

The Vindication of Non-expert Knowledge in the Defence of Public Health: *Erin Brockovich*

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Summary

Based on true facts, *Erin Brockovich* tells the story of the extraordinary role of a woman, with no legal training and with a complicated family background, in the preparation and outcome of a successful lawsuit against the *Pacific Gas and Electric Company* for polluting water for human consumption with hexavalent chromium in Hinkley (California, USA). The film offers a view of the strategies used by large industrial corporations for the concealment of environmental risks, while it claims the value of non-expert knowledge and the empowerment of the population as a whole in the defence of the right to health.

Keywords: Non-expert knowledge, Social activism, Environmental pollution.

Technical details

Original title: *Erin Brockovich*.

Country: USA.

Year: 2000.

Director: Steven Soderbergh.

Music: Thomas Newman.

Cinematography: Edward Lachman (as Ed Lachman).

Film editor: Anne V. Coates.

Screenwrite: Susannah Grant, based on a true story.

Cast: Julia Robert (Erin Brockovich), David Brisbin (Dr Jaffe), Dawn Didawick (Rosalind), Albert Finney (Ed Masry), Valente Rodriguez (Donald), Conchata Ferrell (Brenda), George Rocky Sullivan (Los Angeles judge), Pat Skipper (prosecuting attorney), Jack Gill (defendant) Irene Olga López (Ms Morales), Emily Marks (Beth Brockovich), Julie Marks (Beth

Brockovich), Scotty Leavenworth (Matthew Brockovich), Gemmenne de la Peña (as Gemmenne, Katie Brockovich De la Peña), Erin Brockovich-Ellis (Julia, the waitress),...

Color: Color.

Runtime: 130 minutes.

Genre: Biography, drama and romance.

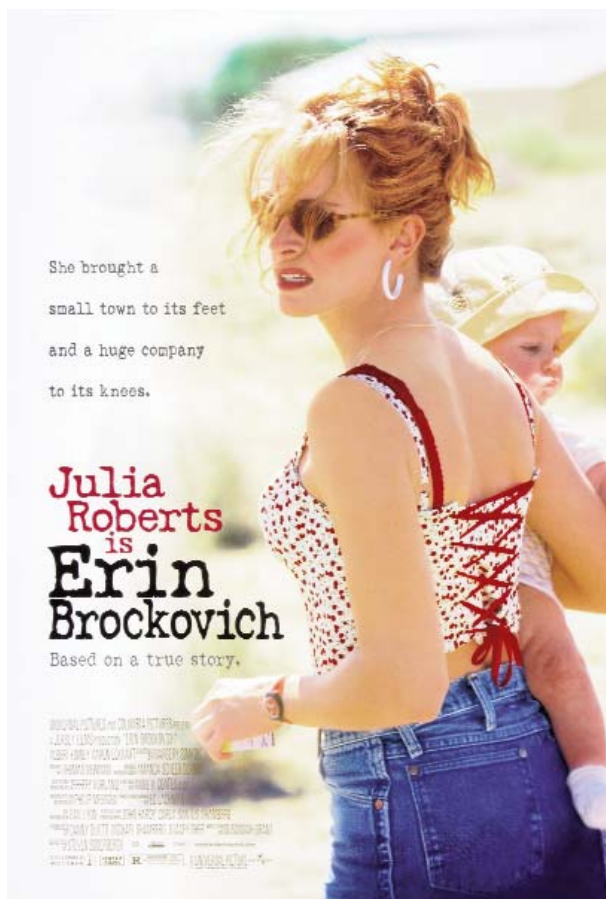
Production Company: Jersey Films.

Synopsis: Erin Brockovich is a single mother who obtains a position in a small law firm. Because of her unconventional personality, her start is not promising, but things will change when she begins investigating the strange case of certain clients who suffer from a suspicious disease (public synopsis).

Awards: Academy Award: Best Actress (Julia Roberts), nominations in the categories of Best Picture, Best Director, Best Screenplay and Best Supporting Actor (Albert Finney) (2001)...

