

## **'Telling a different tale'** **literary, historical and meteorological readings of a Norfolk heatwave**

Mike Hulme  
School of Environmental Sciences  
University of East Anglia, Norwich NR4 7TJ, UK  
[m.hulme@uea.ac.uk](mailto:m.hulme@uea.ac.uk)

Submitted to *Climatic Change* for a special issue on  
'Cultural Spaces of Climate' edited by Georgina Endfield

Submitted 7 May 2010  
Revised 7 February 2011

### **Abstract**

Articulated initially by physical scientists, the idea of anthropogenic global climate change has been subject to increasingly diverse examinations in recent years. The idea has been appropriated by economists, worked with by engineers and, more recently, scrutinised by social scientists and humanities scholars. Underlying these examinations are different, yet rarely exposed, presumptions about what kind of 'thing' climate is: a physical abstraction, a statistical construct, an imaginative idea. If the ontological status of climate is rarely made explicit it becomes difficult to know whether the different epistemologies used to reveal climates – and their changing properties – are appropriate. This study offers one way in which the different worlds inhabited by the idea of climate may be revealed. It does so by examining a heatwave: a powerful meteorological phenomenon one would think and one which scientific accounts of climate change tell us will become more frequent in the future. The heatwave in question occurred in July 1900 in the county of Norfolk, England. This heatwave inhabits three very different worlds: the imaginative world of L P Hartley in his novel *The Go Between*; the historical world of late Victorian Norfolk; and the digital world of the climate sciences. The traces of the heatwave left in these different worlds are varied and access to them is uneven. Constructing an adequate interpretation of this singular climatic event and its meaning is challenging. The study suggests that grasping the idea of climate may be harder than we think. Climates may be ineffable. Yet the approach to the study of climate illustrated here opens up new ways of thinking about the meaning and significance of climate change.

**Keywords:** Heatwaves Norfolk *The Go Between* Climate Change Culture

*As a liberating power with its own laws [the heat] was outside my experience ... In the heat the senses, the mind, the heart, the body, all told a different tale. One felt another person, one was another person.*

[Hartley, 1953/1997; p.70]

## 1 Climate and Culture

Have we ever been more aware of our own climate and the climates of other countries than we are today? While humans have always been anxious about changes in climate (Ross, 1991; Boia, 2005), there are today heightened anxieties about what the climatic future holds. This gathering concern is due to the remarkable penetration into social and political discourses around the world over the last two decades and more of the idea of (anthropogenic) climate change. Scientific accounts of future changes in climate offered by, for example, the Intergovernmental Panel on Climate Change (IPCC) are coupled with visible evidence of the effects of climate warming on mountain glaciers, Arctic sea-ice and land and marine biota. They suggest new justifications for the enduring human fear that climate may not perform the way we want it to. Even if our material dependencies on physical climate are now more varied than in previous eras - and for many in the more industrialised nations probably also more tenuous (see Hitchings, 2010) - no-one fully escapes the quotidian encounter with the weather (Horn, 2007). The English, for example, continue to use talk about the weather as a surrogate for conversation (Fox, 2005), even as the idea of climate change adds new reasons for complaining, praising or worrying about the weather.

Yet Western societies in particular seem tolerant of different accounts of exactly what kind of 'thing' climate is. Since the Enlightenment, these societies have increasingly sought to record and quantify their weather in numerical form. Initially, in the eighteenth and nineteenth centuries this was through sporadic meteorological measurements (Jankovic, 2000; Anderson, 2005), while later it was through more comprehensive ways of capturing, describing and simulating climates in numerical terms (Miller, 2004). In these Western societies - and gradually through the unifying work of the World Meteorological Organisation perhaps too in all societies - climate has become reified through numbers. The 'global temperature index' (e.g. Jones & Moberg, 2003) thus becomes the signature of a globalised climate and its performance gets reported in the same way as way as do, for example, the FTSE-100 index and indicators of national GDP (Hulme, 2010). The scientific narrative of climate change places high value on the quantification, simulation and visualisation of climate through advanced computer technologies. The dominant articulation of climate is therefore as a physical entity, a reality revealed through enumeration and constructed through statistical and mathematical manipulation. With Western societies in the vanguard, the world has witnessed powerful moves towards the quantification, globalisation and virtualisation of climate (Miller, 2004; Edwards, 2010).

What this has done is to 'de-culture' climate (Livingstone, 2004; Hulme, 2008; Daniels & Endfield, 2009) or – following Latour (1993) – to 'purify' it. No-one experiences global temperature, nor indeed any other numerical index of climate. The idea of climate thus becomes removed from its imaginative, historical and cultural anchors, whilst offered in its place is a new category of climatic 'realities' emerging from abstracted weather statistics or from supercomputers. The idea of climate becomes detached from direct sensual experiences and removed from local cultural interpretations and meanings. As Hulme (2008) puts it:

*Climates do not travel well between scales: the essential loading of climate with culture – what climate means for people and places and the relationships between people and places over time – is completely lost through such purifying practices. This begins to explain one of the paradoxes of the current framing of climate change. On the one hand the physicality of weather is being increasingly influenced by human practices on a global scale – yes, temperatures are rising. Yet the very construction of these universalised diagnostic indicators of change strips them of their constitutive human values and cultural meanings. [pp.7-8]*

These enumerated and purified climates are both prospective and virtual. They are 'yet-to-be climates' embodied in, and made visual through, the electronics of computers (Edwards, 2010; Gramelsberger & Feichter, 2011). And their digital contours and colourful graphics make them highly portable. Such prospective, virtual and portable climates are separated from locally situated practices of encounter, imagination and constructed meaning, practices which have dominated historical articulations of the idea of climate (Golinski, 2007). The construction of climate and climate change by Earth System scientists and the IPCC – its objectification - exerts a stranglehold on the imaginations of the academic, political and policy elites. Yet the rest of the world remains disenfranchised from such constructions of climate, mere spectators, and are therefore emotionally, psychologically and culturally distanced from their resulting products (Heise, 2008).

Recognising the sterilising and distancing effect of this separation, one recent response has been to seek new ways of connecting scientific accounts of future climate change with place, with the visual and with the sensual. Thus Mark Lynas' first book *High Tide: News from a Warming World* sought to connect scientific depictions of climate change with travelogue descriptions of the effects of climate change in diverse places (Lynas, 2004). The Cape Farewell project was established by David Buckland in 2001 to allow artists, writers and educators to experience the High Arctic and to 'bring home stories and artworks that tell how a warming planet is impacting on this wilderness' (Buckland et al., 2006). And ecologist Anna Lawrence explores how popular phenology in the UK – in her case amateur ornithology - allows for the co-construction of accounts of climate change which pay respect to both physical and imagined realities (Lawrence, 2009).

