

-  **THAT WHICH IS INCONVENIENT**
-  **THAT WHICH IS TRUE**
-  **AN OSCAR WINNING DOCUMENTARY**

BEYOND THE BOX OFFICE

NEW DOCUMENTARY VALUATIONS

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EXECUTIVE SUMMARY

This paper set out to measure the social return on investment created in the UK by the blockbuster climate change film *An Inconvenient Truth* as an example of an important social justice film whose true value has never been measured.

It's not only documentary filmmakers who have found that the world is changing and they need new ways, beyond their financial results, to measure their success.

Companies all over the world are trying to measure their social and environmental impacts and find themselves accountable to new charts and rankings declaring who is "Most Green" or "Best Place to Work". Even the UK government, and a largely Conservative one at that, is experimenting with ideas of a Happiness Index. From 2012 the Office of National Statistics will report on people's self reported sense of well-being as well as GDP for the first time.

The valuation approach in this paper draws on work done in various fields: sustainability accountancy, environmental and cultural economics, all attempting to find new ways to value the whole impacts of enterprises and nations.

It is possible to establish *An Inconvenient Truth's* positive effects on society – there is strong evidence of both awareness and behaviour change at both the individual and corporate level because of it. However it did not prove possible to measure (and thereby ascribe a value to) all of these positive *externalities*. The data were either no longer available (but would have been if data capture had been put in place before the film's release) or were too costly to acquire.

However the first *willingness to pay* study of a film was conducted to measure the *intrinsic value* placed on *An Inconvenient Truth* by UK citizens, leading to a public good valuation of over £73 million. This gave a social return on investment ratio of 57:1 This far exceeded the stated ambition of the film's funder Jeff Skoll and will hopefully encourage other film producers and funders to apply this and other valuation methodologies to their most important films.

1. INTRODUCTION

“One metric of success that we use is whether more good comes from the film than just putting the money directly to work in a non-profit organization involved in the same issue. We’ve actually had cases where we looked at the risk profile of a film and said, ‘The way this looks, chances are we’re going to lose a million, 2 million, even 5 million dollars. But maybe we’ll get 10 million or 20 million worth of social value from it’. We will take risks on projects where we think we might lose money, because we hope that the good that comes from that outweighs the risk. It’s a different kind of philanthropy”.

Jeff Skoll, Executive Producer of *An Inconvenient Truth*¹

Over the past seven years documentaries have proven to be effective drivers of public awareness, setting press agendas, influencing politicians, companies and campaigners. Since *Super Size Me* put McDonalds in the spotlight in 2004 there have been a string of influential social issue films on UK cinemas and TV screens including *Jamie’s School Dinners*, *Burma VJ*, *Black Gold*, *The Age of Stupid*, *The End of the Line*, *Chosen*, *Restrepo* and *Food Inc.*

How are these documentaries, which are rarely profitable through the box office, funded? In the UK there is a long history of generous government support for documentary via the public service broadcasters BBC and Channel 4. In the US this role has more commonly fallen to philanthropists.

It is widely believed that the existence of ‘market failures’ prevents the market mechanism from providing society with the optimal level of arts and culture from the viewpoint of social welfare.

David Throsby, author of *Economics and Culture*, here lists the various ways in which different economists have justified the value that the arts can have for society beyond

¹ Bruce Newman interview for the San Jose Mercury. October 2005.

the price they are able to command in the market, such as the external benefits and public good and therefore why governments invest in them.

“is there an economic rationale for arts support within the free-market model of the voluntary exchange economy? Much interest has focused on this question in the literature of cultural economics. The most plausible rationale framed in these terms is the proposition that the arts manifest some characteristic of market failure, including possibilities that the arts give rise to external benefits in production and consumption, that there are non-market demands for the arts existence, option and bequest values and that the arts exhibit public good characteristics”² David Throsby

Documentary is a wide genre and contains some very commercially successful TV shows and films. Reality formats like Wife Swap which are sold around the world and nature history films such as David Attenborough’s Earth sold globally as a cinema documentary. However the majority of social documentaries, films which aim to raise awareness or debate of a social issue, are far less commercially successful. Their audiences are smaller and very few are profitable for either the makers or the distributors. Most of these films are still supported by the public service broadcasters, in the UK and other countries, who invest in them on the basis of their public good.

Recent cuts to UK public spending in the UK will only hasten a trend towards reduced public support for documentaries and journalism and greater involvement of new kinds of funders. The problem for documentary filmmakers is how to capture and measure the ‘public good’ that their films deliver in order to report back to these new investors and stakeholders.

The UK public service broadcasters who still pay for many social documentaries assess these films in three very simple ways; press attention for the film and the station (the week before and the day after the broadcast), ratings (delivered by Barb the next day) and awards such as BAFTAs and Academy Awards.

2 P 140 Economics and Culture, David Throsby.

The problem for new documentary investors, either individual philanthropists or representatives from foundations, charities, corporations or government is that they need hard data to show to colleagues, bosses and boards when it comes to media funding decisions. And they need more than just TV ratings, press cuts and awards to prove the real reach, influence and impact of their investment.

This paper illustrates a methodology that can be used to measure the social value of a documentary film using *An Inconvenient Truth* as a case study. The scope of this paper is limited to the UK and, as the reader will see for herself, it has had to use many proxies and other shortcuts to achieve its goal on limited research resources. Nonetheless it is an important first step and illustrates the great potential that these valuation tools have to evaluate the role of documentary.

Jeff Skoll who is quoted at the top of this introduction, was the first President of eBay and is now a leading philanthropist and the chairman of Participant Productions, the producers of a film called *An Inconvenient Truth* (AIT). He makes the point that he's willing to put between \$1 to 5 million into a film that creates \$10 - 20 million of social value. A social return on investment (SROI) of between \$2 and \$20 dollars for each \$1 invested would indeed be judged a success. This paper is the first attempt to actually investigate the social return on investment that *An Inconvenient Truth* achieved and in doing so, explore a methodology useful for other social documentaries.

There are disadvantages to studying a film that premiered 4 years ago, rather than an unfolding example, primarily that we cannot study audience reactions and changes in behaviour in real time. Nonetheless, *An Inconvenient Truth* was chosen as the subject of this analysis for several reasons:

- ★ It is a very famous film that is known to a broad readership not just documentary professionals. A study of its impact is therefore of wider interest than a film with less recognition³.
- ★ It clearly had a big impact as a film, creating a huge amount of press coverage and a wide distribution across the UK⁴. This made it easier to ask questions about its impact in a general survey of the UK population.
- ★ Released theatrically in September 2006, arguably enough time has elapsed to make an assessment of its total impact. In fact the film only had its first UK network television premiere on Channel 4 in April 2009.

³ YouGov survey of July 17th 2009 indicated that 57% of the UK population were aware of the film and its message.

⁴ IMDB/Box Office Mojo records the film opening on 18 screens across the UK simultaneously and widening to a maximum of 68 screens.

2. BACKGROUND ON THE FILM

An Inconvenient Truth (AIT) came about when Al Gore's climate change slide show lecture came to the attention of two Hollywood players; Laurence Bender, a fiction producer, and Laurie David, a producer and wife of comedian Larry David.

They were impressed by Gore's knowledge of climate science and his ability to communicate his view of the implications for humanity in a very clear and compelling way. They took the project to philanthropist Jeff Skoll's Participant Productions, a company dedicated to socially relevant films, and signed director Davis Guggenheim.

Released in fall 2006, the film was a hit. It won two Academy Awards (Best Documentary and Best Original Song) in February 2007 and later that year Al Gore shared the Nobel Peace Prize with the International Committee for Climate

Change. Florida must have seemed a very long way away for the ex-Vice President. Rarely has a single film created such a spectacular career turnaround, except perhaps *Pulp Fiction* and John Travolta.

The film is often credited with providing the tipping point in public awareness of climate change in the US and the UK. Although George Bush is reported to have said he doubted he would watch it, clearly policy makers across the UK did engage with the film. The conservative leader David Cameron explicitly recommended the film to



fellow conservatives at the 2006 party conference, stating: *“If you want to understand climate change, go and see Al Gore's film, ‘An Inconvenient Truth.’”*⁵

Business leaders such as Stuart Rose, CEO of Marks and Spencer's were inspired by the film to launch the Plan A campaign radically cutting M&S electricity usage by a combination of methods including darkening store windows at night.

Released theatrically in the UK and on DVD, on TV the film premiered first on SKY and later on Channel 4. It was also shown in many UK schools as part of the national curriculum.

