

**FROM BODY TO HOLOGRAM.
FUTURE THINKING AND ETHICAL ASPECTS
OF USING BODY IMAGE IN ENTERTAINMENT INDUSTRY**

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***Abstract:** The present paper is set to investigate the nowadays trend of the technological (holographic) resurrection of celebrities in entertainment industry. The main components of the paper are the inventory of signals in this direction and the ethical considerations. Moreover, we present four futures images, four alternate scenarios of the possible future development and implications of resurrecting celebrities for entertaining purposes. Starting from the nowadays “weak signals” we envisage, our scenarios investigate the extent the phenomenon might take in the nearest two decades. Several questions arise by doing so: What might be the consumers’ perspective on commercially using holograms of deceased celebrities? Is it ethical to commercially use the image of a dead artist and to bring it on the market? Does the possibly indefinite reuse of holograms alter the chances of having new faces in the field? Are we facing a possible gender-based bias? Are women-celebrities more prone to be “brought back”? We are trying to give account on the challenges and conditions in which this new phenomenon is taking place. The examples we selected to illustrate the scope of the paper are both tackling eastern and western perspectives.*

***Keywords:** holographic resurrection, Asia, entertainment, ethics, futures images;*

1. Introduction and background

Future thinking has always been a part of history. However, it is not until the recent few decades that it emerged as a scientific discipline (Masini, 1993). The present paper will look into the future use of holograms representing deceased celebrities. As far as the field of futures studies is concerned, many people might hold a skeptical point of view and associate it with the ancient “fortune-telling”. Some may naturally assume futurists’ tasks as merely “predicting”. As renowned futures researcher Jim Dator clarifies, futurists’ task is not to predict the future, but to forecast alternative futures for study and evaluation. We aim to help people envision the possible and preferable futures, and we do so on a continuous basis as new technology, information, opportunities emerge (Dator, 2011). The current human society embraces rapid interrelated changes, in Finnish futurist Pentti Malaska’s words, we are at the threshold of “unprecedented ignorance of unknowns”. Science and technology have drastically improved people’s lives while bringing changes to our current and future society, that is the “unconquered fields of unknowns” (Malaska, 2002).

This paper aims, on one hand, to integrate futures thinking with using body image as a social topic, hoping to bring a new perspective to the on-going studies; on the other hand, it aims to exemplify how futures studies method (images of the future) can be applied to analyzing the impacts the use of technology (hologram, in

our case) will have on the entertainment industry and our society in general. The study is conducted through the following steps: first, an overview of the current developments; second, an evaluation of such developments. The first two steps aim to crystallize the causes and consequences of the investigated issue; last but not least, images of the future are produced to envision possible futures (the use of the plural here is, therefore, not arbitrary). Hopefully this study can raise the future consciousness and ethical awareness of the organizations as well as individuals involved, hence, they can eventually be guided towards the preferred futures.

We, therefore, commence by presenting the background and the signs (maybe signals) indicating the uses of holography in entertainment industry; we call this “resurrecting celebrities”. Holography, as technological method, is going a few decades back and our focus in this article is not to tackle the technological aspects. We are interested in depicting how holograms may become forms of artistic representation, with or without commercial value, with emphasis on women’s bodies, while having in mind the ethical considerations regarding this whole process. The futures images concerning this phenomenon and the ethical implications will be dealt with later on in the paper.

Before moving on to concrete examples in entertainment, we have to make one general and one terminological distinction. First, we will not cover any technical aspects related to holography. Second, we observe in colloquial speech that the term “hologram” is attributed also to technological endeavors that are actually limited to complex projections on semi-transparent screens or to the use of volumetric displays which generate 3D imagery and are therefore referred to as “holograms”. It is not the scope of this paper to cover all distinctions and terminology. As consequence, whenever we use the terms “hologram” or “holography” we are using them in the broad, everyday’s meaning; so as they are understood by general public and media.

