinction between the computer imaging of the Sixties and the Nineties and the first century of the third millennium is that computer imaging has, through the development of user-friendly software, moved out of the domain of science and art and has now become domesticated and the common property of everyone, non-artists included. Another difference is that computer imaging has been appropriated by the mass media and is now determined by global entertainment giants. The 'staggering' range of options made available through computer technology has become a kind of paradise to artists and non-artists alike. Such paradisiacal 'plenty' is grounded in the Modernist notion of novelty. Yet, according to [Pomeroy](#):

While the marketed range of sophisticated devices available is staggering, aesthetics is hardly the motivating force behind high-technology research and development. In fact, much of our art is dependent on the spin-off utility generated by solutions to such artful problems as target acquisition (infrared and ultra-sonic sensing, thermal imaging, radar, sonar, and microwave, stereoscopic photography, gyrostabilised target designators or steady-cams, sound analysis by acoustic signature, signal processing, and image intensification), ... secure battle-field communications and management... and combat simulators (3D modeling, ray-traced animation, visual data bases and virtual space), to name only a few. ([Pomeroy](#) 1991: 271-72).

According to this view, contemporary information technology may be viewed as being produced to serve the needs of a profoundly militarised global system that has developed its own logistics and has become the dominant mode of the twentieth century. Often it is a case of hardware and software determining and delineating the boundaries of the creative process and eventual cultural texts. Such predetermination in choices (as referred to earlier) can be interpreted as part of what Marga Bijvoet (1990: 18) describes as the 'systems-aesthetic' inherent in the late twentieth-century culture industry, a concept she derived from [Jack Burham](#). This construct can be interpreted as yet another system within the culture of systems creation and analysis in a broad global spectrum of sciences and industries.

Within the context of system analysis cybernetics is relevant as the science of the organisation of information, based on mathematical formulae ([Bijvoet](#) 1990: 21). The systems-aesthetic entailed a move away from the precious high-art object to dematerialised works utilising new materials (often banal found materials) and new relationships between artist and engineer, for example. Bijvoet defines these developments as the Art and Technology Movement of the late twentieth century. She further identifies Billy Klüver ([Bijvoet](#) 1990: 21) as playing a seminal role in this movement in the USA since the late Fifties when he obtained a PhD in Electrical Engineering.

During the early Sixties, Klüver teamed up with Jean Tinguely as well as with Pontus Hultén, who became the director of the Modern Musset in Stockholm and later moved to the Pompidou Centre in Paris. Hultén was very interested in motion and organised an exhibition entitled Art in Motion in Paris in 1961. He assisted Tinguely with the development of his self-destroying machine and organised several other exhibitions including artists such as Rauschenberg, Jasper Johns and Claes Oldenberg ([Bijvoet](#) 1990: 21). These shows were entrenched in technology of various kinds. Klüver stated in 1966 that it would seem as if contemporary art (at that stage of the late Sixties) was in the same position that science had been in during the years between 1900 and 1910 ([Bijvoet](#) 1990: 22). To him there existed a 'right' and a 'wrong' science at that time, which now seems inconsequential. Klüver similarly identified that art during the late Sixties was fast on the way to losing its criteria of 'right' and 'wrong', and to becoming "an argument, an insult, a joke, a toy, a pastime or a sacred object" (Klüver in [Bijvoet](#) 1990: 22).

In October 1966, Klüver and Rauschenberg organised the event of *Nine Evenings: Theater and Engineering* at the Armory Building in New York. The idea of this project was to further the creative interaction between industry, artists and engineers. During this event some of the very first works in the late twentieth century dealing with virtual reality and sensory illusion were presented, such as Rauschenberg's Open Score. Rauschenberg argued that he intended the audience "to see the performance in reproduction only, via TV screens" and that he wanted to "destroy the audience's habitual response to live performances ... [and] present them with a set of sensory illusions" ([Bijvoet](#) 1990: 24).

Another project of Klüver and Rauschenberg in 1967 was the establishment of the organisation, Experiments in Art and Technology (EAT), which was proclaimed as extremely avant-garde for its time. This organisation once again wanted to further the interaction between industry, technology and the arts. They wanted to promote the creation of new art through new technologies and endorse a high standard of technical

innovation in collaborative projects. They believed that these efforts benefit of society as a whole. By 1972, EAT had become less directed at the artistic society and more at the fields of science and engineering.