These initiatives offer different types of attempts to bridge the gaps opened up between the global, virtual and portable climates of the future and the multitude of

everyday located, sensual and imaginative encounters with weather in the present. But the rifts in the matrix of physical and imaginative realities which together construct the idea of climate, rifts torn open by Enlightenment rationality, run deep. The project of repairing these tears in reality - of finding resonant cultural ways of connecting climates past, climates present and climates future and thereby creating new meanings of the idea of climate - is more demanding than suggested by the examples cited above. Western intellectual elites have indeed only just started on this project and are not sure where they are heading.

It is true that a number of voices in recent years – in part the voices of cultural historians, historians of science and anthropologists - have sought to reveal and deepen our understanding of the links between climate and culture. The studies and surveys by Meyer (2000), Strauss and Orlove (2003), Boia (2005), Cruikshank (2005), Sherratt et al. (2005), Fine (2007), Golinski (2007), Crate and Nuttall (2008), Mergen (2008), Hulme (2009), Behringer (2010), and Putra-Johns and Trexler (2011) have all offered accounts of climate or climate change which in different ways challenge the dominant scientific account of purified climates. In each case climate is shown to be an idea which is co-constructed between physical and imagined realities; the idea of climate only emerges from the creative interplay of these two domains of human experience, an idea continuously in flux.

A number of other projects also give shape to this ambition, exploring the many different ways in which the idea of climate - and hence climate change - becomes constructed. A few are listed below.

- In *The Weather Reports You* (Horn, 2007), artist Roni Horn allows Icelandic citizens to talk about their experience of weather and climate, what it means to them, how it reflects or creates their moods, or embodies their hopes and fears for the future.
- Historian Tim Sherratt in his work on Australian climate and culture (Sherratt, 2005) has explored the psychological work that the idea of a 'national climate' can do for a nation, climate thereby becoming both a personal narrative and a political resource.
- Trevor Harley (2003) has shown the work that is undertaken for British citizens by extreme weather events in providing a framework for the structuring and accessing of personal and collective memory. Weather and climate offer resources for idealising and romanticising the past, registers in which meteorological 'truth' may be of quite minor importance.
- In her book *The Perfect Summer: Dancing into Shadow in 1911*, Juliet Nicholson (2006) offers a fusion of the climate and culture of Britain in the summer of 1911 using the heat, light and sun of a glorious summer to evoke the pathos and tragedy of a pre-World War I era. Here is the intermingling of climate, history and nostalgia.

## 2 'Telling a Different Tale' – the study

The study described here contributes to this gathering project of reconnecting physical climates – whether real or virtual – with their historical, cultural and imaginative contexts. I wish to experiment with the idea of climate by exploring the different ways in which a specific climate event<sup>1</sup> 'lives on' and becomes a resource that is used in different cultural pursuits, social realities and scientific enterprises. In so-doing, a more nuanced and contingent view of climate is offered than the dominant 'one-dimensional' account which saturates contemporary public discussions about climate change. If the very idea of climate contains within it different, contested and constructed meanings, then the claim that climates can be adequately simulated inside computers, mobilised through numbers and managed by international protocols must be seriously challenged.

In his recent book *The Three Cultures*, Jerome Kagan describes the assumptions, vocabularies and contributions of the sciences, the social sciences and the humanities to human knowledge (Kagan, 2009). He argues that the meanings of many of the concepts used by each culture are unique to it and do not apply to the others because the source of evidence for each term is special. By analogy, I argue that all three cultures are needed to give depth and adequacy to the idea of climate. We have seen above how through quantification and statistical normalisation, climates become *enumerated*, *universalised* and *predictable*. The natural sciences might therefore seek to understand a heatwave through the lens of meteorology. Yet climates can also be *localised*, *historicised* and *encultured* and so the social sciences might seek to understand a heatwave through the lenses of geography and history. And climates can also be *romanticised* and *memorised*. The arts and humanities might therefore seek to understand a heatwave through the imagination.

These three cultures of knowledge are used in this study to explore the idea of climate, in particular to examine one historical climatic episode – a heatwave. In so doing, I assert that the idea of climate has multiple realities. Different epistemologies and methodologies are needed to approach these different ontological states of climate. The choice of epistemology determines to a great extent what can be revealed and what remains hidden about climate.

The heatwave studied here occurred across England in July 1900. The study focuses on the county of Norfolk where the heatwave endured for 18 days, from Tuesday 10 July through Friday 27 July. Although this heatwave existed physically over a hundred years ago and cannot now be directly experienced, it can nevertheless today be encountered in at least three different ways. The heatwave of July 1900 lives on, so to speak, in three different worlds, each world endowing this climatic episode with quite different meanings.

---

<sup>1</sup> In the study presented here this event is a heatwave, but I suggest that many other climatic phenomena are also open to the multiple lines of enquiry pursued here.

We first encounter the Norfolk heatwave of July 1900 in the fictional world of Leo Colston, Marian Maudsley and Ted Burgess, characters in L P Hartley's 1953 novel *The Go-Between*. Readers of this text experience the heatwave vicariously through a cross-fertilisation of the imaginations of Hartley and his fictional character Leo Colston with their own imaginative worlds and their reading of other texts. We next encounter the heatwave through historical traces located in the pages of the local and regional newspapers of Norfolk for the month of July 1900 and in other documentary evidence. We discover how the consequences of the heatwave reverberated through the lives of certain individuals. And we encounter the July 1900 heatwave through the meteorological records of the UK Met Office and their climatological derivatives. Here the heatwave is reified and purified through enumeration and digitisation.

These different encounters with the heatwave are possible only by assuming different ontologies with regard to the idea of climate and by deploying different procedures of enquiry. In the respective sections that follow, the methodologies of literary analysis, historical research and scientific analysis are therefore used to make sense of these different realities<sup>2</sup>.

### 3 The Literary Heatwave

Leslie Poles Hartley was born in Cambridgeshire in 1895 and published his first book, a collection of short stories, in 1924. He is best known for his 1953 novel *The Go-Between* which won the 1954 Heinemann Foundation Prize of the Royal Society of Literature and which was later made into an internationally successful film<sup>3</sup>.