1.1. Marilyn Monroe: symptom of a trend toward “celebrity resurrection” through media

As starting point, we chose the recent advertising campaign led by the famous French luxury cosmetics brand Chanel. In recent November 2013, the legendary fragrance Chanel 5, a long-lasting traditional brand, after years of having international stars as product images, decided to turn to Marilyn Monroe, symbol of mid 20th century and the most influential and popular feminine personality of contemporary times.

Although not illustrative for the main topic of our inquiry, we chose to start our research with this emblematic example, as we consider it meets all the requirements for an investigation. Beyond costs and market studies, the 30 second advertisement is featuring short actual videos of Marilyn and, most importantly, a recently unearthed audio track where she is mentioning using the fragrance. Corroborated with the only picture ever of the star holding a bottle of Chanel 5, the resulting illusion, although in 2D, is that of an immortal entertainment icon in close relation with a product. Media was extremely responsive to this new campaign. *Elle UK* magazine talks about “the recent unearthing of a previously undiscovered recording of Marilyn Monroe has propelled the late actress into the spotlight once again, more than 50 years after her death” (Collins, 2013).

The recently made famous picture presents a sensual Marilyn experiencing pure enjoyment by using the fragrance. Revealing ample skin areas, the half empty bottle, the sensual touch, the act of mirroring, everything is conceived in such a way that audio track becomes more illustrative. “Narrating the iconic footage is the starlet herself, who is heard uttering those internationally-recognized lines from her famous 1952 interview with Life Magazine, where she reveals her love for the iconic perfume: ‘Marilyn, what do you wear to bed? So I said I only wear Chanel No.5’, she whispers” (Munson, 2013).

However, the whole conversation was not known until recently. Here is the transcription: “You know, they ask me questions. Just an example: ‘What do you wear to bed? A pyjama top? The bottoms of the pyjamas? A nightgown?’ So I said, ‘Chanel N°5’, because it’s the truth... And yet, I don’t want to say ‘nude’. But it’s the truth!” (Collins, 2013).

The relation between the nude body, intimacy and fragrance is obvious in this advertisement, which is a new product using preexisting media resources. Despite careful concealing of any indecent nuances, it is rather transparent that the message conveys quite bluntly the idea of nude female body to the consumer. Marilyn will be also the object of a holographic initiative, as we will see later on.

1.2. Present day “weak signals”. Overview of the first uses of holograms.

In this brief overview, we are planning to present a few examples categorized in function of addressability: museums and artists on one hand and entertainment on the other. We present both female and male examples in order to get a more coherent picture of the phenomenon involving holographic use of, mainly, music stars.

1.2.1. Artists and museums

The weak signals of the use of holography in art are going back several decades. In fact, the first world known artist to ever use holograms was Salvador Dali, at the beginning of the 70’s. He welcomed this new possibility of expression when it was presented by the South African artist Selwyn Lissack: “In 1971, we approached Salvador Dali with the concept of working with him, in the realm of creating a number of holographic works of art. Dali was delighted with this offer, as he has spent a lifetime in pursuit of other dimensions” (Lissack&Lissack, 2012). On this occasion, we identify the main reason behind the popularity of holograms: going over the limits, both in art and entertainment. No wonder that “no longer confined to the limitation of a two dimensional surface, holography presented the opportunity for Dali to symbolically recreate his views and perception of other dimensions within our own reality of space” (Lissack&Lissack, 2012). Otherwise said, imagination and reality are brought together by the artist using holography. We argue that this very idea contains the potential of uncountable future developments in this field. The temptation of going over pre-established frontiers, using every day more advanced technology is likely to trigger extremely diverse scenarios. The past four decades since Dali’s immersion in 3D art have brought several other ventures in holographic performance.

The MIT Museum features a famous collection of holograms. Today, the MIT Museum has the largest and most comprehensive collection of holograms in the world. “The full range of artistic possibility is apparent in the works of such internationally-recognized holographers as Margaret Benyon, Rudie Berkhout, Harriet Casdin-Silver,

Melissa Crenshaw, Setsuko Ishii, John Kaufman, Sam Moree, and Dan Schweitzer. In addition to holograms, the collection includes the archives of New York's Museum of Holography (MOH). The archives document the administration, collections, artists, exhibitions, educational and artist-in-residency programs"¹.