<http://www.imdb.com/title/tt0195685>

[Trailer](#)



Introduction

Social studies of science, and the history of science itself, have contributed to revealing the limitations of the expert model in the identification and management of occupational and environmental risks. Experts definition of this types of problems highlights the importance of scientific knowledge and technical criteria when dealing with them, to the same extent that it dismisses the role of citizens, who are excluded from decision-taking regarding problems which directly affect them. So-called popular epidemiology and locally contextualized knowledge have been suggested as key elements in the creation of a more thorough and less restrictive and decontextualized approach to occupational and environmental risks than the one offered by experts, an approach that facilitates social participation and stimulates the role of non-experts in their solution^{1,2}. Access to locally contextualized information becomes essential for the empowerment of the commu-

nity in the defence of its right to health³.

Erin Brockovich, directed by Steven Soderbergh in 2000 and based on true events, tells the story of a case of pollution by hexavalent chromium of groundwater used for human consumption in a small town of Southern California. Erin Brockovich (Julia Roberts), born in 1960, played an essential part in the legal battle to obtain compensation for those affected. Brockovich was an employee at the law firm of Ed Masry (Albert Finney), she had no legal training and her family background was complicated (she was divorced and in charge of three children). However, because of her dedication, determination and commitment to the victims, she managed to drive forward the lawsuit that would result in the crush of the all-powerful company responsible for the pollution. The film approaches the strategies used by large industrial corporations for the concealment of environmental risks, especially claiming the historical agency of non-experts, unfamiliar with the expert worlds of law and science, in the defence of collective health.

Historiography has paid attention to the work of certain non-experts in reporting occupational and environmental risks, with noteworthy cases reported in the battle against the risk posed by asbestos^{4,5}. During the 20th century, in the seventies and eighties, there were various social movements claiming the need to transfer the capacity of decision regarding occupational and environmental risks to citizens in their capacity of instruments of social justice, granting access to expert knowledge and integrating and contextualizing such knowledge in the local environment and in popular culture. The range of social movements that shared this type of postulate is wide, ranging from the so-called "Italian labour model", which viewed the "autonomy of knowledge" regarding labour conditions and occupational risks as a prerequisite for workers to play a leading role in the defence of their health^{6,7,8,9}, to the environmental activism born in the USA in the seventies, in which groups made up by a diverse amalgam of community, trade union, environmentalist, pacifist, feminist and scientific activists committed to the defence of civil rights took part^{10,11}.

The film also allows us to explore the relation among work, health and the environment, also confirming that the privileged position of work in films is represented by ellipses, except in the case of exceptional jobs or when labour-related issues become an exception (accidents, strikes, etc.)^{12,13}. In this particular case, where the impact of a carcinogen affects both the factory and the community as a whole, attention is focused on the environmental victims, those living near the factory, whose health is affected when they consume water polluted with industrial waste. However, the health damages suffered by the

workers of the factory itself go by almost unnoticed in the development of the film. The battle for economic compensation for damages (monetization of risks) is a key feature of the plot, its success being the guarantee for a happy ending.

To begin with, I will briefly describe the real case on which the film, with a solid script by Susannah Grant, is based. Secondly, I will point out certain details regarding how the producer approached the subject. And to finish, I will deal with the uses of this film in forums devoted to teaching or to the discussion of public health to claim a way of acting and intervening in environmental problems not exclusively mediated by expert knowledge.

The Hinkley case: *Anderson vs. Pacific Gas & Electric*

The Hinkley plant of the *Pacific Gas and Electric Company* (PG&E) is a compression and pumping station for the transport of natural gas through the gas pipeline that takes it from Texas to the San Francisco Bay area. Between 1952 and 1966, the PG&E added hexavalent chromium to water to avoid the corrosion of the pistons of the cooling towers because of its antioxidant properties and its high solubility. In addition to the damages caused by hexavalent chromium to the plant operators, the effluents of the process were stored in deposits that were not appropriately sealed, thus causing the pollution of an area of more than a one mile radius around the plant¹⁴. Hexavalent chromium is absorbed into the body by airborne, digestive and topical routes. Chronic intoxication, such as the one suffered by the plant workers and the population of the nearby areas who drank polluted water, manifests itself with skin pathologies and tracheo-bronchial or bronchial asthma symptoms and, given its carcinogenic and mutagenic potential, it is linked to a higher risk of pulmonary cancer and tumors of the gastrointestinal tract¹⁵.