The story begins in 1953 with the reminiscences of Leo Colston, an elderly man, looking back on his childhood with nostalgia and regret, although the story is recounted through the naive eyes of Leo the boy. In the summer of 1900, Leo aged 13 visited his school friend Marcus Maudsley whose family lived in the luxurious country manor of Brandham Hall, Norfolk. As with other English novels, Hartley's country manor offers an 'atmosphere of a self-contained, traditional world of rigid class divisions' (Ingersoll, 2004: 245). Leo is from a comparatively humble background and despite his hosts doing their best to make him feel welcome he remains an outsider. His discomfort is symbolised by wearing in the oppressive heat the thick winter clothing his mother packed for him.

When Marcus falls ill, and with the July heatwave intensifying, Leo becomes a secret 'go-between' for Marian Maudsley, the daughter of the aristocratic family, and nearby tenant farmer Ted Burgess. Leo is happy to help Marian because she is kind to him and he develops an infatuation for her as she represents the Virgin of the Zodiac. Leo's innocence makes it easier for the lovers to manipulate him. Ted

---

<sup>2</sup> This raises some interesting questions about the nature of disciplinary enquiry and whether the study described here is multi-disciplinary, inter-disciplinary or trans-disciplinary (see Robinson 2008).

<sup>3</sup> The film, released in 1970, won the *Grand Prix* at the 1971 Cannes Film Festival. The screenplay was by Harold Pinter and the film starred Julie Christie and Alan Bates in the leading roles. Semyard (1980) offers a detailed analysis of Pinter's treatment of the novel.

comes from a lower social class than Marian and there can be no possible future in the relationship. Although Marian and Ted are fully aware of this, Leo is too naive to understand why the lovers can never marry. The situation is further complicated by Marian's impending engagement to Viscount Hugh Trimmingham, a wealthy and influential member of the local nobility.

Together, these factors make Marian's secret relationship with Ted highly dangerous for all parties concerned. Leo starts acting as an interceptor, and occasional editor, of the messages. Eventually, he begins to comprehend the sexual nature of the relationship between Marian and Ted and feels increasingly uncomfortable about his role as go-between. Leo's involvement as messenger between the lovers eventually has disastrous consequences. As the heatwave finally breaks in a dramatic thunderstorm, Mrs Maudsley discovers the couple *in flagrante delicto* with Leo as a reluctant witness. This leads directly to Ted shooting himself, while Leo is left profoundly affected with permanent psychological scars. We see Leo, 50 years later, an emotionally detached adult who has never been able to establish intimate relationships, 'appalled by his premature glimpse into the adult world and haunted by guilt' (Willmott, 1975: 5). When Leo looks back on the events through the eyes of a mature adult, he is fully aware of how the incident has left its mark on him.

Hartley later revealed that the novel was to some extent autobiographical (Brookes-Davies, 1997), 'an anagram of his own experience'. It is set in Norfolk in July 1900 and a number of the fictional places are barely disguised variants from Hartley's own life. Thus the real-life Brandenham Hall east of Swaffham, where Hartley himself stayed in August 1909 aged 14, becomes the fictional Brandham Hall where Leo stayed and, for example, Beeston village in Norfolk becomes Beeston Castle in the novel.

Of central importance – and the object of our interest – is the heatwave against which the story unfolds and from which it draws much of its mood and symbolism. The day after Leo arrives at Brandham Hall – Tuesday 10 July - the weather turns from being cool and temperate to offering a cloudless sky with the sun beating down [p.35<sup>4</sup>]. One of the first things Leo and Marcus do together is to read the thermometer located outside the garden shed which stands at 'nearly eighty-three' (28.3°C). This reading of the thermometer becomes a daily ritual for Leo and we can trace the meteorological conditions of this golden July throughout his stay at Brandham. The temperature peaks at 94°F (34.4°C) on Monday 16 July, with Leo willing it to reach 100 [p.87], before the thunderstorms of Friday 27 July bring the heatwave – and Leo's recounting of his story – to an end.

The mimetic accuracy of Hartley's heatwave is particularly noteworthy. The 'fictional' recorded daytime temperatures at Brandham Hall are summarised in Table 1, alongside the actual temperatures recorded for these same calendrical days at nearby Hillingdon. The parallel is striking. Higdon (1977) has pointed out the rarity of such an accurate time scheme in British fiction and that it reveals 'Hartley's

---

<sup>4</sup> All page numbers refer to the 1997 penguin edition of *The Go-Between*, with an introduction and notes by Douglas Brookes-Davis.

concern for precise detail' [p.48]. But what has not been noted before is that this mimetic accuracy extends to the specific meteorology of the heatwave itself, down to the very thunderstorm which brought it to an end.

This seems a crucial observation. For Hartley, the heatwave is central to his story and is used to symbolise nostalgia, myth, dream and passion. And the oppressive heat of the physical atmosphere parallels the oppressive social atmosphere of Brandham Hall. The heatwave is burned into Leo's memory so that the older, narrating, Leo can still evoke it 50 years later when he is well into his sixties. As Brookes-Davis recounts, Leo's buried memory is 'shot through with summer sun and shimmering in a heat-haze' [p.xx], symbolism for the 'golden age' of the Edwardian decade and also of Leo's own lost innocence. It was this deployment of heat as a symbol of nostalgia that Juliet Nicholson used in her creative account of British society in the summer of 1911: 'I wanted to evoke the full vivid richness of how it smelt, looked, sounded, tasted and felt to be alive in England during the months of such a [hot] summer' (Nicholson, 2006: 1). Governing Nicholson's account, in a similar way to Hartley's fictional masterpiece, was 'the almost unbroken, constant, sometimes wonderful and sometimes debilitating heat of the summer itself' [p.3].

But even more powerful than the evocation of a lost 'golden age', the heatwave functions metaphorically as an indicator of Leo's slowly awakening sexuality. As the thermometer rises, so new emotions and passions are released within Leo:

*From being my enemy the summer had become my friend ... I felt I had been given the freedom of the heat, and I roamed about in it as if I was exploring a new element ... I yearned to travel far, ever farther into it, and achieve a close approximation with it; for I felt that my experience of it would somehow be cumulative, and that if it would only get hotter and hotter there was a heart of heat I should attain to. [pp.45-6]*

*As a liberating power with its own laws [the heat] was outside my experience. In the heat, the commonest objects changed their nature ... In the heat the senses, the mind, the heart, the body, all told a different tale. One felt another person, one was another person. [p.70]*

Hartley used the climax of the heatwave – its dramatic ending in a thunderstorm and torrential rain – to presage the denouement of the story: the revelation of Ted and Marian's affair and Leo's role in facilitating it. When Leo awoke on the final, fateful, day at Brandham Hall the weather had turned. The footman, Henry, helps make clear the bewilderment that Leo now felt and his sense of impending tragedy:

*'It's not raining yet ... but it will be before the day's out, mark my words ... All this hot weather isn't natural.'*

*'Oh, but it's summer!' I exclaimed.*

*'Summer or not, it isn't natural,' Henry repeated. 'Why, everything's burnt up and they do say' – here he looked down at me ominously – 'that quite a lot of people have gone mad.'*

*'Oh,' I exclaimed, for mental derangement, like most forms of calamity, had a special interest for me. [p.225]*

Later that morning Leo observed,

*And now the skies were grey: that was one reason why I felt strange. We had had cloudy days before, but not dull days, threatening rain. It told me summer was over and a sterner season lay ahead. [p.227]*

By late afternoon, the clouds,

*... had an ominous look, white upon grey, grey upon black, and the still air presaged thunder. One after another we went outside, stared at the sky, and came back with our verdicts. [p.235]*

For Leo – both the young Leo and later the old reflective Leo – this sterner season was the rest of his life, lived out perpetually under the shadow of this darkening sky, the searing heatwave long banished to the mythical 'golden age' of his innocent youth and the surging optimism of a new century. Fifty years later Leo looks back with regret at what might have been:

*... the life of facts proved no bad substitute for the facts of life ... for when the First War came my skill in marshalling facts was held to be more important than any service I was likely to perform on the field. So I missed that experience, along with many others, spooning [sexual intercourse] among them. Ted hadn't told me what it was, but he had shown me, he had paid with his life for showing me, and after that I never felt like it. [p.247]*

#### 4 The Norfolk Heatwave<sup>5</sup>

The heatwave of July 1900 had consequences not only for L P Hartley and the fictional Leo Colston, but for many aspects of late-Victorian Norfolk life and society. These consequences are clearly evident in the daily and weekly newspapers and magazines published during this month.

For a largely agricultural county such as Norfolk, the weather was always carefully scrutinised by town and village alike. Thus *The Daily Chronicle's* 'Agricultural Report' for 20 July observed: 'The cold dry spring is being succeeded by a short spell of tropical summer. How long the wave of heat will last no one knows'. After showery

---

<sup>5</sup> The newspapers scrutinised for this section were *The Norfolk Chronicle and Norwich Gazette* (Norwich), *The Eastern Daily Press* (Norwich), *The Daily Chronicle* (Norwich), *The Norwich Mercury* (Norwich), *The Times* (London) and *Punch* magazine (London).

weather in June the heat was initially welcomed, allowing 'meadow and pasture hay to be stocked in prime order'. These 18 days of summer heat left their mark on Norfolk life in many ways. Cricket matches were played under cloudless skies, just as was the match played in by Leo Colston in *The Go-Between* and after which his adolescent infatuation with Marian reached its height. Commercial opportunities offered by the heatwave too were grasped. Shops in Norwich advertised in the newspapers 'clothes for hot weather ... bargains in muslin robes and lace mantles' and De Carle's lemonade enticingly offered to 'quench your arid thirst at 4½d a packet which makes 2 gallons'. Entrepreneurship worked in other areas too. A Norwich member of the Society for the Prevention of Cruelty to Animals wrote to *The Eastern Daily Press* on Thursday 26 July drawing attention to some of his inventions for 'offering comfort and relief to horses during this excessively hot weather.'

The heat also interacted with the round of summer social events. The summer garden party of the Norwich branch of the Amalgamated Society of Railway Servants, organised on behalf of the Society's orphans' fund, was held on 19 July: 'The extreme heat of the weather in the early afternoon prevented a large attendance, but in the evening there was a grand muster.' A week earlier *The Norfolk Chronicle and Norwich Gazette* had also reported on the Queen's Garden Party held at Buckingham Palace on Wednesday 11 July. The 81-yr old Victoria, in black silk costume, enjoyed what *The Times* reported the following day as 'perfect weather ... the heat was undeniably great, but its strength was pleasantly tempered by a light breeze just sufficient to ruffle the surface of the water.'

#### *Summer Heat*

*Is it death or is it life the word the flowers are saying  
One to another as their silken leaves they strew?  
Chalk-white butterflies are weary of their playing,  
Roses have grown listless on their sun-scorched tree.  
Peaches on the orchard wall match them in their glowing  
White syringa strews the grass in a storm of snowing.  
Half the world is weary of the summer at its height,  
Weary of the sunny roads and panting for the night.  
Columbines are heavy with a load of yellow honey,  
Lavender is lovely for all her faded blue,  
Haunted by the bees all day. The roads are over sunny,  
Now for lingering footsteps and lingering words of lovers.  
And as we sighed for sunshine so sigh we for the sea.  
We are sick of summer, for the rose her heat discovers –  
And, ah! We loved her better half-blown upon the tree.  
The world is scorched with sunshine, Summer, let us be!*

Figure 1: The poem 'Summer Heat' by amateur poet Nora Hopper published in *The Norwich Mercury* on Saturday 28 July 1900.

The heat of July 1900 inspired amateur Norfolk poets to send their offerings to the newspapers. For example, a poem 'Summer Heat' by Nora Hopper was published in *The Norwich Mercury* on 28 July (Figure 1), the day after the heatwave broke. And the heat was also the subject of cartoonists in the weekly magazine *Punch*, notably one cartoon from Wednesday 25 July (Figure 2) that was noticed by Leo in *The Go-Between*, emphasising again the mimetic accuracy of Hartley's fiction (Higdon, 1977: 48):

*To my delight, the paper [Punch] was full of references to the heat: they made my single experience seem a universal one. Here was the sun, 'The Real Scorcher' ... bending low over the handlebars, curly rays coming out of his head, a sultry smile on his face; and in the background Mr Punch under an umbrella, mopping his brow, while Dog Toby, with his tongue hanging out, wilted behind him. [pp.195-6]*

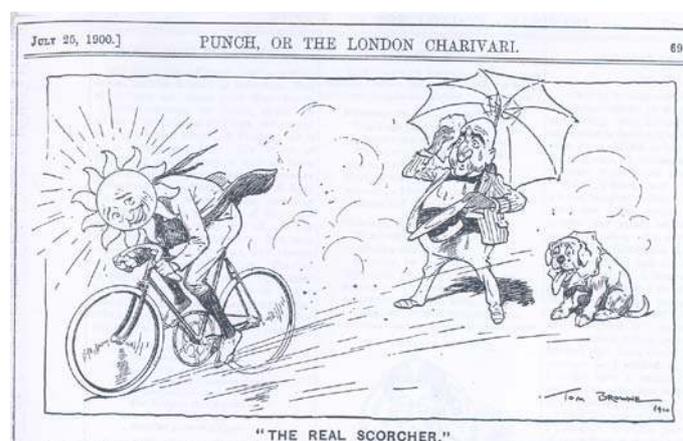


Figure 2: 'The Real Scorcher'. Cartoon in the weekly magazine *Punch* (25 July 1900, p.69) which is alluded to by Leo in *The Go-Between* (and which was therefore viewed and used by L P Hartley when writing the novel).