By getting closer to the entertainment area, we mention here another museum, this time in Europe that started featuring in 2013 holographic projections of the world famous Swedish band, ABBA. The museum in question is located in Stockholm and "visitors will also be able to sing Abba songs alongside life-size holograms of the group" (Trott, 2013).

1.2.2. Entertainment.

During recent years, there have been recorded several attempts of using (so-called) holograms especially in music industry, with emphasis on live sessions featuring celebrities. In 2012, the deceased world-famous American rapper Tupac Shakur makes appearance on stage at Coachella Valley Music and Arts Festival. Again, it was not technically a hologram, but that was the way it generally has been referred to. Media largely documented this case where "hundreds of thousands of onlookers reveled in seeing one of hip-hop's greatest performers seemingly brought back from the dead" (Gardner, 2012a). The same source points out the immense potential of this new technology with application in entertainment business. Next big hit could seemingly be the above-mentioned starlet, Marilyn Monroe: "a 'live' Marilyn Monroe concert is being planned to take place before year's end with the working title *Virtual Marilyn Live - A Musical Celebration of the Birth of the Pop Icon*. The concert will feature the projected blond bombshell singing and interacting alongside live music stars" (Gardner, 2012b). The other all-time symbol in music industry, Elvis Presley, is also on the track to be holographically resurrected: "Digital Domain Media Group's deal to develop an Elvis Presley hologram will open up new growth opportunities for the visual effects company" (Szalai, 2012).

Using the same Tupac episode as topic opener, McCormick (2012) has a broader view on this phenomenon, bringing forward the ethical aspect: "It was weird, compelling, and scary. But what is really scary is thinking about what it means for the future of live entertainment" and "now with this new holographic projection technology, the dead stars will really be able to front their own posthumous revival. The only limit is the conscience of the rights holders. When you can see John Lennon advertising Citroën cars, it's hard to have much faith in the notion of any dead artist's wishes being respected by his estate" (McCormick, 2012). There are two sides to this approach. First, the prevalence goes to deceased stars; it has been proven that death only increases the popularity - consequently we are dealing here with possible resurrections of female stars like Janis Joplin or Amy Winehouse. On the other side, living stars could tour as holograms, an initiative which would render useless any other arrangements: "When contemporary pop stars like Britney Spears can tour with pre-recorded backing vocals and no band, the question of what constitutes a live show is increasingly moot" (McCormick, 2012).

A further step which is about to be taken, so far only experimentally, concerns

¹ According to the website of the MIT Museum:
<http://web.mit.edu/museum/collections/holography.html>

adding to the holograms a haptic dimension, a sense of touch in other words. Holograms are already incredibly appealing; the 3D dimension is spectacular for a large part of the audience. Upgrade all that to the haptic level, provide the user/audience/general public with the ability to actually feel their idols and we will start to more clearly see the potential of this developing technology. Traditional holography is by default restricted to a passive, non-interactive state. What are the new challenges once interaction (verbal and haptic) is enabled? We are here far beyond the field of entertainment, we are dealing with potentially elaborate social or educational uses. To conclude, “now research is being conducted on the idea of ‘mutual touching’, where a human can reach out and physically touch a hologram. The human would also feel a sensation in return, such as their hand being squeezed by the hologram. Basically, it would amount to a robotic interaction without all the metal gears” (McGough, 2013). The extent of risks and pejorative uses is implicit, yet unknown.

1.3. Teresa Teng - revival for entertaining purposes.

We are now about to tackle another example of the use of holographic entertainment. We have to state here that holograms or other kind of (3D) projections are primarily dealing with female body representation. Statistically, there is prevalence toward bringing back female stars. In our example, a former Asian singer, Teresa Teng, is being resurrected 18 years after her death and transposed onto nowadays’ stages.