⁵ Full text of the speech in the Guardian Wednesday 4 October 2006

3. THE QUESTION OF VALUE

"Not everything that can be counted counts, and not everything that counts can be counted." — attributed to Albert Einstein ⁶

How do we value a film like *An Inconvenient Truth*?

It is not obvious with AIT whose value should be measured. The value the film had to investors? Its value to audiences? Or to the nation? And what should we measure? The money it made? The money it saved? The damage to the planet which was avoided? The contribution to public awareness? The place the film had in people's hearts? Should the film be valued as a cultural artefact? Or as an instrument of social change?

And which models and methods should we employ? Social Return on Investment (SROI), Triple Bottom Line (TBL), Contingent Value Methodologies (CVM)? We will have to look at each in turn in the following chapter.

It seems difficult to untangle, but the problem of valuing cultural products – art, theatre, ballet etc – has been addressed by a growing field of cultural economists. David Throsby is both aware of the special nature of such goods but also keen to emphasise the common ground with more traditional valuations:

*"In a fundamental sense the notion of value is the origin and motivation of all economic behaviour. At the same time, but from a very different perspective, ideas of value permeate the sphere of culture.. In both fields of our concern, economics and culture the notion of value can be seen, despite its differing origins, as an expression of worth.. It can therefore be suggested that value can be seen as a starting point in a process of linking the two fields together."*⁷ David Throsby

⁶Ironically, this fantastic quote cannot itself be truly counted as an Einstein quote as it appears to only be attributed to him without source information.

⁷ David Throsby Economics and Culture

Throsby makes an important distinction, when valuing cultural goods and services, between private goods and public goods. AIT as a private good is an experience (to watch) or a product (to own) which is subject to the usual market mechanism of supply and demand. However it is also a public good, meaning that many additional people can benefit from the good without reducing the consumption of others and in fact it is impossible to restrict the benefits of the good to consumers only. AIT benefited not only viewers but contributed to a national debate that benefited all citizens. In addition the carbon dioxide reduction that arguably resulted from changed behaviour catalysed by the film conferred wide benefits.

Throsby points out that most cultural goods are mixed goods, with both private and public good characteristics and this is certainly true of AIT which was a commercial as well as a social success. We therefore need to measure both.

We can first value the film as a private good by looking at film's performance in the market, the number of people who went to see it, the revenue and profit. We will do this in the next chapter.

Valuing the public good is less straightforward. There are two possible approaches. The first is to measure and then value the *effects* of the film. So for instance, we could measure the carbon dioxide saved by behaviours inspired by the film and value them at market rate etc. This approach is effectively to map out and value the films' externalities and we will attempt this in chapter 5 parts a) and b).

The second approach to public good valuation is to use the population affected by the film, in this case UK citizens, to both measure and value the film's importance using contingent value methods (CVM), or willingness to pay studies. This technique has been defined as “ *a method of estimating the value that individuals attribute to non-tradable goods or to some characteristics of tradable goods not revealed by the market mechanism*”⁸ by Professor Tiziana Cuccia and we will carry out just such a valuation in chapter 5 part c).

⁸ definition given on p119 Ruth Towse (Ed), 2003. A Handbook of Cultural Economics. Edward Elgar.

Triple Bottom Line or Social Return on Investment?

Once we have valued the firm, both as a private and public good, we have a choice of models to analyse the results.

A number of writers, pre-occupied with encouraging companies to include their social and environmental externalities (either positive or negative) alongside their financial results in their valuations have developed accounting techniques such as John Elkington's Triple Bottom Line (TBL) in 1994. Adopted by the United Nations in 2007, this has become the leading approach to full cost accounting for the public sector. TBL accounting aims to make corporations whose primary purpose is not the creation of public goods, see the full picture of their cost base by valuing the externalities such as pollution or CO2 release which do not affect their profits. TBL could be applied to AIT to acknowledge separately its successes with 'people, planets and profits' but TBL is really designed to test whether enterprises are fully sustainable once the 'true' costs are considered. Conversely AIT is an example of an enterprise actually designed to deliver public goods, a social enterprise or 'not just for profit activity.

Other writers have developed accounting techniques designed to help such enterprises re-define their profitability. The Blended Value approach to Social Return on Investment was pioneered by the Roberts Enterprise Development Fund, a charitable foundation in San Francisco. Their model was developed in 2000 by Jed Emerson⁹ and involves calculating both the return on investment (ROI) and the social return on investment (SROI) and then combining them to create a Blended Index of Return.

$$\frac{\text{Profit}}{\text{Investment}} = \text{Return on Investment}$$

$$\frac{\text{Social value}}{\text{Investment}} = \text{Social Return on Investment}$$

$$\frac{\text{Profit} + \text{Social Value}}{\text{Investment}} = \text{Blended Return on Investment}$$

⁹ Social Return on Investment," The Roberts Foundation

In the UK, the New Economic Foundation, a charitable think-tank in the UK, championed the wider use of this model working with the government's Office of the Third Sector. This is the model this paper will use to assess AIT's return on Jeff Skoll's investment.

4. PRIVATE GOOD VALUATION

Despite Jeff Skoll's declaration that he was willing to lose money on a film in financial terms if it created millions of pounds of social value, *An Inconvenient Truth* was a remarkably profitable documentary.

In the US, *An Inconvenient Truth* took just over \$24 million at the box office and became the 6th best selling documentary of all time. As of April 2011 it had slipped to 11th place, pushed down by subsequent films - *Jackass*, *Michael Jackson's This Is It*, *Justin Bieber: Never Say Never*, *Earth* and *Sicko*¹⁰.

	US DOCUMENTARY BOX OFFICE CHARTS	APRIL 2011
1	FAHRENHEIT 9/11 (2004)	\$119,194,771
2	JACKASS 3D (2010)	\$117,229,692
3	MARCH OF THE PENGUINS (2005)	\$ 77,437,223
4	JACKASS: NUMBER TWO (2006)	\$ 72,778,712
5	JUSTIN BIEBER: NEVER SAY NEVER (2011)	\$ 72,208,000
6	MICHAEL JACKSON'S THIS IS IT (2009)	\$ 72,091,016
7	JACKASS: THE MOVIE (2002)	\$ 64,255,312
8	EARTH (2009)	\$ 32,011,576
9	THAT'S ENTERTAINMENT (1974)	\$ 26,890,200
10	SICKO (2007)	\$ 24,540,079
11	AN INCONVENIENT TRUTH (2006)	\$ 24,146,161

The film took £935,770 at the UK box office in 2006 (UK Film Council figures). This makes it also one of the best selling documentary features in the UK. By contrast the following year 2007, a total of 39 documentaries were released at cinemas in the UK which took a total of £1.6 million.

Box office figures are widely reported and often form the basis of newspaper articles about the success of films. However Edward Epstein, author of the Hollywood Economist has written about the difficulty of discovering the true profitability of films because box office tickets provide only a part of a film's income. Distributors are also both secretive and use labyrinthine accounting methods – which explains the fact that

¹⁰ Source: Internet Movie Database

film producers who are usually due a percentage of a film's profits, often see no return whatsoever even on films which broke box office records.¹¹

"The major Hollywood film studios have recently come under fire in the press and in the courtroom for "creative accounting" that appears to deprive writers, producers, actors, and directors ("talent" as they are called in the industry) of the share of profits they expected to receive pursuant to their contracts. ... This standard formula contains a complicated list of expenses that are deducted from the film's gross receipts before the film realizes what the studio considers a net profit for the purpose of paying participants. Calling this form of contingent compensation "net profit participation" encourages the easy misunderstanding that the participation is a share of the actual profits from a particular film calculated under generally accepted accounting principles ("GAAP").

According to the studios, the formula evolved as a method for them to recover some of the costs of the movies that lose money before sharing profits on the blockbusters. Paramount Pictures has argued that studios must rely on a relatively small number of profitable films to offset the far more numerous projects that lose money each year. Nonetheless, suspicion and resentment continue to surround the net profits formula, now derisively referred to as "Hollywood accounting." ¹² Tim Connors

This paper is not concerned with either adhering to, or analysing 'Hollywood accounting' and will instead take a more 'common sense' approach to establishing the profitability of AIT. Specifically, we simply seek to discover the basic costs of making and distributing the film in the UK and the gross income streams that it generated.

"If an intrepid reporter decided to pursue a story about the actual profitability of a movie, he or she would need to learn how much the movie cost to make, how much was spent on P&A, the details of the distribution deal and its pre-sales deals abroad, and its real revenues from world-wide theatrical, DVD, television and licensing income. Such income is far less easily accessible.. Hence the media's continued fixation on box office numbers¹³"

Edward Jay Epstein.