This ideal of a network of artists as postulated by Klüver is utopian in nature and grounded in global theories of benefit for universal humankind and transnational groupings. It would seem, however, as if Klüver's ideal remained just that - an ideal. Art did not change societal structures and the scientific and corporate-industrial communities of today are just as wary of artists as before ([Bijvoet](#) 1990: 35). Furthermore, many of the artists who embrace new technology and media, do so at the risk of low sales and a marginal income, although artists who produce for the corporate domains mostly earn far more. Many artists utilising new technologies have little or no grasp of the inherent properties, programming requirements or demands of such tools and processes; they become 'directors' of the artwork and employ technicians to execute the technical dimension of the work. However, they never really become either technicians or craftsmen in the traditional senses of the words, or scientists in the sense of having a full grasp of the technology, means and processes involved. Nonetheless, although contemporary techno-artists may not fully participate in the technique of their trade, they nevertheless fully engage in the intellectual and conceptual making of the work.

In the group of computer-generated images, Figure 39, the new character and function of art is clearly illustrated. Sophisticated computer technology allows any person to create images in which traditional aesthetic criteria and depth in conception have become irrelevant. The intention of the image is enough to merit its creation. In order to comply with the ever-increasing demand of the media market of advertising, computer games and the Internet, art has shrivelled into mere 'making pictures', mostly of a fantastical and virtual nature.

According to [Pomeroy](#) (1991: 277), technological art is also not likely to fulfil the traditional aesthetic criteria of 'timeless art', since a good deal of the art produced with advanced technology can become obsolete quite quickly. Or its novelty will fade "in the wake of new, glitzier toys rolling off the assembly line" ([Pomeroy](#) 1991: 277). It must be accepted as a given that gadgetry, also computer techniques, for its own sake will not have lasting appeal.

3.8 Technology as threat

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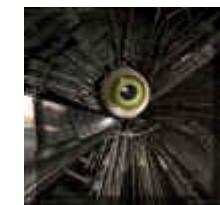


Figure 41

Group of computer generated images
([Kinetix](#) 1999)

Arguments against the infiltration of technology in every sphere are in direct opposition to technology ideology. The idea of technology as threat is not new and has been notably demonstrated in the section on [dystopia as catastrophe and nightmare](#) in Chapter 2.

Translated into terms of societal conditions, the issue of the threat of technology has been the source of many publications especially since the 1970s, although writers expressed concern about the technological threat as early as the late nineteenth century. It is already encountered in Samuel [Butler's *Erewhon*](#) and *Erewhon Revisited* (1872). In these works, machine culture is already portrayed as menacing.

In *The Third Wave* (1980), Alvin Toffler, in his deconstruction of third cultures of the postindustrial world (as referred to in the section on [Global culture](#) in this chapter), argues that the supporters of new technologies reveal a kind of thinking similar to that of the so-called Second Wave ideological thinking about technology encountered during the Industrial period (1980: 128). In this mindset a mindless approach to technology is found which does not take cognisance of the many negative social implications of a technology-driven society, such as the social disruptions that have occurred as a result of new technologies.

It is especially within Existentialism that technology is experienced as threat, since the determining questions within existential thought are: 'What is the world?', 'What are human beings?', 'Who am I?' and 'What constitutes Being?'. These questions have been historically prepared by German philosopher Friedrich [Nietzsche](#) (1956) and were radicalised by poststructuralists such as French theorist Jacques [Derrida](#) (1976, 1978, 1981, 1982, 1987) and British theorist Jonathan [Culler](#) (1983). According to Nietzsche the above-mentioned paradigms induce a loss of power and the destruction of 'truth' of being. Instead, he posits the will to power that is to be found in so-called 'natural' values.

The phenomenological method which is central to existentialism as encountered in the philosophy of Heidegger in particular, departs from a global approach in which individual experiences are of less importance than the relationship of world to being. The method works in a technical way by asking certain questions in order to identify and analyse situations that can contribute to the understanding of the self. Catastrophes, apocalypse, absurdity, the life-death relationship, suffering, and so forth, provide information that can illuminate the relationship of being to history, time and the world. Within this paradigm the impact of technology is experienced as a threat, since it disturbs 'natural' facets of being and leads to dehumanisation in general. Ellul has conducted an in-depth analysis of the effects of standardised culture on the future of human beings and sees it as a 'dismembering' and 'profound mutation' of being (Ellul 1964: 431). In a continuation of the critical attitude towards the notion of progress as initiated by Nietzsche, Ellul is of the opinion that:

One of our best-known specialists in diseases of the nervous system writes: "We will be able to modify man's emotions, desires and thoughts, as we have already done in a rudimentary way with tranquilizers." It will be possible, says our specialist to produce a conviction or an impression of happiness without any real basis for it. ... The last meager motive we could possibly ascribe to the technical adventure thus vanishes into thin air through the very existence of technique itself ([Ellul](#) 1964: 436).