The same corporation that resurrected Tupac (Digital Domain Media Group) and has serious plans about the iconic Marilyn and Elvis, has also contributed to a successful revival story on Asian continent, in Taipei. The famous Taiwanese female singer Teresa Teng, deceased in 1995, performed together with the (living) male star Jay Chou at sold-out concerts in 2013. This happens in a context where “digital apparitions of deceased pop superstars are now haunting stages worldwide” (Brzeski, 2013). Regarding Teng, “*Time* named her one of the world’s top seven female vocalists in 1986. She was extremely popular across East Asia” (Bischoff, 2013).

Before designing a hologram of her, a process of selection has been put in place. Age, make-up, outfit, hair style - a few considerations that have to be dealt with before appearance on stage. What normally in real life stars’ career is undertaken by a team of managers, producers, stylists, in holographic production these tasks are relegated to other kind of specialists.

2. Method. Future images of the use of holograms. Ethical aspects of reviving celebrities.

The first chapter provides an overview of the current use of the hologram, specifically, how celebrities’ image is diffused and reflected through this technology. Due to the lack of standard social research literature on the chosen topic, the overview chapter contains information from scientific articles and web pages, which guarantees a wider perspective of this research. The major tasks of futurists are clarified in the beginning. However, as ethics is the key issue concerned while creating the images of the future in this study, we have to first take a look at the reasons for situating ethics as the key issue.

The philosophical nature of ethics concerns what is morally good or bad, it is one of the criteria to morally evaluate people’s intentions and behaviors. Ethics

associates with a broad range of meanings. As early as futures studies emerged as a scientific discipline, the pioneers already placed ethics of futures studies as a “moral obligation” that futurists should address. Futurists, as individuals, or “consultants”, or advisers that help the organizations or individuals, should follow the “the code of ethics”. Besides fulfilling the contracts on a pragmatic and moral ground, futurists should think, above all, what to study and how to study in order to ensure the benefits of mankind and public interest (Bell, 2002, pp. 159-160). Echoing the ethical debates of the use of celebrities’ body image in mass media, for instance, this study finds an interface between celebrities’ image and futures studies. The basis of such interface is hologram as a technology and the use of this technology determines morally good or bad outcomes. As Jim Dator pointed out, technology is a tool that has no effect on human nature; however, inappropriate use of technology will be harmful and cause bad consequences. Fortunately, once the evil is identified, the problem can be corrected (Dator, 1983).

2.1 Images of the future as a research method

As it is clarified in the beginning of the paper, the essential tasks of futures studies is not to predict the future, but rather forecasting or envisioning the different states of the future, echoing one of the principles of futures studies: there is not one future, but many possible futures (Masini, 1993, p. 8). Thus producing images of the future is a creative task that facilitates the future envisioning. “The images of the future are mental tools that deal with possible future states. They are composed of a mixture of conceptions, beliefs and desires and they affect human choices and steer decision-making and actions” (Rubin & Linturi, 2001).

The definition of images of the future by Rubin and Linturi emphasizes again the “multiple” nature of the future. Meanwhile, it reveals the utilization value of the images of the futures, it helps the decision-makers to identify the possible opportunities and risks that come along with different future states and serve as a basis to visualize the desired state of futures to build a pathway towards.

Shefrin (1986) also defines images of the future as “an expectation of some futures states of affairs”. The interesting term of “expectation” used in this definition orients images of the futures towards “desired or preferred” futures, which means images of the future might not totally avoid subjective ideation. However, this conceptualization of images of the future remains the central idea of futures studies, envisioning what is possible rather than predicting what is certain. Shefrin also summarized the application value of the images of the future as influencing all aspects of the society, for instance, attitudes, actions and so on; moreover, our future will be understood and guided in the light of the images (Shefrin, 1986). Hence, the four images of future presented below are four different future states. They each present a “complex whole” which combines various sources of information and different perspectives with a focus on the ethical thinking. The creation of the four images follows Jim Dator’s systematic categorization of the possible states of the future: Continuous Growth, Collapse, Disciplined Society, and Transformation Society (Dator, 2011).