But there were darker sides to the effects the heatwave had on Norfolk society. A 13-yr old boy died while swimming in a river – a pursuit also partaken by the same aged Leo Colston in *The Go-Between* – while 20-yr old Private W Ward from the Norfolk Artillery Militia died of heatstroke on Wednesday 18 July. Death was attributed to 'congestion of the brain and lungs, caused by excessive heat, or so called sunstroke'. And the harvesting activities in which Ted Burgess was engaged in the *The Go-Between* also became hazardous in the extreme heat. On Saturday 14 July, labourer John Wright fell off a haystack at Brandon Parris, near Barnham Broom in Norfolk, an accidental death being recorded.

And it is the death of another agricultural labourer, George Bishop aged 52 from the Norfolk village of Hickling, that drives home the enduring consequences of the heatwave in the lives of ordinary people. Being overcome by heat Bishop also fell off

a hay-wagon, the incident being recorded in *The Norfolk Chronicle and Norwich Gazette* the following Saturday:

#### *Fatal Fall at Hickling*

*On Wednesday [18 July] afternoon, while George Bishop (52), a farm labourer, was employed in loading hay on a farm at Hickling, he was overcome by heat, and fell from the wagon to the ground, and dislocated his neck. An inquest was held on the body by the County Coroner (Mr H.R.Culley) on Thursday, and a verdict of accidental death was returned.*

Bishop's death certificate<sup>6</sup> records the death as being 'accidental from injuries caused through deceased having fallen off a load of hay'. Out of a Norfolk population of 460,000 recorded in the 1901 census there were over 50,000 agricultural workers and as with most occupations at the time accidental deaths were by no means uncommon. But here in the case of Bishop the heatwave of July 1900 leaves a particular, and tragic, legacy.

George Bishop was born in 1848 in the village of Hickling in northeast Norfolk, his father also an agricultural labourer. He married Hannah Eliza Flatt, an agricultural labourer's daughter from nearby Ludham, in February 1873 in Hickling Parish Church. George and Hannah had four surviving children – Ernest, Miriam, Frank and Rachel – who in July 1900 on their father's death were aged 25, 20, 14 and 7. George's death placed a premature burden on his eldest son, Ernest, also a farm labourer. The following April, at the time of the 1901 census, Ernest was providing for his widowed mother and his youngest sister Rachel. He had recently married Esther Nicholls and they had a 9-month old daughter Winifred, born just days after George's fatal accident. Ernest was later to father two more children.

George's accidental death in the July 1900 heatwave left its mark on his surviving family, especially his eldest son Ernest. Ernest had to shoulder the role of primary wage-earner not only for his own young family, but also for his widowed mother and youngest sister. George's children were left without their father and his grandchildren were never to know their grandfather. For the Bishop family of Hickling, the heat of this Wednesday in July 1900 would forever be associated with tragedy and death, a sadness seared into the memory of those family members for the rest of their lives.

## **5 The Meteorological Heatwave**

The July heatwave of 1900 also left its traces in daily (and hourly) thermometer readings from across Norfolk and further afield. These meteorological measurements exist in daily newspapers, monthly gazettes, hand-written and transcribed Met Office manuscripts and, now, in digital archives some of which are

---

<sup>6</sup> General Register Office, Registration District Smallburgh, Sub-district Ludham, 1900, Quarter 3, vol.4b, p.31

available on the internet. The heatwave can thus be discovered through exercises in data mining, synthesis and comparison. Such exercises construct a different identity for the July 1900 heatwave to that revealed to us by L P Hartley or by accounts of quotidian Norfolk life.

Based on data from the Central England Temperature (CET) series (Parker et al., 1991), the July 1900 heatwave across England lasted 20 days from Tuesday 10 July to Sunday 29 July (Table 1). On each of these days the daily-mean temperature was at least a full degree above the 1961-1990 July average of 16°C. This compares closely with the heatwave experienced by Leo Colston in *The Go-Between* which lasted 18 days from the day after his arrival at Brandham Hall – Tuesday 10 July – to the day before his departure – Friday 27 July. In historical meteorological terms this heatwave was substantial. For comparison, during a recent 18-day spell of hot weather in England - from 22 June to 9 July 2009 – the CET averaged 17.5°C. The July 1900 heatwave was more than two degrees warmer than this, averaging 19.6°C between 10 and 27 July.

The summer of 1900 as a whole was not exceptionally warm in England. The three-month period from June to August 1900 (15.8°C) ranks only 89<sup>th</sup> warmest in the 350-year CET series, although the single month of July 1900 (17.7°C) ranks in the top 10 per cent of warm Julys. July 1900 was also dry across England and Wales, but not especially so. It was only the 44<sup>th</sup> driest July out of the 135 Julys in the England and Wales Precipitation series (Gregory et al., 1991) dating back to 1873.

The Central England Temperature series has been synthesised from tens of thousands of thermometer measurements across England and is a good proxy for temperatures over most of the country (Jones & Hulme, 1997). But the heatwave of July 1900 is also more directly revealed in local meteorological measurements made in the county of Norfolk. These are shown for the village of Hillington in West Norfolk - not far from the fictional Brandham Hall - in Table 1, the data being extracted from *The Norfolk Chronicle* of July 1900. The highest daytime maximum temperature was reached in Hillington on Wednesday 25 July (91.3°F, 32.9°C) and fourteen hours of sunshine were also recorded this day. This was the same day that Leo wrote to his mother that a thermometer record for Brandham Hall had been set [p.196]<sup>7</sup>.