Such a negative view of technology is counteracted by the positive views of many other theorists. Paul [Brown](#) (1990: 236) argues that, "[the] 300 year stranglehold of Romanticism, the view of the artist as alienated outsider, preoccupied with their own obsessions, that has culminated in the petulant absurdities of post-modernism can be brushed aside and the artist can once more look forward to a central role as contributor and initiator". He further foresees that the tight human-computer symbiosis should lead to a close creative collaboration between human and machine. In this sense today's artists can be viewed as the alchemists of tomorrow.

Since technology's advances, such as the splitting of the uranium atom, hold immense threat to the earth and its inhabitants, for some technology has become a Goyaesque monster. Yet it is also a fact that a basic need such as the feeding and sheltering of the earth's current population cannot be fulfilled without the present advanced levels of technology. [Wallerstein](#) (1990: 49) refers to the "seesaw of ideological explanation" that continues into a hypothetical future. Within this pattern some explanations have been more individualist, others more entrepreneurial, others again more 'modern'.

Technology therefore seems to embody *both Cain and Abel*, murder and deliverance, and it is this duality that is coiled in the figure of Spider-Man. It cannot be denied that technology has increasingly been idealised and hailed as the modern-day saviour, a kind of Spider-Man. At the same time, the metaphor of the spider may be interpreted as, on one hand, representing the noble worker, whilst on the other hand, provoking threat. In Anselm Kiefer's installation, *Breaking of the Vessels (Bruch der Gefäße)* (1990), Figure 42), as in many of his other works from the Nineties onwards, such ambivalence with regard to technology is expressed (cf. Figures [11](#), [15](#), [16](#) and [21](#)). Through the artist's use of technological media such as iron, lead, copper-wire and glass, he, like many other late twentieth-century European artists such as Jannis Kounellis and the ecofeminist artists, articulates his acute awareness of the threat of nuclear power and other technological dangers in the wake of Europe's recovery from technological warfare during the Second World War. It is an infinitely more sensitive issue for the Germans in the light of Hitlerism and unacceptable methods of racial extermination such as gassing. The broken glass communicates the 'shattering' and devastating consequences of technology applied in a negative sense, as well as the crushed German identity.

At the same time, in his use of lead in this and many other works, Kiefer expresses the view that technology (in the metaphor of lead) can provide a kind of shield, a 'security blanket', against disaster and catastrophe (lead is the only metal that provides protection against the fatal impact of nuclear weaponry), thereby suggesting that some solution must be found to prevent such disasters in future. Since the onset of his artistic career, Kiefer has displayed alchemical thinking in his work. Lead is the *prima materia* in this paradigm and the matter that mobilises positive energy. In "Canticle for a God unknown", an essay in the catalogue for the exhibition *Lilith* (1990 - 1991) during which *Breaking of the Vessels* was exhibited, Doreet LeVitte Harten interprets the work as fragmented



[Figure 42](#)

Anselm Kiefer,

Breaking of the

Vessels (1990)

([Anselm Kiefer](#) 1991: 16)

and "disenchanted" and the breaking of the glass, symbolic of the vessels, as "cosmic catharsis" and the visual translation of mythological sequences ([Anselm Kiefer](#) 1991: 13). In this sense the traditions of mythology, including belief, and science as technology converge.

In the late twentieth century, a threat is also posed to the ancient relationship between art and technology. When looking at art and definitions of art, the millennium 2000 is already seeing a redefinition of the epistemology and the place or function of art. The issue of painting as artmaking medium is a good case study in this regard. Donald [Kuspit](#) (2000: 1) argues that to many contemporary theorists, [painting](#), traditionally one of the oldest and most revered artmaking media, ought not to exist because it is made in an old-fashioned way by hand. The so-called 'new media', that is, technological media, can do everything faster and better, and can create a likeness so much more readily and easily.

Darley argues that there is a danger inherent in the redefinition of art in a technological context, that is, mostly computer technology in mass media context, in that art can easily lose its integrity and become characterised by "an unquestioning and celebratory acceptance of the potential of the computer" ([Darley](#) 1990: 40).

Moreover, modernist aesthetic concern with pure formal visual play also frequently gets grafted onto partially grasped or fashionable interpretations of poststructuralist/modernist theories. These themselves conveniently appear to uncouple representation from other important aspects of the social world - the economic and the historical for example ([Darley](#) 1990: 40).

In Africa the relationship between art and technology has shown a radically different history to the rest of the so-called First World. A relatively small section of the population has personal computers. The schism that has always existed between first and third world forms of art production has become far wider because of new developments in technology and will become even greater in future. In rural and traditional environments, especially in Third World countries, art production is still mainly functional and/or aimed at a tourist market.

3.9 Predicting the future

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Before proceeding to the next chapter and the investigation of dystopia, it is relevant to consider utopists' and technothorists' predictions about the future, since utopia is a future construction.