¹¹ This is famously true of another Paramount Pictures release Forest Gump which despite a domestic gross of over \$300 million, apparently made no profit.

¹² Introduction to Beleaguered Accounting: Should the Film Industry Abandon Its Net Profits Formula; Connors, Tim

¹³ The Hollywood Economist

For the purposes of this paper I am going to have to *estimate* the film's profitability in the UK because whilst some of the necessary data is public, some other data has never been released.

Costs

a) Film Production Costs

The budget film is generally understood to have cost around \$1 million. This was the figure given by producer Laurence Bender¹⁴ but remains unconfirmed by Participant. For the purposes of this paper we will take the budget to be \$1 million.

The film was released in many countries. How much of the budget should be allocated against the UK costs? The film could not have been made for less than the full budget, so the full cost could arguably be appropriate. On the other hand the film was made primarily for the US market, so arguably the film was already paid for when it came to the UK and no cost should be attributed. This paper is taking a middle approach, apportioning a percentage of the production cost against the UK market, according to the international box office split. As noted earlier, the UK box office returned £935,770 in 2006 or (using the average currency rate for September 2006 of \$1.88¹⁵), \$1,759,247. The global box office was \$49 million, making the UK 3.59% of the total theatrical takings.

3.59% of the budget is equivalent to \$35,900 or, at the 2006 historical conversion rate of £0.53, to £19,027.

According to the leading film publication Variety, Paramount acquired the documentary for no up-front cost or advance, reflecting the generally poor performance of documentaries at the box office.¹⁶ But do we not know the details of the deal signed between Paramount and the producer Participant Productions so we cannot surmise

¹⁴ Laurence Bender interview with Amanda Little for Grist.org March 6th 2007

¹⁵ www.xe.com, the Canadian online foreign exchange company

¹⁶ Anne Thompson in Variety June 5th 2008

how revenues or profits were split between the parties and have to consider them as a whole – the profits from production and distribution in the UK.

b) Theatrical Marketing and Distribution Costs.

These figures are incredibly difficult to obtain as distributors are very unwilling to share them. Paramount clearly spent heavily on releasing the film with a big national advertising campaign and hiring specialist press and marketing partners like Clown Fish, an ethical marketing company, Premier PR for press and Way to Blue for online marketing. Al Gore was flown over twice to the UK for PR support and a micro website created.

It is commonplace for a distributor to spend the equivalent of their theatrical box office income on marketing, making back their profit from DVD and TV sales. In this case it is not unreasonable to assume that Paramount spent up to, but not more than, its share of the box office take which, we show later, we estimate at £655,039.00.

c) DVD Costs – Production and Marketing

DVD costs – replication, packaging, shipping and marketing are assumed to average £4 a unit (based on standard industry assumptions for a DVD release of this size).

d) TV sales costs

TV sales costs are assumed to be minimal – contracts are reasonably standard and negotiation is straightforward, as only a few possible TV buyers exist in the UK market.

Income

a) Theatrical income

The UK box office was £935,770. A successful theatrical film makes money for the producer, the distributor and the exhibitor (cinemas). We can estimate with confidence the share taken by the exhibitors as this is a reasonably standardised deal. In the UK cinemas take around 30% of the box office – passing the rest to the distributor.¹⁷

70% of £935,770 = £655,039.

¹⁷ according to the Film Finance Handbook 2007

b) DVD income

The DVD units sold are public domain information – 232,000 units. Income is estimated at 232,000 units x £8¹⁸ - £1,856,000.

DVD rental figures were 165,000¹⁹. This is the number of times the film was rented or ‘turns’ and would be expected to translate to around 10,000 copies sold to rental companies. These copies were typically sold at a higher rate than retail DVDs in 2006 – with a high profit margin – usually around £19 a copy, making the DVD rental income for the distributor around £190,000.

c) TV income

The film sold to SKY for the UK premiere and to C4 for the network premiere. TV sales are estimated, based on based on equivalent TV documentary feature film acquisitions, at £100,000 for SKY and £60,000 for C4.

Profit and Loss

Platforms	revenues	costs	Profit
Cinema	655,039	655,039	0
DVD sales - 232,000 units	1,856,000	928,000	928,000
DVD rental	190,000	0	190,000
SKY cable (multiple screenings)	100,000	0	100,000
Channel 4	60,000	0	60,000
Total	2,861,039	1,583,039	1,278,000

Return on Investment	
3.59% budget allocated against UK	£19,027
distribution costs	£1,583,039
total costs in the UK	£1,602,066
revenues	£2,861,039
estimated profits	£1,258,973
ROCE	0.79

This paper estimates a profit of £1,278,000 for AIT in the UK – representing a return on investment for the producer and distributor of 79p for every £1 invested²⁰.

¹⁸ the film was initially sold at £15 by most retailers and then discounted.

¹⁹ Supplied by UKFC Research and Statistics Unit

²⁰ Even if the entire production budget of the film were allocated to the UK profit and loss account, the ROCE is still a healthy 0.35

5. PUBLIC GOOD VALUATION

a) VALUING THE EXTERNALITIES

The first and perhaps most common sense way to value the film would be to assess its effects, on people, companies, government and through them on the environment. These effects are, in economic terms called externalities as they don't contribute to the film's bottom line.

Externalities are the unintended by-products of economic activities, either positive or negative, which are not reflected in the price and which are usually enjoyed or borne by third parties. So a negative externality of some manufacturing goods which some people make and others sell is pollution for those that live near the factory. Positive externalities have become important in cultural economics in the last decade in helping events such as festivals or cultural institutions such as museums claim the positive effects they have for local communities and national economies, outside of those that attend them directly. So a museum can try to value both the educational effect it has for local children, the increase in tourism it delivers and the increased trade to local shopkeepers from visitors arriving and leaving.

An Inconvenient Truth, unlike many films, is not art for art's sake or entertainment for entertainment's sake. It uses an art form to try to have an internal effect on the viewer's mentality, which will in itself have an external effect on the world due to the that person's new actions and changed habitual behaviour. It uses an art form, documentary, to affect behavioural change.

In economic terms any behaviour changes that came around from viewing the film can be seen as externalities and attempts can be made to calculate their value. Let's consider the changes that might be made by both individuals and companies.

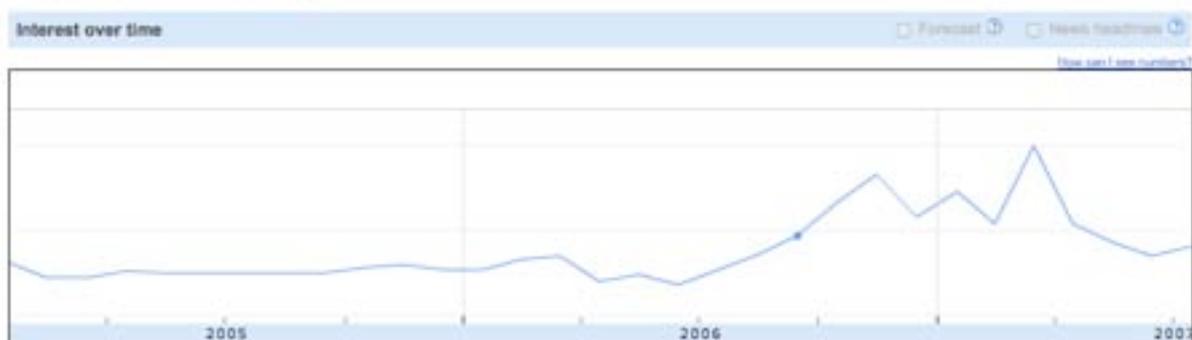
Individuals:

The content of the film does not directly concern the changes that viewers should make afterwards but there is information given right at the end of the film about 10 things everyone can do to cut emissions:

1. Change a light bulb.
2. Drive less.
3. Recycle more.
4. Check your tyres
5. Use less hot water
6. Avoid products with a lot of packaging.
7. Move your thermostat down 2° in winter and up 2° in summer.
8. Plant a tree
9. Turn off electronic devices.
10. Be part of the solution

One approach might be to track these recommended behaviours before and after the film's release, however because the recommendations are delivered as a list at the end of the film, their impact is arguably doubtful. Many of them are in any case difficult to track with hard data, such as whether people turn off devices. The numbers of environmental light-bulbs sold before and after the film is perhaps the easiest to track. Google Insight reveals that the number of people searching for "energy efficient light bulb" in the UK appeared to climb significantly around the time of the film's release [dot on graph shows September 2006].