The toxic leak was discovered in 1987, during what the company called a routine check-up. At the time the carcinogenic potential of hexavalent chromium when inhaled was already known, although it was believed that when ingested the risk was not so high. The maximum levels of hexavalent chromium permitted by the USA *Environmental Protection Agency* in water for human consumption, 0.10 parts per million (ppm), had been exceeded by far in the affected groundwater of Hinkley (0.58 ppm). The incident was reported to the *California Regional Water Quality Control Board*, who ordered the cleaning-up of the polluted areas. In the early nineties the company carried out a decontamination plan and attempted to acquire some of the lands nearest to the plant (as a tactic to send those affected away and thus acquire a certain degree of impunity). In face of the

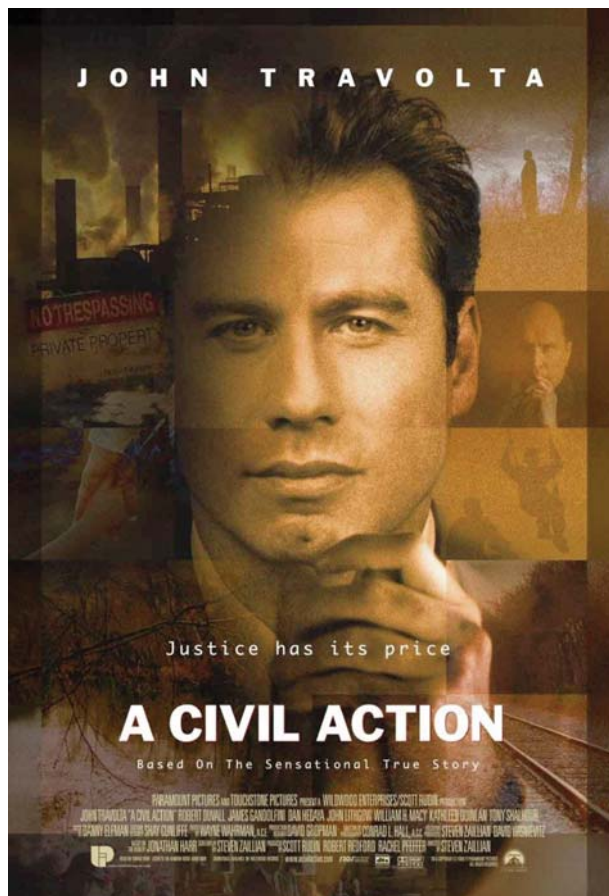
refusal of certain residents, the company increased its purchase offer far beyond market prices, which raised suspicions. The first investigations suggested that pollution by hexavalent chromium could be the reason for the high incidence of pathologies, cancer among them, in residents of the area. The number of victims who finally took part in the lawsuit was 650, including residents, farmers and plant workers. The case was resolved in 1996 by binding arbitration and the victims obtained the highest compensation so far in the USA (333 million dollars) in concept of civil liability for damages, medical expenses and psychological trauma¹⁴.

Erin Brockovich, the film

Both the approach of an environmental pollution problem and the legal battle dealt with in the plot allows us to frame Soderbergh's film in the genre of *toxic torts* or cases of environmental damages, alongside films such as *Silkwood* (1983) by Mike Nichols, a biopic about Karen Silkwood, who reported the systematic violations of safety and health protection standards at the plutonium processing plant owned by the Kerr-McGee company and situated near Crescent (Oklahoma, USA); or *A Civil Action* (1998) by Steven Zaillian, which tells the story of