For L P Hartley and Leo Colston the heatwave was brought to a close by a dramatic thunderstorm on the late afternoon of Friday 27 July. This storm is also evident in the meteorological traces of the Norfolk heatwave. By 27 July an anticyclone was sitting over central Europe, drawing warm and very humid air off the continent (ASE flow – anticyclonic southeasterly – according the Lamb airflow classification; Table 1), ideal conditions for summer thunderstorms. An earlier electrical storm on Monday 16 July had delivered nearly 30mm of rain at Hillington and the storm of 27 July was also reported in the Norfolk newspapers: 'The most severe thunderstorm which has visited this city and county for a large number of years occurred at

---

<sup>7</sup> The warmest day (i.e., Tmean) in the CET series occurred on Friday 20 July (Table 1).

midnight on Friday and raged with great violence for over an hour.' [*The Norfolk Chronicle and Norwich Gazette*, Saturday 28 July].

Date July 1900	Leo's events	Brandham Hall (°C)	Hillington				Central England Temperature (°C)	Lamb Weather Type
			Tmx (°C)	Sun (Hrs)	Wind (dir)	Rain (ins)		
Mon 9	Arrives at Brandham Hall	'cool'	n/a				11.7-15.4-19.1	AW
Tue 10		29.3	n/a				10.6-18.3-26.0	ASW
Wed 11		>29.4	n/a				12.8-20.9-29.0	S
Thu 12		<25.0	25.8	14	SE		14.4-20.5-26.6	C
Fri 13	Trip to Norwich with Marian	>28.3	28.6	10	SE		13.5-18.8-24.0	SW
Sat 14	Swimming with Ted	<24.4	24.4	8	SE/SW		14.4-17.3-20.2	CW
Sun 15	To church with Lord Trimmingham	28.9	25.8	11	SE/SW		10.5-17.1-23.7	AS
Mon 16	Family picnic	34.4	29.4	5	SW	1.16	14.0-20.0-26.0	CW
Tue 17	Three notes passed between Ted and Marian	28.3	25.7	13	SW		12.3-17.9-23.5	AW
Wed 18		29.4	29.0	13	SW		11.7-18.7-25.7	A
Thu 19	Out for lunch with the children	33.3	32.4	13	SW/SE		11.5-20.3-29.1	A
Fri 20		33.3	27.8	9	E		16.3-22.0-27.6	E
Sat 21	Cricket match	25.6	24.6	4	SW		15.8-18.8-21.8	-
Sun 22		27.2	25.6	5	NW		15.5-19.0-22.5	AW
Mon 23	Letter to Leo's mother	28.3	27.2	7	NW		17.5-21.3-25.1	AW
Tue 24		31.2	30.7	12	SW		15.9-21.6-27.3	AW
Wed 25	Letter from Leo's mother	'a record temperature'	32.9	14	SW		15.4-21.5-27.6	CW
Thu 26	Night trip to the shed	27.2	n/a				15.2-19.2-23.2	ANW
Fri 27	Birthday; the affair is 'discovered'	Rain	n/a				12.5-18.8-25.1	ASE
Sat 28			n/a				14.6-18.6-22.6	C
Sun 29			n/a				13.7-17.4-21.1	C
Mon 30			n/a				13.1-16.7-20.3	n/a

*Table 1: Daily meteorological readings for the heatwave - Monday 9 to Monday 30 July 2010 – juxtaposed against the key events in The Go-Between. Sources: 'Brandham Hall' data are the maximum daytime temperature recorded by Leo in the novel, converted to Celsius; Hillington data are daily maxima extracted from The Norfolk Chronicle converted to Celsius (n/a = not available); Central England Temperature data are, respectively, Tmin-Tmean-Tmax (see <http://hadobs.metoffice.com/hadcet/data/download.html>); Lamb Weather Types are from Lamb Weather Catalogue (Lamb, 1972) and summarise the prevailing mid-troposphere daily airflow: 'A' = anticyclonic, 'C' = cyclonic, and 'N', 'S', 'E' and 'W' refer to the points of the compass.*

By August 1900, Leo's heatwave had well and truly ended, both by the cool and wet weather of August and by the tragedy of events at Brandham Hall. By Monday 30 July, the heatwave in the CET series had dissipated and for most of August 1900 the weather continued cool and wet. Across England, for example, August 1900 was nearly a degree cooler than the 1961-1990 average, ranking only 240<sup>th</sup> warmest out of 350 Augusts in the CET series.

Although the meteorological heatwave of July 1900 was not excessive in historical terms, it nevertheless continues to reside – and will do so permanently and unaltered - in the meteorological statistics which contribute to our description of English climate and climate change (for example see Figure 3). The heatwave has been reified through numbers which can be read off original manuscripts or shared electronically around the world.

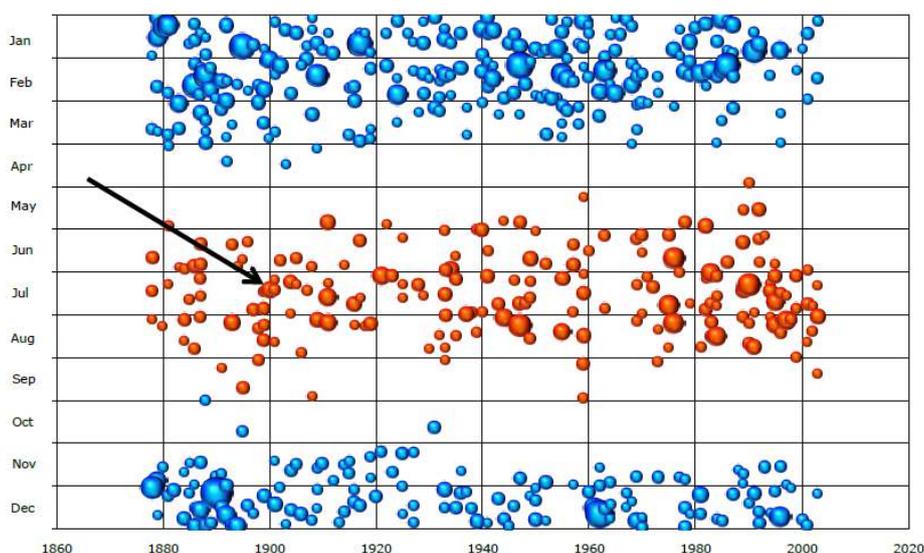


Figure 3: The occurrence of “heatwaves” (red) and “coldwaves” (blue), from 1878 to 2001, as measured by a sequence of at least five consecutive days when the Central England maximum temperature exceeded 22°C (heatwave), or when the minimum temperature dropped below 0°C (coldwave). The area of each circle is proportional to the length of the sequence. The heatwave of July 1900 is marked with the arrow. [Source: Hulme et al., 2002].