Web Search Interest: "energy saving lightbulbs"
United Kingdom, Jan 2005 - Jul 2007
Categories: Home & Garden (10-25%)



That said, it is exceptionally difficult to exclude other major influences on these light bulb sales such as in-store promotions, government advertising and the work of other campaign groups around this time.

One study in the US, faced with this problem, came up with an ingenious solution. Grant Jackobsen from the University of California-Santa Barbara wrote a paper testing whether the documentary caused an increase in the purchase of voluntary carbon offsets. He requested the 1,389 US Zip codes where the film was shown from Paramount Vantage and found that in the two months following the film's release, zip codes within a 10-mile radius of a zip code where the film was shown experienced a 50 percent increase in the purchase of voluntary carbon offsets compared with zip codes where the film was not shown. This is strongly indicative that the film did effect the behaviour of audiences and it is hard to imagine that the purchasing of carbon offsets was isolated behaviour that did not also include some of these other carbon saving habits.²¹

The other way to assess individual behaviour change as a result of the film would be via survey work. However people's self-reporting of positive behaviour changes is notoriously flawed (we all flatter ourselves we are better people than we are it seems). This has been particularly well studied around voting behaviour: Kevin Swaddle and Anthony Heath used the 1987 British General Election Study to establish that 11% of respondents claimed to have voted and in fact cannot possibly have done so, given the actual turnout.

To allow an assessment of the influence of AIT, people would not only need to report honesty but also accurately, remembering what behaviours they changed, when, and which behaviours they changed as a result of watching the film.

In conclusion it might have been possible to rigorously assess behavioural changes at the individual level if a methodology had been put in place (such as randomly choosing a sample audience and a control group of non-viewers) before the film's

²¹ Presumably however theatres were chosen where local populations were more likely to purchase carbon offsets which may partly explain the result. Theatres would need to have been chosen at random for a more robust result.

release. However, as this was not done, the evidence that exists is suggestive, albeit strongly, at best. So whilst we can be sure the film created positive externalities through individual behaviour changes, the challenges of accurately collecting this data are too great to be overcome.

Companies

Paramount, the distributor and Clownfish marketing identified companies as a key audience for the film.

CEOs and heads of CSR from the following companies (and a dozen others) attended a private screening hosted by Zac Goldsmith – multi-millionaire and then editor of the Ecologist magazine:

Waitrose, BAA, Marks and Spencer, ASDA, John Lewis, Innocent Drinks, Kimberley-Clark, Fujitsu, Disney, Nike, The Times and Sunday Times, Financial Times.

Some of these companies such as Marks and Spencer and John Lewis then committed to group sales of tickets to the film for other employees and decision makers to attend. Other major UK corporations also booked including:

Barclays, BT, BP, Carphone Warehouse, EMAP, Goldman Sachs, Anglo American and NPower and SKY. Taken together these screenings reached executives from companies representing a sizeable slice of the UK economy.

Some leaders went on the record to say that the film led to changes in company policy. SKY declared itself the first carbon-neutral broadcaster in 2006 by calculating its carbon footprint and paying off-sets for tree planting. But perhaps the best example is Marks and Spencer (M&S).

Stuart Rose read Al Gore's book on holiday.

*"I came back and I said .. "why don't we show the film to the top 100 people in the company?" ... Well, it was a bit long, wasn't it? But I took them to the cinema in Curzon Street, and at the end of the day they loved it. They were all on the email the next day saying, "That was fantastic! What can we do? Dada da di da ..." So from that point on, we thought, "OK, we've got to do some thing. What can we do? What?" And then we came up with Plan A."*²²

M&S adopted Plan A in January 2007 pledging to invest around £200 million over the next 5 years in transforming the core business. In 2010 the company announced its next 5 year targets taking the initiative to 2015 with the company website states "the ultimate goal of becoming the world's most sustainable major retailer". Furthermore they say they are on track "to become carbon neutral by 2012 in our UK and Republic of Ireland operations. We're doing this by both reducing our energy consumption and increasing our use of renewable electricity, only using offsetting as a last resort".

Clearly it would be possible to calculate the carbon emissions by the Plan A initiative between 2007 and today. And to translate that into a financial figure by using the current trading cost of carbon dioxide (17 Euros a ton in March 2011) or possibly the proposed European Commission tax of €20 Euros a tonne.

M&S declared that the Plan had cut carbon dioxide (CO₂)

emissions by 40,000 tonnes in the 2009/10 financial year alone²³ – which at €17 a tonne would translate to €680,000 for that year alone.

M&S was not the only such company and in theory it would be possible to interview a selection of UK companies, to discover if corporate policy had changed as a result of the film and, if so, gather facts and figures on the carbon impact of these changes, in order to generate a national estimate for carbon costs saved by the film.

²² Stuart Rose interview Observer Sunday 15 April 2007

²³ Press release 01 March 2010 - Marks & Spencer launches programme to be World's most sustainable retailer by 2015

However in practice this would be extremely difficult to do. It may not be known within companies today whether the film was an important influencer of past decisions, and in any case companies might prefer to be seen as independent of influence. And even if the film was known to have influenced changes, not all companies have the data readily available as to the exact impact of the changes, or once again may be unwilling to share it. Most of these problems could be overcome with time and money for a research team at an established company who could guarantee respondents anonymity and indeed pay for the internal research time for the data to be gathered. But without such resources, this paper can only point to the methodology appropriate rather than implement it.

b) VALUING THE CAMPAIGN

It may not be possible to value all the externalities but we can focus just on the public awareness of climate change that the film created, one important externality which is easier to isolate and measure.

Marketing executives for both consumer goods and services and for non-governmental organisations (NGOs) and campaigning organisations have to constantly assess the value of their campaigns. One way to assess the public good value of *An Inconvenient Truth* is to treat it simply as a public informational campaign and there is evidence from the US that the film was a successful tool for changing opinions.

The Pew Research Centre in Washington has since 1987 conducted on-going research looking at US citizens' attitudes to climate change. In May 2008 it produced a report called *A Deeper Partisan Divide Over Global Warming* which included the following table.

	June 2006	July 2006	Aug 2006	Jan 2007	April 2008
Is there solid evidence the earth is warming?	%	%	%	%	%
Yes	70	79	77	77	71
Because of human activity	41	50	47	47	47
Because of environ. patterns	21	23	20	20	18
Don't know	8	6	10	10	6
No	20	17	17	16	21
Mixed/Don't know	10	4	6	7	8
	100	100	100	100	100

Given that *An Inconvenient Truth* was released in the US between June and July 2006, these data are consistent with the film having significantly increased the numbers of people believing in climate change caused by human activity from 70% to 79% - a 12.8% jump.

However, the American experience has been that those gains were not sustained. By April 2008 that figure had slipped back to 71%. Though the percentage believing that climate change is due to human activity remained at 47%, up from 41% before the film – a sustained 12.8% increase.

The UK is not the same as the US, but assuming that the film carried a reasonably effective message in both territories, we can begin to value the campaign's impact in the UK with an assessment of how many people saw the film.

Viewers

Platforms	audience numbers
Cinema	175,000
partner screenings	1,500
DVD sales (2 x number sold)	464,000
DVD rental	165,000
SKY cable (multiple screenings)	211,000
Channel 4	803,000
schools	Unknown
piracy	Unknown
Total	1,819,500

The audience numbers above suggest that 1,819,500 people or 3.7% of the UK population saw the film²⁴. But this is likely to be a significant underestimate: it excludes the audiences at around 4000 schools²⁵ and also does not allow for those that saw the film through illegal channels. It assumes also that there was on average only an audience of 2 for each purchased DVD and 1 for each rented DVD, which again is likely to be an underestimate.

In fact, YouGov surveys commissioned for this paper in July 2009 and May 2010 indicated that 12% and 8% of the UK population had seen the film respectively.

The difference between these figures and the known audiences we can identify – 1,819,500 or 3% of the population – is likely explained by (i) the actual average audience per DVD over the four year period since the DVD's release exceeding the conservative numbers we have assumed (no industry estimates exist of the number of different people who watch a typical DVD), (ii) the high numbers who watched pirated copies of the film and (iii) three years of school screenings.

For the purposes of this paper we conservatively take the lower of the two surveys and assume 8% or 4,947,052 people viewed the film.