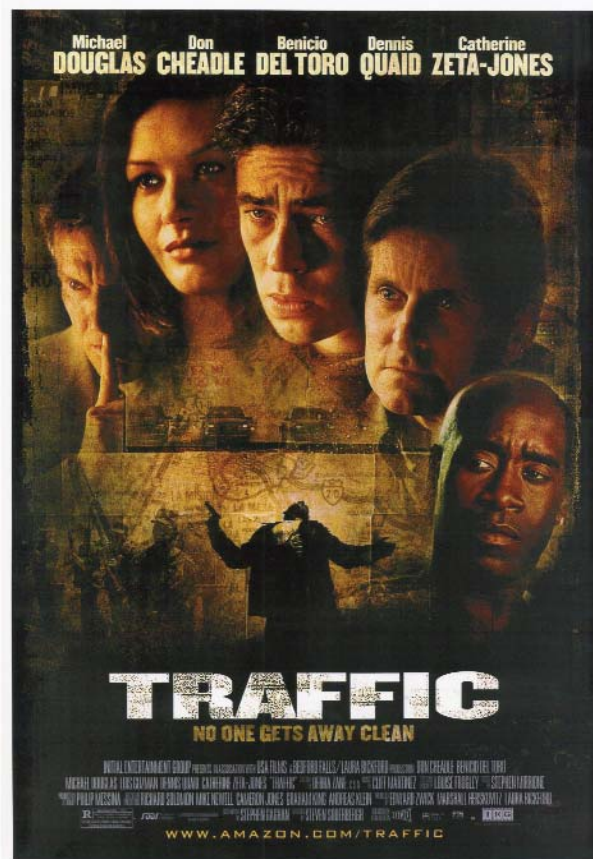


a true case of compensation to the families of children suffering from leukaemia caused by the contamination by trichlor and tetrachlorethylene from industrial effluents of water intended for human consumption, this time in Woburn (Massachusetts, USA)¹⁶.

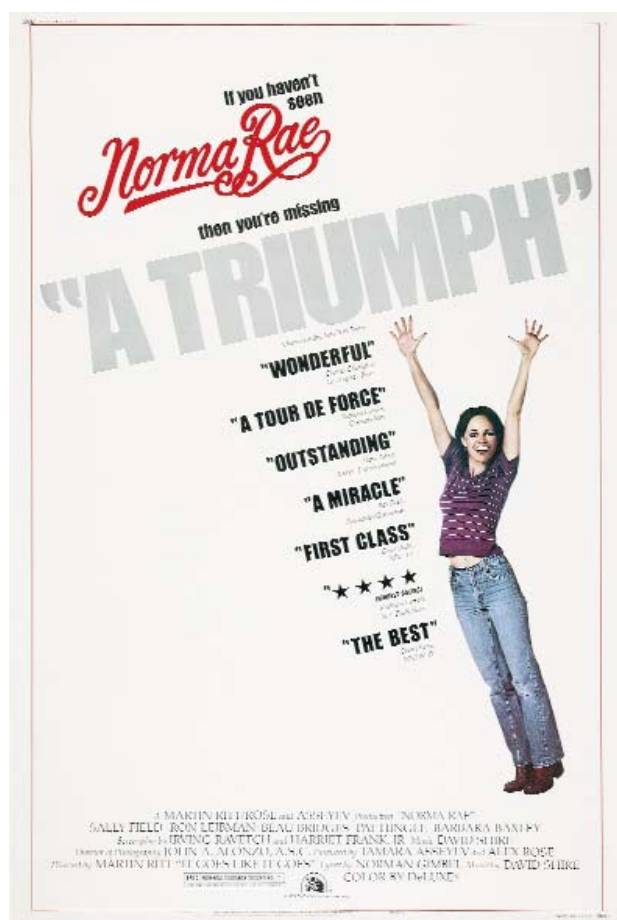


This genre pays special attention to the power imbalance that exists between the parts involved in this kind of lawsuit. On the one hand, Goliath would be represented by the industrial corporation responsible for the spillage and the damage to workers and residents of the area, a legal entity lacking a human face and only represented by its legal advisors and defence counsel. On the other hand, David would be represented by those affected and their legal representatives, insignificant compared to the all-powerful corporations and often lacking the support of the health and environmental government agencies. This is the context in which the plots are set, infected by the romantic halo that surrounds this kind of battle, which, in this case, reaches its climax with the success of the lawsuit. Producer Steven Soderbergh, who throughout his career has combined commercial films with films of social content such as *Traffic*, also produced in 2000, chooses this option too. Apart from highlighting the impunity in which the managers of multina-

tional companies move, using their status as a legal entity to give priority to profit over the population's health, the producer's choice contributes to reinforce the importance of the determination displayed by Erin Brockovich, the protagonist, in the outcome of the case¹⁷.