2.2. Futures Images to present 4 different future ethical states of holographic resurrection

The following part of this chapter is to present four different, progressive

future images in which the use of holograms in entertainment industry is portrayed. Nowadays, holograms are in use on a current basis and therefore we categorize this use as “weak signal”. However, it may not yet be a trend. The main questions raised are: “*Is the use of holograms a developing trend or rather a dying weak signal?*”, “*How celebrities’ image is going to be exploited in the future in each image?*”, and, ultimately “*What is the ethical edge of the content of the research or of the research itself?*”. Our small scale think tank is composed of educated participants, with ongoing studies in futures field. There is no territorial delimitation to these images, and the envisaged time frame is situated along the 2020-2030 decade.

The guidelines of each image are as follows:

- a. The ethical (and gender) component. Conceptually dispersed, it is however the starting point of our inquiry. A priori, the feminine body is the most prone to be used in most cases. Gender issues arising.
- b. Number and control. The images present the alternative of a single existing copy (a single available hologram) and the mass (and perverted) use of holograms. Control degree ranges from full (authoritarian preservation of copyright) to nonexistent (copyright infringement and full scale piracy).
- c. Use and consequences. What are the unexpected ways of using holograms? The gradual move from (insignificant) entertainment to mass manipulation and collapse.

Image 1: Ethical. One copy. Controlled. Entertainment. (disciplined society).

Fully optimistic and positive, the first image is displaying a totally responsible use of holograms in the near future. The national broadcast company or any other, but unique, owner of the license is aware of the importance of keeping a tight control on the use of the single allowed copy. The hologram may portray a former or actual star of national or international entertainment industry, a sportsman/woman or news anchor; briefly a celebrity, deceased or alive, younger or older. The use is exclusively for entertainment purposes, deprived of any social or political relevance. It provides pure enjoyment at a restricted scale.

Image 2: Ethical. Multiple copies. Controlled. Several accredited companies. Entertainment and social/educational purpose. (continuous growth)

The second image allows a broader use of holograms; therefore several copies are in use at the same time. However, only a few accredited companies are entitled to use them, under the close supervision of governmental agencies. Mainly used in entertainment, just as the previous image. In addition to that, social benefits are added. Holograms are used as motivational materials (treatment and counseling for patients struggling with body image issues and other psychological deficiencies). Education institutions are also potential beneficiaries (faculties of medicine, anatomy courses). Celebrity of the holographic man/woman is not mandatory in this case, but it greatly improves therapy outcomes and has high motivational relevance.

Image 3: Unethical. Mass use. Signs of losing control. Household use (abusive). Excessive marketing. Partial political influence. (transformation)

Third image involves economic interests. The potential of using holograms beyond controlled entertainment and social benefit is growing. Licensing is facilitated by

legal loopholes and companies are exploiting this situation. The circulating copies cannot be accounted for. Centralized control is difficult to maintain. Companies are making the holographic product accessible to anyone and they loosen the restrictions. Privacy concerns are arising; legal issues concerning copyright infringement are as well. The product security is flawed, viruses may be present, the system is jailbroken. Signs of abnormal and abusive use are visible (3D pornography). First signs of political involvement.

Image 4: Unethical. Generalized use. Lost control. Mass manipulation. Political influence. (collapse).

The fourth image is presenting the collapse of the industry and the downturn of a hypothetically harmless technology. Both centralized and individual use of holograms are out of control. No effective legal frame in function. The technology is used in any possible field, the market is saturated, political abusive use is on daily agenda. Due to multiplication pattern, there is absolutely no chance to promote new faces in entertainment. The universal recipe is to redesign an initially famous female celebrity. Celebrity inflated market is blocking further development. Confusion in education area. Identity crisis. Plastic surgery rates are growing exponentially as consequence of flawed individual body image appraisal.

3. Ethical considerations

3.1. Validation of the Future Images - ethical issues about the research

Future studies is the “normative activities” that aim to give recommendations for the future through examining, evaluating and proposing preferable futures. Thus, futurists need to know what is right and what people think is right (Bell, 2004). In order to validate the value assertions, futures research, as Bell recommended, need to follow certain models of objective assessment of value judgments. For example, Keekok Lee’s epistemic implication model is a promising tool to judge preferable futures through elaborating the “what is now” elements according to five criteria, which include serious reasoning, referential relevance, causal relevance, causal independence, and empirical truth. Fulfilling such criteria, a tentative judgment can be made whether the “what is now” element can be adequate to back up the value assertions.