24 adult population taken as 49,433,600 – 2009 Source: National Office of Statistics

25 figure reported by the Telegraph 11th Oct 2007

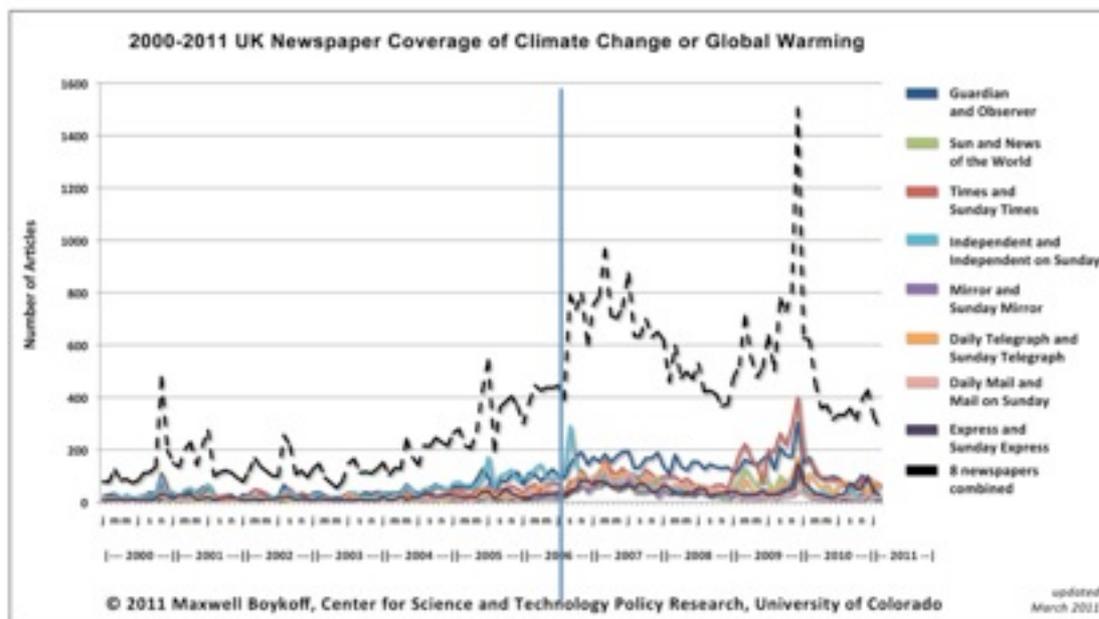
Yet, even an audience of almost 5 million viewers understates the film's reach since:

- 1) not all viewers are equal. The Chief executives of BSkyB and Marks and Spencer were amongst viewers whose subsequent greening of their companies had a greater effect than the changes made by other viewers.
- 2) many non-viewers were also likely indirectly influenced by the film.

Non-viewers

The film received a very large amount of publicity with many articles summarising the film's main points, including interview material with Al Gore. Premiere PR which was engaged by Paramount to publicise the film filed a final internal report which details the press articles achieved.

However, the press impact was almost certainly wider than the articles about the film itself. Max Boycoff, an environmental economist, has studied the relationship between media and climate change and his work shows how the film seems to have permanently increased the level of press interest in climate change. The chart below shows the number of press articles on the subject.



The blue line marks the point that the film was released in the UK. The effect of the film's UK general release - the large press footprint Premiere press agency were responsible for - can be seen in September 2006, but what is interesting is that this level of press is maintained. Moreover, it is made up of newspapers across the class and political spectrum including The Sun, The Mail and the Daily Telegraph as well as more predictable sources such as the Guardian and Independent.

The press footprint the film achieved can be valued. Premiere's work for Paramount wasn't given a valuation or Advertising Value Equivalency (AVE). In such an analysis, all coverage is given an estimated 'value' against press coverage, had it been placed as paid for advertising. Each article is analysed individually and the relevance of the target content to the whole is considered. The column area is then measured and a calculation is made using the most up-to-date, published advertising rates. Each individual item is evaluated by a fully trained AVE analyst to indicate how much it would have cost to have achieved the same level of awareness by buying adverts instead of having made the film.

We can estimate the AVE value for An Inconvenient Truth. A YouGov survey commissioned for this paper in July 2009 indicated that 57% of the UK population had heard of An Inconvenient Truth. 67% of them had heard about the film through the media coverage and so we can estimate that 27% of the UK population heard of the film in this way.

Are you aware of the documentary "An Inconvenient Truth" presented by Al Gore a former Vice president of the United States?

Unweighted Base	1995
Base	1995
Yes I am and I have seen it	12%
Yes I am but I have NOT seen it	45%
No I am not	40%
Don't know	3%

Through which, if any, of the following sources did you hear about this documentary? [Please tick all that apply]

Unweighted Base	1203
Base	1145
The film's own advertising	28%
Any other media coverage	67%
Word of mouth (i.e. friends, family, colleagues etc.)	30%
Awards (i.e. Oscar, Nobel etc.)	16%
Internet searches	8%
Other	6%
Don't know	3%

We can give the AVE a value by using another social issue documentary *The End of the Line*, as a proxy. This film, about the crisis in world fish stocks, was released in the UK in 2009²⁶ and garnered considerable press interest, political attention (both Conservatives and Labour played a short version of the film at their party conferences in 2009) and corporate attention (Waitrose backed the film and various brands such as Pret a Manger and Whiskas changed over to sustainable buying as a result of the film).

The Channel 4 BRITDOC Foundation²⁷ conducted an evaluation report of the film including a YouGov survey which indicated that 9% of the UK population had heard about it through the extensive press coverage. Mediagen, a leading provider of press cuttings and media intelligence services, were hired to conduct a full press assessment of *The End of the Line's* media coverage. They gave the film an AVE valuation of £1,244,000. Given that *The End of the Line* reached only a third of the UK public that an Inconvenient Truth appears to have reached, we can give AIT's press coverage a proxy measure of £3,732,000.

²⁶ The author was involved in the evaluation study of this film, released in January 2011 at www.britdoc.org/evaluation

²⁷ the author is CEO of this organisation.

The press footprint of the film does not of course represent all the film's externalities but gives a concrete value which can act as a proxy for how large the externalities might have been in terms of raising awareness of climate change.

c) CALCULATING THE INTRINSIC VALUE

As we have seen, it's not always possible to accurately measure the externalities an enterprise creates. And even if it is possible to *measure* them, it may not be possible to *value* them. Reducing CO2 can be valued as CO2 credits are traded and, as we have seen, awareness-raising through press coverage can also be valued. But whilst we might be able to measure changes a film causes such as the number of political prisoners released from jail or the number of children inspired to play piano we would be hard pressed to give these a \$ value using market proxies.

Proponents of public spending on arts and culture are familiar with these difficulties of quantifying the value of all outputs or externalities. To ensure estimates of the economic value of culture do not have major gaps, economists have borrowed contingent valuation methods (CVM including "willingness to pay" (WTP)) from the environmental valuation literature which look to value artistic activities not by their observed externalities (jobs created, tickets sold etc) but by the value placed on them by citizens when asked. Crucially, this enables economists to capture the value that the arts have for citizens, even if they don't attend arts events themselves.

Jeanette D Snowball, a leading cultural economist in South Africa writes:

"Much of the case for the public support of the arts stems from the argument that the arts, whilst not a purely public good, do have some public health good characteristics, along the same lines as education and health".²⁸

In 'Measuring Intrinsic Value: How to stop worrying and love economics', Hasan Bakhshi (Director for Creative Industries at NESTA), Alan Freeman and Graham Hitchen, state:

"'Good' economics – the rigorous application of cultural economics – can thus reverse a traditional but obstructive line-up which pits economists, cast as architects of instrumentalism and all things philistine, against arts leaders, cast as beleaguered defendants of intrinsic value and all things aesthetic."

28 Measuring the Value of Culture

To the author's knowledge there has never previously been a WTP study of a film but AIT provides a strong candidate both because the film is very well known amongst the British public and so it is possible to question its value to the non-audience, and because there are strong educational and political reasons for the public to value the film beyond the viewing experience.

Emergence of Willingness to Pay studies

This kind of valuation was popularized after the Exxon Valdez oil disaster off the coast of Alaska in 1989 when it was used by the state and the US government to calculate the damages Exxon should pay for the devastation to the natural habitat. Contingent valuations surveys were already in use by environmental economists, in order to ascribe a dollar value to things like clean air and biodiversity in forests which had previously been attributed with no economic value. In the Exxon case, a huge willingness to pay study was launched in 1990 which sought to establish the value American households placed on The Prince William Sound, the waters where the spill had occurred.