From this point of view, Erin would be another heroine to be enlisted alongside other female social activists represented in Hollywood films such as the aforementioned Karen Silkwood or *Norma Rae* (1979) by Martin Ritt. Erin is described not only as a woman committed to the defence of the civil rights of those affected, but especially as someone bent on restoring the dignity of the victims, with whom she establishes a special bond of empathy. Alongside her devotion to the issue, she will have to battle with her difficult family situation and the lack of sympathy offered by her workmates at the law firm because of her low level of training and her unconventional ways and attire. In this sense, both Erin and a large number of the victims portrayed in the film are framed within what is dismissed in the USA as *white trash*, low social status white citizens with a limited education¹⁸. In response to this, the film shows a completely unglamorous environment of humble homes and dusty landscapes, emphasized by the marked yellowish



hues of the cinematography itself.

The film is supported by magnificent performances, beginning with Julia Roberts, who plays the role of Erin (whom she physically resembles), winning the Best Actress Academy Award in 2000. The film plays on the contrast between the protagonist's commitment and impulsivity, shown especially by her stubbornness, her sharp remarks and her transgression of certain conventions, and the cautious and calculated behavior of the legal experts, oblivious to the victims' suffering. Erin's relationship with lawyer Ed Masry, magnificently performed by Albert Finney, is especially comical and effective, since the strong chemistry between them can be perceived throughout the whole film.

The empowerment of non-experts

In my opinion, one of the most important messages that can be drawn from *Erin Brockovich* appears in the reflexion on the agency of non-experts in the defence of public health. In this sense, Brockovich's work in Hinkley cannot be interpreted as a mere collection of evidence and recruitment of plaintiffs. Indeed, scientific uncertainty when it comes to casually linking exposure

and damage and the difficulties and expenses that have to be faced to obtain information and conclusions from experts are, both in real life and in fiction, tremendous challenges for the success of this type of lawsuit. Brockovich devotes her efforts to finding evidence that might prove the casual link between the use of hexavalent chromium and the diseases suffered by those living in the neighbourhoods around the factory, seeking for this purpose the help of experts, official records and local information. The second stage of her investigation is focused on obtaining evidence to prove that the company acted negligently, aware of the toxicity of chromium and of its impact among those living in the area around the plant. As a consequence, the offer to purchase the properties of the victims for a higher price than that established by the market answered an attempt to remove evidence of environmental pollution and disperse the victims, thus splitting up experiences related to health problems to avoid a civil liability procedure. Likewise, the relation between the local and national divisions of the company must be noted, since it would become a key factor for the accusation^{19,20}. The kind of evidence related to the operation of the company itself could only be obtained through the help of a former worker of the plant, Charles Embry (Tracey Walter), who, as an act of revenge against the PG&E for the death of a relative due to pathologies caused by exposition to chromium at the plant, will provide Erin with privileged access to documents that had supposedly been destroyed.

However, beyond the aforementioned extraordinary work, Erin's efforts can also be conceptualized as catalysts for the groups of victims demanding information and explanations regarding the changes they were noticing in the health of their families and in the community as a whole. Brockovich adds value to the experience of those affected by creating epidemiologic knowledge regarding the problems of the community in a non-expert way, a human-level epidemiology based on experience and personal contact with each and every one of those affected. The film repeatedly shows the contrast between Brockovich and the legal professionals involved in the case when it comes to contact with the victims. Leaving aside the disdain towards them displayed by the legal advisers from PG&E, the most illustrative case might be that of the lawyer who substitutes Brockovich during her illness, Theresa Dallavale (Veanne Cox). Brockovich's ability to retain all the details regarding each and every one of those taking part in the lawsuit, of showing interest in their personal situations and empathizing with their suffering contrasts with the cultural and emotional abyss represented by Theresa, who is incapable of stepping into her clients' shoes. Brockovich's task is not only reduced to seeking compensation for the damages, it is rather based on restoring the

victims' dignity. For this purpose it is essential to find testimonies that are presented to the viewer through meetings with Brockovich in docudrama style. The way certain of these meetings are treated in the film reminds me extraordinarily of the docudrama *Alice – A fight for life* (1982) by John Willis, who shows great skill in his method for bringing the aforementioned testimonies to the viewer²¹.