And drawing upon the scientific account of anthropogenic climate change, heatwaves have become signature meteorological events in popular representations of future climate change in the UK (and elsewhere). For example, when the most recent Government sponsored climate scenarios for the UK – labelled UKCP09 (Jenkins et al., 2009) - were published on 18 June 2009, ‘heat’ and ‘heatwaves’ was the most common device used in the national print media to communicate the scenarios to a wider public. Thus the headlines in some of these newspapers ran: “Britain 2080 ... and the weather forecast is HOT” (*The Sun*), “UK 2080: age of the killer heatwave” (*Daily Mail*), and “Boiling Britain: heatwave will be the norm in 30 years” (*The Daily Mirror*) (Figure 4). The purified meteorological numbers, expressed

in degree of heat yet detached from any cultural context as to what the Britain of 2080 might actually be like or feel like to live in, were mobilised to conjure descriptive adjectives such as 'killer', 'boiling' and 'baking' to lend emotional power to the scenarios.



Figure 4: Headline from The Daily Mirror, 19 June 2009, reporting the previous day's publication by the UK Government of the new UKCP09 climate scenarios for Britain out to the year 2080.

## 6 Three Heatwaves ... or One?

These three encounters with the heatwave of July 1900 offer very different accounts of the climatic events which occurred during that month in England's fourth largest county. They suggest at least three different realities (ontologies) which the idea of climate can inhabit: the imagination; physical time and place; and meteorological measurements and statistics.

In the imagination of L P Hartley – incarnated in the fictional life of Leo Colston – the heatwave released powerful patriotic, mystical and sexual passions. The heatwave acted for Hartley as the iconic climatic event around which his own childhood memories were captured and transformed, much in the way that Harley (2003) describes in his study of weather and memory amongst the British public. In *The Go-Between* Hartley allows the physicality of the heatwave to interact with the symbolism of heat and its evocation of transcendence, sexual awakening, ecstasy

and fear. This is revealed in the way Leo's infatuation with the thermometer readings reflects subliminally his state of emotional intensity. The physicality of this climatic episode thus becomes the symbol of the boy's passions; the symbolism of the intense heat defines for Hartley the meaning of the heatwave. This is not an unfamiliar imaginative deployment of the idea of heat in fiction. Camus' *The Stranger* (1942) and McEwan's *Atonement* (2001) are just two examples of many which in which the sensation of heat is used to destabilise and release sensual passion and emotion. Ingersoll (2004:249) has pointed out in his wider study of intertextuality in *The Go-Between* and *Atonement* how 'the unseasonable heat undoubtedly serves as a justification for the explosion of Eros'.

Our encounter with the heatwave through the documentary accounts of Norfolk life and society in July 1900, and in particular of the death of George Bishop, shows climate acting in a different way. Here we see climate as both a passive substrate and an active agent in the shaping of the intimate and trivial details of human life, but also of the destiny of individual narratives and life stories. The physicality of the heatwave – exactly how hot did it get in Norfolk? – is of lesser importance than understanding the almost infinite varieties of personal and cultural meanings attached to its occurrence. It offered *inter alia* commercial opportunity for product placement, serenity (and suffering) for the guests of a garden party, a subject for artistic contemplation and creativity, redemption for the hay harvest, and death and finality for an agricultural labourer, an army private and a boy swimmer. The physicality of climate cannot be detached from its context. The climatic event is immersed in the social and cultural life of a community; and the social and cultural life of a community becomes entangled with the physicality of the heatwave. To separate them is to lose all orientation and significance. 'Climate does not simply shape history, for it can only be known through history' (Sherratt, 2005; 4).

As an object of scientific enquiry we find the events of July 1900 are to be read in a different way. Of prime importance here are the measurements of heat (and rain, wind and sun) and the veracity and representativeness of these measurements. The meteorological readings at Hillington – reproduced at the time in the local newspaper – thus require scrutiny if the true scientific significance of the heatwave is to be constructed. Were the observations made at the right time of day? Had the thermometer been serviced, was it placed in a screen and was the observer trained in the art of reading? The meteorological meaning of the heatwave – and its endurance for scientific posterity – depends critically on adequate answers to these questions. But none of these considerations mattered for Leo Colston as he became enthralled with the prospect that the thermometer at Brandham Hall might break all records (and thereby in some way justify his emancipated actions).

In the objectified, detached world of scientific enquiry what matters is the enumeration of the climatic event, its capture by numbers, its 'purification' (Latour, 1993). For meteorologists the real Hillington might as well have been the fictional Brandham, or indeed, the real Darlington or Birmingham. They only ask questions such as: 'Was the heatwave of July 1900 more extreme than the English heatwave of June-July 2009?' or 'Was the heatwave of August 2003 more extreme in England or

in France?' Whether they occur in 1900 or 2080, in France or Russia, in L P Hartley's imagination or Norfolk's history, heatwaves become standardised through numbers, and thus universalised. Knowledge about climate is made impersonal and objective, opening a way for prediction and regulation (Porter 1995).

More importantly, the study suggests how the boundaries between these three realities – the fictional, the historical and the meteorological - are porous and almost impossible to fix. There is here not a trinity of heatwaves, each inhabiting a distinct reality. There are not three separate climatic events each of which can only be revealed using different epistemologies and methods. The July 1900 heatwave exists simultaneously – and powerfully, tangibly - in fiction, in history and in meteorology, with each narrative embedded in the other two. The heatwave imagined by the reader of *The Go-Between* and experienced by Leo is the heatwave revealed by the Hillington measurements. George Bishop's death falling from the haystack was caused by the same heatwave that led to Ted Burgess's suicide. The physical heat recorded at Hillington that month *did* provoke Nora Hopper's poem 'Summer Heat' which was subsequently published in *The Norwich Mercury*. The July 1900 heatwave in Norfolk can only be understood in a context which is at one and the same time imaginative, geographical, historical and physical. And because these realities depend upon each other, there will never again be a heatwave like it. It cannot be re-created. It is unique.

### **The Meaning of a Heatwave**

Meteorologists and climate modellers report that heatwaves such as the exceptional European weather of August 2003 will become commonplace by 2050 or earlier (Stott et al., 2004; Jenkins et al., 2009). If this is so then how much more commonplace will become the 'unexceptional' heatwave of July 1900. But it will be neither the heatwave of July 1900 nor of August 2003 that occurs in the future. The sterilised numbers of the meteorologists cannot tell us about the George Bishops of the future who in July 2050 will be killed by this climatic extreme, nor what kind of 'garden parties' will in the future bask in the heat and sunshine of 'perfect weather'. Nor can these numbers tell us about adolescent boys like Leo Colston for whom the intense heat symbolised a teenage rite of passage, but the psychological effects of which seared themselves into his memory for the rest of his life. It is not possible for numerical descriptions of climate to tell us these things nor for models to predict the multiple meanings of a heatwave.