The results suggested that householders were willing to pay \$2.8 billion in taxes for escort ships to accompany oil tankers safely. This gave a dollar figure to the value of the waters and was instrumental in framing the final amount, settled out of court.

The United States National Oceanic and Atmospheric Administration (NOAA) used two Nobel prize-winning economists (Kenneth Arrow and Robert Solow) to chair a panel whose job was to critically assess the validity of the CV approach and to approve the methodology. Their report (Arrow et al 1993) concluded "*that CV studies can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive-use values*".²⁹

29 Report of the NOAA-Panel on Contingent Valuation

Debate over CV studies

Many criticisms can be made of this approach, and indeed were made by Exxon lawyers at the time. For example, respondents are being asked to consider a hypothetical market, not a real one. It is believed that this could lead to over-estimates in WTP studies: after all, it's easier to agree to pay for something in theory than it is in practice. Snowball also talks about the free-rider problem, in that some people may over-state their valuation of the good, knowing that they wouldn't *actually* pay, in order to advocate for others paying. She also points to the fact that respondents may simply be unrealistic about their purchasing power, they may be supportive of the good but have over-estimated their ability to back that up. Peter Diamond and Jerry Hausman wrote an article in 1994 for the Journal of Economic Perspectives entitled "*Contingent Valuation: Is Some Number Better than No Number.*" in which they concluded that CV surveys can only be viewed as opinion polls on possible government actions as they do not truly measure the preferences they attempt to.

Other academics disagree, Richard Carson from the department of Economics at the University of California is one of the most prolific researchers of CV methodology and he points to the improvements and refinements that have been made in the field:

"The recent debate surrounding the use of CV is, to some degree, simply a reflection of the large sums at stake in major environmental decisions involving passive use and the general distrust that many economists have for information collected from surveys. In an academic context, that debate has often been healthy. CV research has matured as a result of the spotlight that has been placed upon it. The theoretical foundation underlying CV has been elaborated and many problems of empirical measurement usually ignored or avoided by economists are highlighted by its use".³⁰

Certainly use of CV and WTP studies is growing around the world. In 2003, the British Library used them to estimate that it provides over £363 million in value each year, mostly to people who do not visit the library personally. Significantly, this was around 4.4 times its annual public funding, which allows for some over-estimation and

30 Carson et Al, 1996

still provides a strong argument for continued or increased support. (Pung, Clarke and Patten, 2004).

Recommended Methodology

The NOAA report detailed an extensive set of guidelines for CV surveys, their administration, and analysis saying " . . . *the more closely the guidelines are followed, the more reliable the result will be*"³¹. In particular, they drew attention to several key requirements and drew attention to potential reasons for failure:

- a high non-response rate to the entire survey or to the valuation question.
- inadequate responsiveness to the scope of the environmental insult.
- lack of understanding of the task by the respondents.
- lack of belief in the full restoration scenario.
- 'yes' or 'no' votes on the hypothetical referendums that are not followed up or explained by making reference to the cost and/or the value of the program".

Richard Carson, who has studied many subsequent CV studies, adds:

"The designer of a CV study must make the good to be valued understandable to the population of interest.

The designer needs to convey enough detailed information to convince respondents that the supplier will be able to deliver the good.

The payment mechanism must be credible to respondents so that they believe that they actually could have to pay for the good.

Finally, to ensure respondents provide thoughtful responses to the questions, they need to be told that the information they are providing will be used in the decision-making process.

*...All of this must be done without overwhelming respondents with large amounts of information that they find extraneous to the choice being offered."*³²

31 Arrow et al., 1993

32 Carson et Al, Contingent Valuation: Controversies and Evidence

Carson accepts mail surveys as well as in-person surveys, although notes that in-person is preferable as it reduces sample bias (those that choose to return the survey are more likely to support the good in question) and provides more control of information. In general, he warns that poor quality sampling, giving samples that are not representative of the relevant population of interest, is a frequent problem in CV studies.

The WTP study of *An Inconvenient Truth*

The author of this paper commissioned YouGov to conduct a WTP study for AIT. The aim of the survey was to capture the unrealized value, beyond the box office, that the film had created for audiences and non-audiences.

Three introductory questions were asked

- | | |
|---|---|
| <p>1 Did you see the film An Inconvenient Truth?</p> <p>did you pay to see at cinema?</p> <p>did you buy it on DVD?</p> <p>I saw it for free on TV/DVD at a screening</p> <p>can't remember which</p> | <p>if NO go to 9</p> <p>if YES continue</p> <p>Y/N</p> <p>Y/N</p> <p>Y/N</p> <p>Y/N</p> |
| <p>2 Do you agree with the film's message that man causes climate change and we need to modify behaviour?</p> | <p>if NO - end of survey</p> <p>if YES - go to 3</p> |
| <p>3 Do you think that An Inconvenient Truth was important in communicating the message about climate change to ordinary people?</p> | <p>if NO - end of survey</p> <p>if YES - go to 4</p> |

For clarity and ease, it was assumed that the film would have no value for those who either fundamentally disagreed with the film's message, or who agreed with the message but believed the film had done a poor job of conveying it.³³

People who both agreed with the message of the film and believed the film was effective in conveying it were then asked to give a hypothetical value to the film's existence. This included both people who had seen the film and those who had only heard about it.

- 4 Imagine a scenario in which An Inconvenient Truth had been made but had not been seen by anyone. Given that it was an important film with a message you agreed, in this scenario, what amount of money would you have been prepared to pay to ensure the film was released in cinemas and on TV where it could be seen and influence people?
- | | | |
|---|---------------------------|-----------------------------|
| a | would you pay £7? | if NO go to e. If YES, b |
| b | would you pay £14 | if NO - end. If YES, c |
| c | would you pay £28? | if NO - end. If YES, c |
| d | how much would you pay? | end |
| e | would you pay 3.50? | if NO, go to f. If YES, end |
| f | would you pay any amount? | end |

They are asked to imagine that the film could not be distributed without their donation. They are offered a £7 prompt as a starting value since this was a common cinema ticket cost in 2006. In WTP studies respondents should not be asked to name their own figure without any anchoring³⁴. By their nature, such studies try to put a value on things which don't currently have a market value. This makes it difficult for respondents to pull a number from thin air. Instead they are asked to start by considering whether they agree or disagree with a starting value. If they say yes to the £7 value, the amount is doubled up to £14 and if they say no, is halved to £3.50 and the question asked again. If the respondent says no to £3.50, they are asked if

33 This approach assumes that the film has no value to people who disagreed with its message or approach. Admittedly there maybe some people who valued the debate despite disagreeing with the outcome. Also it's possible that people who disagreed strongly with the film's message may put a value on the film not existing. Further studies of documentaries, could investigate both these assumptions.

34 The NOAA (1993) recommendation was that the dichotomous choice method (DC) as opposed to the open ended (OE) format is the only way to elicit meaningful bids.

there is any amount they would pay. If they say yes to £14, the amount doubles again to £28 and if they say yes to this, they are asked to state the amount they would pay.

This is a recommended WTP approach, offering respondents an actual amount to react to, and then determining whether they would go higher, or lower. It is called the iterative bid (IB) approach and is recommended by Vossler and McKee who tested four different question formats in laboratory experiments in 2006. Respondents are only asked to name their own figure if their response is unusually high or low.

The survey was carried out between 4th and 6th May 2010 to 2128 British adults in the UK by online survey. You Gov state that their methodology is to take respondents from a panel of 185,000+ individuals who have agreed to take part in surveys. Emails are sent at random. The usual response rate is between 35-50% and the sample is then weighted to provide a representative reporting sample.