Through the stories of the victims, with whom it is not difficult to identify, we are able to step into their conceptions of the health problem they are suffering. The processes of naturalization and individuation of the risks that are reflected in these testimonies are striking. The refusal to believe in the environmental origin of their ailments, due to a lack of collective experience of the disease and the absence of links between the experience of the plant workers and that of the population living in the area, favours individual susceptibility and resistance when it comes to building an awareness of risk. The victims' tendency to blame themselves is especially well represented in the case of Mandy Robinson (Meredith Zinner), a young woman who had suffered five abortions that she thought had been caused by the use of marijuana and contraceptives. While the producer highlights the victims' testimonies to build evidence of the disease, it is also important to note the catalyzing effect Brockovich exerts over them to give shape to health concerns and legitimize their claims. The film shows this process of change as a result of scientific evidence and the explanations provided by Erin to those affected, explanations that will later allow them to restructure their problem as a case of damages derived from environmental pollution. As it has been argued, this knowledge and skill base gained by the community has a multiplying effect and becomes an engine for the permanent change of the group members encouraging their empowerment and the feel they have taken power from those who held power over them³.

The film also allows us to build an image of the North American justice system and the ability of great corporations to avoid lawsuits, which forces victims to rely on the system of arbitration that, given the fact that it is resolved by experts, is perceived as offering fewer guarantees than a trial with a popular jury. The strategies used by companies to conceal environmental and occupational risks are based on the conspiratorial model: misleading information for residents in the area, connivance of the company's doctors, threats, destruction of compromising records and an attempt to purchase the neighbours' properties and wills in face of a growing number of cases of cancer. The fact that the role of the plant workers is hardly noticeable in the film is also worth mentioning. Even though the company also withheld information from the workers, throughout history workplaces have always been the first place where the harm-

ful nature of certain production processes and their waste are recognized, these processes and their waste affecting the surrounding population in a second wave. Although the film elaborates on the traditional ellipsis used by cinema to approach the world of work, which contributes to the opacity of industrial risks, the importance of the link between the workers' experience and that of the surrounding population should be noted to build knowledge about the environmental risks²².

Conclusion

The interpretation of the film provided in this article is largely based on the impact of the main character, and the real Erin Brockovich, on several community groups and people affected by work-related problems and problems regarding environmental pollution. It is not unusual to refer to a non-expert that has headed battles of this type, combining scientific evidence and local knowledge, as the Erin Brockovich of a particular place. The last example I have come across is a work of journalism devoted to the struggle of the population of Casale Monferrato against an asbestos factory belonging to the company *Eternit*, a factory that has made this Italian city to become an international reference point. This struggle has involved members of the unions, affected workers and victims of environmental pollution, associations of people affected, groups of neighbours, doctors, journalists, lawyers, judges, etc. in a battle for the defence of public health that is still being fought before the different courts²³. The expression has also been used to refer to the lack of mobilization of core groups in face of health-related problems linked to environmental pollution²⁴.

Acknowledgements

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References

1. Menéndez Navarro A. El papel del conocimiento experto en la gestión y percepción de los riesgos laborales. *Arch Prev Riesgos Labor*. 2003;6(4):158-165. Available from: http://www.ugr.es/~amenende/publicaciones/APRL_risk.pdf
2. Bloor M. The South Wales Miners Federation, Miners' Lung and the Instrumental Use of Expertise, 1900-1950. *Soc Stud Sci*. 2000;30(1):125-140.
3. Roskam E. Technical assistance to the grassroots, part ii: Erin Brockovich revisited—a lesson for social policy-making and agency. *New Solut*. 2005;15(2):107-112.
4. Wikeley NJ. Asbestos and Cancer: An Early Warning to the British TUC. *Am J Ind Med*. 1992;22(3):449-454.