Moreover, futures research, as well as social research in general, often involve the “cause-effect” problems reflected by the basic approach of “what is now” and “what is ought to be done.” As David Hume claimed, “there are no objects which by the mere survey, without consulting experience, we can determine to be the causes of any other; and no objects, which we can certainly determine in the same manner not to be the causes” (Hume, 2007). This argument of Hume implies that there might not be strict logic between the observed event (what is now) and the future (what is ought to be).

Both the argument of Hume and Bell, “objective justification” of “what is reasonable to believe” and “what is morally right”, require careful consideration when validating an argument during futures research. This sets the basic line to be followed by futurists.

The research presents four alternative futures for celebrities' image driven by modern technology, holograms in our case. It attempts to base the images on the researched drivers and validate the future arguments on various perspectives and cases. However, due to limited amount of academic research and information, further analysis and other sources like deeper social impact research are needed in the future in order to totally overcome the ethical issue of validation of future arguments.

3.2. Specific ethical issues involved in researched case

The chosen case demonstrates a high relevance of ethical issues, centered on the use of celebrities' image through holograms and its consequences. The center of the ethical concern is to what extent we should put this technology into practice, namely which is the preferable future.

Mill proposed the fundamental principle of morality; that is "actions are right as they tend to promote happiness, wrong as they tend to produce the reverse of happiness" (Feldman, 1978). The utilitarian value of the hologram is clear: it brings back the deceased and satisfies people's desire of happiness.

Some of the cases above demonstrate "stereotypically perfected" body images of women. The body images portrayed in conventional mass media assume a sexual role; namely, it has been generally argued in mass media that body images of women are perceived as sexual objects, exemplified by the high level of improper dressing style of women, for instance in advertisements. The potential ethical issue of using holograms to portray women's body image is to what extent this technology should be used and how the body images of women will be portrayed with such technology that will bring any desired figure in a multi-dimensionally accessible way to people. A moral issue situates itself in the image where the use of hologram is easily accessible to every household and therefore may lead to abusive behavior towards the holographic women (holographic male celebrities not being excluded). This is certainly unethical, but if one should treat the holographic image as a person remains debatable.

Besides the image *per se*, another ethical issue comes in the content perspective. The holographic figures can speak, but do they really? What will the holograms of deceased figures tell audiences/consumers? Currently, for the cases of Marilyn Monroe and Teresa Teng, their original voice and content of speaking has been respected. They are both limited at better connecting them with the audience through a combination of their recorded speech and newly generated holographic images. But will this be the case when holograms are used in households? Will it be considered legal or not to be able to customize the speech when using the hologram of a deceased person? What will happen if this is used out of political incentives? Situating this new technology into current society, many ethical reasonings need to be done and this will trigger more debates. However, as Kant's categorical imperative suggests, "an act is morally right if, and only if, the agent refrains from treating others in way he would not want the others to treat him" (Feldman, 1978, p. 97). This sets the basic line when evaluating an ethical issue.

4. Conclusions

Technologies have the potential to drive the fundamental changes of the society. This is already proved since 1780 when the steam machine led to the so-called first Kondratieff wave, which implies that technological innovations have the ability to penetrate into the social and economic systems. Holograms, although they still seem to be a weak signal, have the potential to enhance the “productivity” of media; that is information will be diffused in a more effective way. This is illustrated through the researched cases where the body image of women are propagated in a more innovational and productive way.

One of the roles of the futurists is to provide social background and make preferable future recommendations, which requires telling the rights and wrongs in the current situation and propose a preferable future. In the case of holographic resurrection of renowned figures in entertainment industry, the ethical issues need to be taken into consideration, both in the perspective of the case itself and from the futurist’s point of view.