RESULTS

Questions asked of 2128 respondents

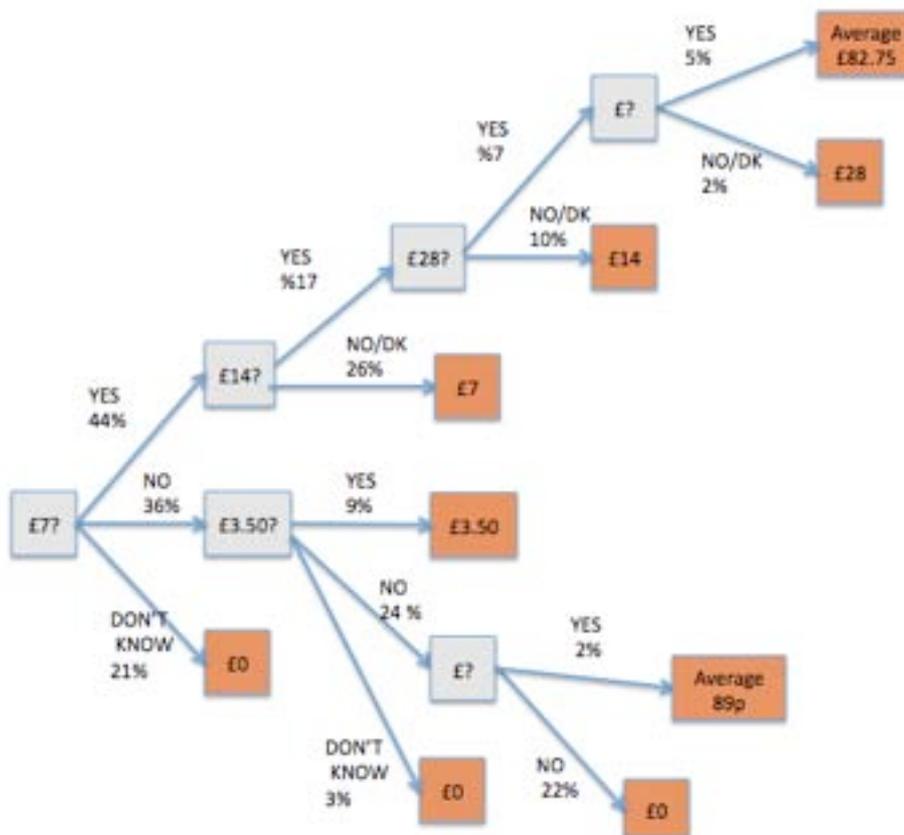
1	Did you see the film An Inconvenient Truth?	No/ don't know	91%
		Yes	8%
	did you pay to see at cinema?	Y/N	1%
	did you buy it on DVD?	Y/N	1%
	I saw it for free on TV/DVD at a screening can't remember which	Y/N Y/N	4% 2%
2	Do you agree with the film's message that man causes climate change and we need to modify behaviour?	strongly agree	11%
		agree	23%
		neither	13%
		disagree	9%
		strongly disagree	4%
		don't know	39%
3	Do you think that An Inconvenient Truth was important in communicating the message about climate change to ordinary people?	very	7%
		somewhat	18%
		not very	10%
		not at all	5%
		don't know	60%

394 respondents (18.5% of respondents) agreed that the film was both right in its message and important in communicating it. This group were asked the following questions

4	Imagine a scenario in which An Inconvenient Truth had been made but had not been seen by anyone. Given that it was an important film with a message you agreed, in this scenario, what amount of money would you have been prepared to pay to ensure the film was released in cinemas and on TV where it could be seen and influence people?	£0	46%
		£0.89	2%
		£3.50	9%
		£7.00	26%
		£14.00	10%
		£28.00	2%
		£82.75	5%
			100%

The following graphic shows how the results for question 4 were obtained. The results are displayed as a decision tree which models how the respondents were taken through the questions.

The grey boxes show the amount being questioned “would you pay £14?” and the orange boxes show the end of the branches of the decision tree with the final monetary amount and the percentage of overall respondents (from the group of 394) who ended there.



18% of the people who took the survey both agreed with the film’s message and thought it an important communication tool for that message.

Of those people 54% or 9.72% were willing to pay to ensure the film was seen.

So in total almost 10% of the public were willing to support the film financially to ensure it was seen.

How statistically significant are the results?

The survey gives much less data than a typical Willingness to pay scenario and asks less preliminary questions about the film and its value both due to cost constraints. Also the recommended WTP methodology (Arrow et al) is in person, ideally door to door whereas the method used here was online polling, again due to cost. The reason that door to door is preferred by Arrow is that it leaves room for respondents initially confused by the process of a hypothetical, to ask questions.

On the other hand the subject of the study was a famous film with well-known goals ('Al Gore's climate change film') and so more preliminary questions may arguably have been less necessary. Also, the survey was completed by over 2000 adult respondents, chosen by YouGov to be representative of the general UK population and is the same sample size as used by government and newspapers for surveys for public attention.

And in order to compensate for the lack of questioning, it was decided that any respondent who returned an answer of "not sure" to the first WTP question (asking if they would pay £7) would be treated not as a "no" response and moved to the next question of asking if they would pay £3.50, but simply have their responses terminated there. This was to limit false positive results from people who didn't understand the survey.

Overall, for all these reasons, we argue that the results are sufficiently robust and statistically significant for an exploratory survey.

ANALYSIS OF RESULTS

We can use the findings of the CV survey to calculate an intrinsic value for the film by multiplying up the survey results to a national scale using the assumption that the adult British population is 49,433,600.³⁵

Our survey found that 9.72% of the public would have been willing to pay something to ensure the film was seen. This translates to 4,804,946 people nationwide.

³⁵ The Office of National Statistics estimated resident population of the UK was 61,792,000 in mid-2009 with children accounting for one fifth.

Don't agree with film	82%	40535552
Agree but unwilling to pay	8.28%	4093102
Wiling to Pay	9.72%	4804946
Total British adult population	100%	49,433,600

The willingness to pay study gave a range of values from respondents of between 20p to £500. 4% of people that named their own figure below £3.50 and this was averaged at £89p whilst 9% of people named their own figure above £28 and again this was averaged, this time at £82.75.

Overall the study group willing to pay broke down as follows.

	value	%
Willing to Pay - average	£0.89	4
Willing to Pay - agreed value	£3.50	17
Willing to Pay - agreed value	£7.00	48
Willing to Pay - agreed value	£14.00	19
Willing to Pay - agreed value	£28.00	4
Willing to Pay - average	£82.75	9
		100

Assuming that the study results would be replicated nationwide we can assume that of the 9.72% (or 4,804,946) of the public who would be willing to pay, 4% of them would contribute 89p, and 17% would contribute £3.50 and so on.

	value	%	population	total
Willing to Pay - average	£0.89	4	177961	£158,385
Willing to Pay - agreed value	£3.50	17	800824	£2,802,885
Willing to Pay - agreed value	£7.00	48	2313492	£16,194,447
Willing to Pay - agreed value	£14.00	19	889805	£12,457,267
Willing to Pay - agreed value	£28.00	4	177961	£4,982,907
Willing to Pay - average	£82.75	9	444902	£36,815,674
		100	4,804,946	£73,411,565

This gives the film an intrinsic valuation of £73,411,565.

Analysing the data further there is, perhaps unsurprisingly, little difference between the willingness to pay of men and women but nor was much difference between social grades with ABC1 answering very similarly to CDE2³⁶, perhaps contradicting ideas that the environment is a more middle class pre-occupation.³⁷ Londoners were significantly more willing to pay than the Welsh but the Scottish were almost as likely as Londoners.

Sensitivity analysis

Many assumptions go into a WTP study such as this. Some may be less significant than others.

For instance one respondent reported a willingness to pay of £100,000 and had it been included, the overall result of the survey would have been very 3 times higher. The result was clearly an outlier from the other 2127 data points (the next highest hypothetical donation was £500) and because of the sensitivity of the calculation to that one assumption (that it was a reliable result) it was excluded.

The initial anchor value was £7, based on the assumption that there would be a relationship in people's minds between the value of a cinema ticket and the value of the film to them. The average hypothetical donation was £8.25, notable quite close albeit slightly higher than this anchor and suggesting that the figure somewhat shaped the results (indeed as one expects from an anchor value). Further studies could take an A/B testing approach and see how far results differed with different initial anchors and averaging results.

36 These are NRS social grades – a system of demographic classification and standard in market research. A is upper middle class and D is working class.

37 The Pew Research Centre's 2009 Global Middle Class report found that "Middle-class respondents in many countries are more likely to consider global warming a very serious problem; and they are more likely to say that pollution is a very big problem for their country".

6. SOCIAL RETURN ON INVESTMENT CALCULATIONS

Chapter 4 produced an estimate of AIT's private value. Chapter 5 contained two competing public value estimates. The first was based on the film's campaign or press value, a proxy for the only externality (awareness raising) we were able to value. The second was based on an original willingness to pay study.

In summary, the main valuation figures are as follows

Estimated profits UK	1,258,973
Campaign valuation	3,732,000
Willingness to Pay valuation	73,411,565
Estimated Investment (total UK costs)	1,292,733

These estimates enable us to complete a SROI analysis.

The basic financial return on investment ratio, valuing the private good only, is roughly £1:1:

Estimated profits UK	1,258,973
Estimated Investment (total UK costs)	1,292,733
Return on Investment	1.0

But what about the *social* return on investment?