5. Greenberg M. Reginald Tague: A UK Asbestos Prophet—A Postscript. *Am J Ind Med.* 1993;24(5):521-524.
6. Cárcoba A, editor. *La salud no se vende ni se delega, se defiende. El modelo obrero.* Madrid: Fundación Sindical de Estudios; 2007.
7. Menéndez-Navarro A. A Camel through the Eye of a Needle: Expertise and the Late Recognition of Asbestos-Related Diseases. *Int J Health Serv.* 2011;41(1):121-135.
8. Pitti L. Experts 'bruts' et médecins critiques. Ou comment la mise en débats des savoirs médicaux a modifié la définition du saturnisme en France durant les années 1970. *Politix.* 2010;91:103-132.
9. Barca S. Italy 1958-1978: The Rise and Fall of a 'Labor Environmentalism'. In Seller C, Melling J, editores. *Dangerous Trades: Histories of Industrial Hazard across a Globalizing World.* Filadelfia: Temple University Press [in press].
10. Rose F. *Coalitions across the Class Divide: Lessons from the Labor, Peace, and Environmental Movements.* Ithaca: Cornell University Press; 2000.
11. Akrich M, Barthe Y, Rémy C, editores. *Sur la piste environnementale. Menaces sanitaires et mobilisations profanes.* Paris: Presses des Mines; 2010.
12. Monterde JE. *La imagen negada: representaciones de la clase trabajadora en el cine.* Valencia: Filmoteca Generalitat Valenciana; 1997.
13. Menéndez Navarro A. Reflexiones en torno a la mirada del cine sobre la salud laboral. *La Mutua.* 2008;20:39-49. Available from: http://www.fraternidad.com/descargas/FM-REVLM-20-4_788_Reflexiones_en_torno_a_la_mirada_del_cine_sobre_la_salud_laboral.pdf
14. Sharp K. «Erin Brockovich»: The real story. *Salon: Arts and Entertainment* [Internet]. 2000 Apr 14. Available from: <http://www.salon.com/entertainment/feature/2000/04/14/sharp>
15. Gil Hernández F. Toxicología industrial (III). Toxicidad de los metales pesados. In: *Tratado de Medicina del Trabajo.* Barcelona: Masson; 2005. p. 803-820.
16. Koenig TH, Rustad ML. Toxic Torts, Politics, and Environmental Justice: The Case for CrimTorts. *Law & Policy.* 2004;26(2):189-207.
17. Santamaría JM. El cine y el derecho: *Erin Brockovich* o la fuerza de la verdad. Educación y cine: hacia una alfabetización para el cine. Available from <http://cineduca1.iespana.es/santamaria.htm>
18. Laer F v. The rise of deconstructing white trash movies. Analyses of representations of white trash in *Erin Brockovich* (2000), *8 Mile* (2002), *A Love Song For Bobby Long* (2004) and *Black Snake Moan* (2006). Master Thesis: University of Utrecht; 2010.
19. Pérez Escalona S. Riesgo y derecho de daños. Breves notas a propósito de la película *Erin Brockovich* (Steven Soderbergh, 2000). In: San Martín Segura D, Susín Betrán R, editores. *Derecho y política en la sociedad del riesgo. 8 propuestas de cine.* Logroño: Universidad de la Rioja; 2009. p. 121-130.
20. Hernández JC. *Erin Brockovich.* Ciencia y Derecho ante la sociedad del riesgo. Transparencia y derecho de acceso a la información medioambiental. Proyecto DeCine [Internet]. 2010. Available from: <http://proyectodecine.files.wordpress.com/2010/07/erin-brockovich.pdf>
21. Menéndez Navarro A. *Alice - Alice—A Fight for Life* (1982) and the public perception of the occupational risks of asbestos. *J Med Mov* [Internet]. 2007; 3: 49-56. Available from: <http://revistamedicinacine.usal.es/index.php/en/vol3/num2/486>
22. Sellers C. *Hazards of the Job. From Industrial Disease to Environmental Health Science.* Chape Hill: University of North Carolina Press; 1997.
23. Rossi G. *La lana de la salamandra. La verdadera historia de la mortalidad por amianto en Casale Monferrato.* Madrid: Ediciones GPS; 2010.
24. Moberg M. *Erin Brockovich doesn't live here: Environmental politics and «Responsible Care» in mobile county, Alabama.* *Human Organization.* 2002;61(4): 377-389.