According to Nowotny, science has *moved ahead of its own future* as imagined by society: "[the] category of future has been reduced to that of an extended, if not instant, present" ([Nowotny](#) 1984: 15). The utopian imagination in the context of science and technology has therefore created a time-disjunction and an awkward situation in which the logic of cause and effect as well as of time has been subverted.

According to Nicholas Negroponte in *Being Digital* (1995), the next decade will probably be almost obscene with a total invasion of privacy. There will be:

... digital vandalism, software piracy, and data thievery. Worst of all we will witness the loss of many jobs to automated systems ... [and] an entire sector of the population will feel disenfranchised. ... Bits are not edible, they cannot stop hunger. ([Negroponte](#) 1995: 227 - 228)

This, however, will not happen in Africa. It is indeed so that there is division regarding the pros and cons of technology. It seems to be a choice between the 'old' non-technological, alternatively phrased as the 'natural' world and the mechanical, technological, 'new' world; perhaps more accurately, human beings in competition with machines. Negroponte's words (1995: 6 - 7) reflect this new content, a fundamentally materialistic orientation:

Computing is not about computers any more. It is about living. The giant central computer, the so-called mainframe, has been replaced by personal computers. We have seen computers move out of giant air-conditioned rooms into closets, then onto desktops, and now into our laps and pockets. But this is not the end.

Early in the next millennium your right and left cuff links or earrings may communicate with each other by low-orbiting satellites and have more computer power than your present PC. Your telephone won't ring indiscriminately; it will receive, sort, and perhaps respond to your incoming calls like a well-trained butler. ... As we interconnect ourselves, many of the values of a nation state will give way to those of both larger and smaller electronic communities.

As the world globalizes and the Internet grows, we will start to see a seamless digital workplace. ... bits will be borderless, stored and manipulated with absolutely no respect to geopolitical boundaries. In fact, time zones will probably play a bigger role in our digital future than trade zones. ([Negroponte](#) 1995: 228)

In the seamless workplace and cultural domain, a flattening of differences is in many senses taking place. People have become alienated from their natural environment and displaced in an artificial world dominated by machines. The questions of limitlessness and organic death enter the debate. [Wallerstein](#) (1990: 49) notes that even the wealthiest and strongest of states have risen and declined. Daniel Bell argues that for most of human history, reality was nature, but that during the twentieth century, reality became "technics, tools and things made by men yet given an independent existence outside himself, the reified world" (Bell 1973: 488). He argues further that:

[utopia] has always been conceived as a design of harmony and perfection in the relations between men. In the wisdom of the ancients, Utopia was a fruitful impossibility, a conception of the desirable which men should always strive to attain but which, in the nature of things, could not be achieved. And yet, by its very idea, Utopia would serve as a standard of judgment on men, an ideal by which to measure the real. The modern hubris has sought to cross that gap and embody the ideal in the real; and in the effort the perspective of the ideal has become diminished and the idea of Utopia has become tarnished.

Will the rational project of advancement continue indefinitely? The impossibility of answering this question lies in the aspect of the endless choices brought on by science and technology. Scientific innovation remains unpredictable and open-ended.

3.10 Conclusion

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I conclude with the statement that the processes of industrialisation and technologisation that started during the nineteenth century and are continuing in the twentieth and twenty-first centuries, have had a major impact on patterns of cultural production. In particular, the following has happened:

- (a) It can be postulated with certainty that the new technical developments, like a kind of Big Brother, at present control and dictate the evolution of mind and world, also the art world, since it has been established that technical invention is the mainspring of everything else. It determines culture, creates conditions, guides thought and deconstructs ideologies.
- (b) In the late twentieth century, the use of new technologies in Western visual culture can be interpreted as the new avant-garde. Through communication technology such as the Internet, knowledge and information has become available to all, unknown territories have been uncovered, ancient documents can be deciphered through laser techniques, the histories of all people can be traced and studied and the present making of history can be shared by all.
- (c) Technology has developed at a dazzling speed into a force that unites and flattens differences through systematisation. Ideals of globalisation and a new singularity have emerged, premised in the notion of empowerment through the spread of information and knowledge. As a result, mutations in cultures, traditions and thinking that generate dynamic diversity in being, have been lost. Therefore, such ideologies remain problematic.
- (d) Technology has changed the function of art in the sense that, although art has retained many of its previous functions, through the emergence of computer technology it has in addition acquired a new function of providing entertainment for the masses, grounded primarily in the principle of pleasure.

Utopia is still articulated in the late twentieth century in the sense of the Western belief in scientific advancement and technological progress. Machine culture is still the product of progressionist ideology and human invention, and is controlled by human beings. This aspect will be further illuminated in [Chapter 5: Dystopian being](#).

In the next chapter, [Chapter 4](#), dystopian representations of the real in the late twentieth century and the impact of technology on perceptions of the real will be further investigated.