We have the data for two different calculations: firstly, the financial profitability plus the campaign value, which represents both the return on investment of the actual financial performance of the film (private good) plus a proxy for the public awareness value (public good) which give a figure of £3.9:1. This valuation would ideally have included a valuation of all other externalities such as the value of all behaviour change because of the film but, as we have seen, these figures were not obtainable within the confines of this study.

campaign value	3,732,000
Estimated Investment	1,292,733
Social Return on Investment	2.9

Combining the profit and campaign value gives us the Blended Return on Investment

Estimated profits + campaign value	4,990,973
Estimated Investment	1,292,733
Blended Return on Investment	3.9

Alternatively we can calculate a SROI using the intrinsic valuation delivered by the willingness to pay study. In this case, the financial value is not added since the contingent valuations capture the private good value individuals place on the film as well as the public good. This valuation gives a figure of £56.8:1

Willingness to Pay valuation	73,411,565
Estimated Investment	1,292,733
Social Return on Investment	56.8

This is a wider valuation which not only includes the value the public place on the public information aspects of the film (captured by the campaign value above) but also their value of the other perceived externalities such as political influence, corporate and private changes leading to carbon dioxide reduction.

Sensitivity Analysis

The return on investment ratio is sensitive to changes above and below the line. The most uncertain of these figures is the investment cost of the film.

Assumptions had to be made in Chapter 4 about the costs and therefore profitability of the film given the lack of public data (the income figures were largely in the public domain). What happens if those assumptions were wide of the mark? If the investment costs were 50% higher than assumed or 50% lower?

Willingness to Pay valuation	73,411,565
Estimated Investment – 50% higher	1,939,099
Social Return on Investment	37.9

Willingness to Pay valuation	73,411,565
Estimated Investment – 50% lower	646,366
Social Return on Investment	113.6

This shows that the results are reasonable sensitive to these assumptions. A 50% higher investment figure only changes the results from 57:1 to 38:1 or a 33% drop and a 50% lower investment figure and the ratio is over twice as large at 114:1.

Further studies may be able to improve on these results by obtaining more certain investment data from distributors, either because those films are with less opaque companies or because such companies start to see the value of such studies in opening up new sources of investment.

7. IMPLICATIONS AND CONCLUSIONS

Jeff Skoll has suggested a social return on investment expectation of up to 20 times the investment into social issue films such as *An Inconvenient Truth*. This paper suggests that he should feel extremely satisfied with his film's performance. The baseline willingness to pay estimates we present here suggests that it may be as high as 57:1.

We have touched on the limitations of this study throughout. Assumptions have had to be made about the film's costs and profits, and the willingness to pay estimates are based on a shorter survey instrument than we would ideally have liked. In any case they require that respondents understand a hypothetical situation and their responses reflect how they would actually behave in a real situation. The initial anchor figure suggested to respondents as a price also undoubtedly shapes the final result. But, for all that, a clear picture emerges of a film that made a considerable public impact and was valued by a significant section of the population. Our study suggest ten times as many people would support a film like *An Inconvenient Truth* and its messages than are members of a political party in Britain.³⁸

Looking forward, what implications does this paper have for the valuations of other social justice documentaries?

This paper outlined two different approaches to valuation of social issue film: – valuing the film's externalities (including use of press value) or coming to an intrinsic valuation via a WTP study.

Valuing individual sources of externalities is more likely to be complex, time consuming and costly. Films, by their nature, each address different subjects and stories in different ways. They will therefore create different kinds of outputs: behaviour change (consumption, voting etc), public awareness, fund raising for causes, corporate or political change. Some of these will be easier to measure than others and therefore be more appropriate for some films than others. Certainly the chance of success of

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capturing these outputs is vastly improved by putting the evaluation methods in place *before* the film is released (rather than trying to shut the stable door after the horse has bolted). But capturing them is only the beginning, they need also to be valued in economic terms. This is easier for some outputs than others, fundraising is perhaps the most straightforward. There are value proxies for public awareness, as we have seen these have a market value but not everything is easy to put a price on such as the release of a political leader from house arrest in Burma.

Willingness to pay studies offer a way for films to be valued without individual externalities being measured. This offers an evaluation for films where the sources of the externalities cannot be measured either because it's too late (*An Inconvenient Truth*) or because the externalities are too hard to capture (an increase in empathy, a greater appreciation of art) or because there are insufficient time and financial resources to do so. They also overcome the issue of translating effects into economic value since this is being done by each respondent when they give the film a personal economic value.

WTP studies also offer a way to compare the impact of different films. If the same agreed methodology, parameters and anchor value were used to study a range of films, it would provide comparable results for *An Inconvenient Truth* and other high profile documentaries such as *Super Size Me*, *Jamie's School Dinners*, *The Age of Stupid* and *The End of the Line*. Smaller films with more local than national impact could also be valued in the same way, competing with bigger films on the basis of their SROI which looks at the cost effectiveness of impact by dividing the intrinsic value by the cost of the film and campaign.

There is another very significant role WTP studies can play and that is to establish the need for films to be made in the first place. Based on public knowledge of the influence of films like *An Inconvenient Truth*, studies could establish how much they would value a similar film on another issue or area of concern. This would assist funders in deciding where to allocate resources. These studies could also be used to establish how much public service media spending (for instance what percentage of BBC license fee and public film funding) the public would like to see spent on social documentaries as opposed to other options. The results could help the documentary sector as a whole to lobby for greater resources and status.

For all these reasons willingness to pay methodology is a huge asset to the documentary community. What we need now is more examples and more case studies. Hopefully this paper will encourage other producers and funders of social issue documentary to think harder about evaluation models before they start production and to share ideas and results from their own experiments with the whole sector so that we can develop accepted industry standard approaches as soon as possible.

APPENDIX I

AN INCONVENIENT TRUTH UK RELEASE TIMELINE

DATE	EVENT
25/01/2006	Sundance Premiere
20/05/2006	Cannes Screening
24/05/2006	Opens in New York & Los Angeles, USA
14/06/2006	AIT opens Durban IFF
21/06/2006	1st Private Screening in the UK hosted by Al Gore/ Generation
02/07/2006	AIT the book reached #1 on the paperback nonfiction New York Times best seller list
28/08/2006	UK premiere at Edinburgh Film Festival
08/09/2006	Al Gore interview first screening on Sky
14/09/2006	UK cinema general release
04/10/2006	David Cameron, Conservative leader urges people to see the film
21/11/2006	USA DVD Release
26/12/2006	UK DVD Release
25/02/2007	wins 2 Academy Awards (Best doc feature/Best original song)
12/10/2007	Gore (jointly) wins Nobel Peace Prize
25/04/2008	SKY premiere
04/04/2009	Channel 4 premiere

APPENDIX II – WILLINGNESS TO PAY SURVEY

- | | |
|--|-----------------------------|
| 1 Did you see the film An Inconvenient Truth? | if NO go to 9 |
| did you pay to see at cinema? | if YES continue |
| did you buy it on DVD? | Y/N |
| I saw it for free on TV/DVD at a screening | Y/N |
| can't remember which | Y/N |
| 2 Do you agree with the films message that man causes climate change and we need to modify behaviour? | if NO - end of survey |
| | if YES - go to 3 |
| 3 Do you think that An Inconvenient Truth was important in communicating the message about climate change to ordinary people? | if NO - end of survey |
| | if YES - go to 4 |
| 4 Imagine a scenario in which An Inconvenient Truth had been made but had not been seen by anyone. Given that it was an important film with a message you agreed, in this scenario, what amount of money would you have been prepared to pay to ensure the film was released in cinemas and on TV where it could be seen and influence people? | |
| a would you pay £7? | if NO go to e. If YES, b |
| b would you pay £14 | if NO - end. If YES, c |
| c would you pay £28? | if NO - end. If YES, c |
| d how much would you pay? | end |
| e would you pay 3.50? | if NO, go to f. If YES, end |
| f would you pay any amount? | end |

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ABBREVIATIONS

AIT - *An Inconvenient Truth*, the film.

AVE - Advertising Value Equivalency

BAFTA – British Film and Television Award

CO₂ – Carbon dioxide

CV – contingent value

CVM - contingent value methods

DVD – digital video disk

IMDB – International Movie Database

M&S – Marks and Spencer Ltd

NGOs – Non-governmental organisations

NOAA - United States National Oceanic and Atmospheric Administration.

P&A - prints and advertising budget

PR – public relations

ROI – return on investment

SROI - Social Return on Investment

TBL - Triple Bottom Line

WTP – willingness to pay