References

Books and articles

- Bell, Wendell (2004) *Foundations of Futures Studies: human science for a new era*. Vol. 2. Values, objectivity, and the good society, New Brunswick, NJ, Transaction Publishers.
- Dator, Jim (2011) “Futures Studies”, in William Sims Bainbridge (ed.), *Leadership in Science and Technology*, Thousand Oaks, Vol. 1, p. 32-40.
- Dator, Jim (1983) “Loose Connections: A Vision of a Transformational Society” in Eleonora Masini (ed.), *Visions of Desirable Societies*, Pergamon Press.
- Feldman, Fred (1978) *Introductory Ethics*, Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632, USA.
- Hume, David (2007) *A Treatise of Human Nature*. Critical edition, Vol. 1, Texts. Edited by David Fate Norton and Mary J. Norton, Oxford, Clarendon Press.
- Lissack, Selwyn, Lissack, Linda (2012) *Dali in Holographic Space*, Createspace, North Charleston, SC.
- Malaska, Pentti (2000) “Knowledge and Information in Futurology”, in *Foresight*, vol. 02, no. 2, apr. 2000, 237-244.
- Masini, Eleonora (1993) *Why Futures Studies*, Grey Seal, London, England.
- Malaska, Pentti (2002) “About Utopian and Dystopian Thought” in *Futures Research*, Vision Seminar, Turku, Finland.
- Rubin, Anita, Linturi, Hannu (2001) *Transition in the making, The Images of the Future in Education and Decision-making*, Finland Futures Research Centre, Turku, Finland.
- Shefrin, Bruce (1986) “Images of the Future, Futuristics and American Politics”, in *Technological Forecasting and Social Change*, 30, 207-219.

Web articles

- Bischoff, Paul (2013) “1970s Taiwanese Pop Star Brought Back to Life as Hologram”, Techinasia, September, <http://www.techinasia.com/1970s-taiwanese-pop-star-brought-life-hologram-video/>.
- Brzeski, Patrick (2013) “Taiwanese Pop Singer Performs with Hologram of Late Star Teresa Teng”, in The Hollywood Reporter, September, <http://www.hollywoodreporter.com/behind-screen/taiwanese-pop-singer-performs-hologram-624394>
- Collins, Georgia (2013) “Watch: Marilyn Monroe for Chanel no 5”, in Elle Uk, November, <http://www.elleuk.com/beauty/news/marilyn-monroe-stars-in-autumn-campaign-for-chanel-no.5#image=1>.
- Gardner, Eriq (2012a) “Holograms: A New Dangerous Frontier”, in The Hollywood Reporter, May, <http://www.hollywoodreporter.com/news/holograms-a-new-dangerous-frontier-329782>.
- Gardner, Eriq (2012b) “Marilyn Monroe Hologram Concert in the Works Amid Growing Controversy”, in The Hollywood Reporter, May, <http://www.hollywoodreporter.com/news/holograms-tupac-shakur-marilyn-monroe-legal-330982>.
- McCormick, Neil (2012) “Tupac Hologram: the Future of Live Entertainment is Dead”, in The Telegraph, April, <http://www.telegraph.co.uk/culture/music/rockandpopmusic/9208777/Tupac-hologram-the-future-of-live-entertainment-is-dead.html>.
- McGough, Will (2013) “Haptic Holography Will Be the Next Mind-Blowing Technology”, May, <http://mentalfloss.com//50739/haptic-holography-will-be-next-mind-blowing-technology>.
- Munson, Robyn (2013) “Marilyn Monroe's Brand New Chanel No.5 Advert”, in Marie Claire, November, <http://www.marieclaire.co.uk/news/beauty/544782/marilyn-monroe-s-brand-new-chanel-no-5-advert-it-s-here.html#KdVD0ECCTqM1pLjJ.99>.
- Szalai, Georg (2012) “Elvis Hologram Project Opens up New Growth Potential for Digital Domain”, in The Hollywood Reporter, August, <http://www.hollywoodreporter.com/news/analyst-elvis-presley-hologram-digital-domain-335236>
- Trott, Russel (2013) “ABBA Museum to Open Doors in Stockholm”, BBC News Europe, <http://www.bbc.co.uk/news/world-europe-22429172>.