Eric Klinenberg (2002) reached similar conclusions in his sociological account of the July 1995 Chicago heatwave. Focusing on the meteorology of the event – 'How hot did it get, and for how long?', 'Was it hotter than previous heatwaves?', 'Was it predicted?' – obscured the most important characteristics of this climatic event. For Klinenberg these characteristics are the politics of social exclusion, the conflicts within the emergency services and the practices of media reporting. The very particular ethnic, cultural, architectural and political characteristics of Chicago are what give the July 1995 heatwave its shape, significance and meaning. These cannot

be discerned through a reading of the thermometers. The meaning of a climate extreme is inextricable from the culture which it encounters, an argument also illustrated in Janet McCalman's study of nineteenth century Melbourne heatwaves (McCalman, 2005).

With climate understood thus – as a continuously re-invented idea in which imagination, place, culture and history engage with the physicality of heat, cold, wind, sun and rain - the meaning of climate change remains ineffable, incapable of being predicted through numbers or reduced to words. It was this ineffability that *The Times* leader writer confronted when seeking to articulate the remarkable heat of Juliet Nicholson's 'perfect summer' of 1911:

*We are used to talking about summer heat in our poetry, but it is only when a real spell of it comes to us that we discover how rare it is. This July the whole countryside looks at the same time both strange and familiar. There is the corn, ripe as if it were the middle of August, and the dark foliage of later summer, but all our Northern landscape, unchanged in its forms and objects, is transfigured by the colours of the South. Usually, even in fine summer weather, there is a Northern coolness in our mornings and evenings; but now one is startled even in the early morning by the Southern splendour both of earth and sky. [The Times, 26 July 1911].*

We cannot capture, even less predict, these meanings of climate - sometimes enduring, often fleeting, always personal. We can only create them and re-create them by telling our tales, our different tales ... and through living them. In his exploration of the human elements of Australian climate, Tim Sherratt describes this elusiveness of climate thus: 'A new climate cannot be mapped and comprehended like a new continent. It can only be known through time, through averages and extremes, through experience and expectation' (Sherratt, 2005: 4). We would do well to remember this in our efforts to comprehend and embrace new climates as they come into being.

## **Acknowledgements**

I would like to thank the staff of Norwich library for helping access local newspapers for July 1900. Early versions of this paper were presented at the RGS-IBG Annual Conference, Manchester August 2009, in the session 'Cultural Spaces of Climate' and in the 'Environment and Culture' seminar series at the University of East Anglia in January 2010. The questions and comments of participants at these occasions are acknowledged, as are the helpful suggestions of two anonymous reviewers.

## **References**

Anderson, K. (2005) **Predicting the weather: Victorians and the science of meteorology** Chicago University Press, Chicago IL, 376pp.

- Behringer,W. (2010) **A cultural history of climate** [translated from German] Polity Press, Cambridge, UK, 295pp.
- Boia,L. (2005) **The weather in the imagination** Reaktion Books, London, 200pp.
- Brookes-Davies,D. (1997) Introduction pp.xi-xxix in, **The Go-Between** L.P.Hartley, Penguin, London, 293pp.
- Buckland,D., MacGilp,A. and Parkinson,S. (eds.) (2006) **Burning ice: art and climate change** Cape Farewell/York Publishing, London, 177pp.
- Crate,S.A. and Nuttall,M. (eds.) (2008) **Anthropology and climate: from encounters to actions** Left Coast Press, Walnut Creek CA, 416pp.
- Cruikshank,J. (2005) **Do glaciers listen? Local knowledge, colonial encounters and social imagination** UBC Press, Vancouver, Canada, 312pp.
- Daniels,S. and Endfield,G.H. (2009) Narratives of climate change: introduction **Journal of Historical Geography** 35(2), 215-222
- Edwards,P.N. (2010) **A vast machine: computer models, climate data and the politics of global warming** MIT Press, Cambridge MA, 528pp.
- Fine,G.A. (2007) **Authors of the storm: meteorologists and the culture of prediction** University of Chicago Press, Chicago IL, 280pp.
- Fox,K. (2005) **Watching the English: the hidden rules of English behaviour** Hodder & Stoughton, London, 432pp.
- Golinski,J. (2007) **British weather and the climate of enlightenment** Chicago University Press, Chicago IL, 282pp.
- Gramelsberger,G. and Feichter,J. (eds.) (2011) **Climate change and policy: The calculability of climate change and the challenge of uncertainty** Springer, Heidelberg, 240pp.
- Gregory,J.M., Jones,P.D. and Wigley,T.M.L. (1991) Precipitation in Britain: an analysis of area-average data updated to 1989 **International Journal of Climatology**, 11, 331-345
- Harley,T.A. (2003) Nice weather for the time of year: the British obsession with the weather pp.103-120 in, **Weather, climate, culture** (eds.) Strauss,S. and Orlove,B., Berg, Oxford, UK, 307pp.
- Hartley,L.P. (1997/1953) **The Go-Between** Penguin, London, 293pp.
- Heise,U.K. (2008) **Sense of place and sense of planet** Oxford University Press, Oxford, UK, 250pp.
- Higdon,D.L. (1977) **Time and English fiction** MacMillan Press, London, 168pp.
- Hitchings,R. (2010) Seasonal climate change and the indoor city worker **Transactions of the Institute of British Geographers** 35(2), 282-298
- Horn,R. (2007) **Weather reports you** Artangel/Steidl, Göttingen, Germany, 196pp.
- Hulme,M., Jenkins,G.J., Lu,X., Turnpenny,J.R., Mitchell,T.D., Jones,R.G., Lowe,J., Murphy,J.M., Hassell,D., Boorman,P., McDonald,R. and Hill,S. (2002) **Climate change scenarios for the UK: the UKCIP02 scientific report** Tyndall Centre, UEA, Norwich, UK, 112pp.
- Hulme,M. (2008) Geographical work at the boundaries of climate change **Transactions of the Institute of British Geographers** 33(1), 5-11

- Hulme, M. (2009) **Why we disagree about climate change: understanding controversy, inaction and opportunity** Cambridge University Press, Cambridge, UK, 393pp.
- Hulme, M. (2010) Problems with making and governing global kinds of knowledge **Global Environmental Change** 20(4), 558-564
- Ingersoll, E.G. (2004) Intertextuality in L P Hartley's *The Go-Between* and Ian McEwan's *Atonement* **Forum of Modern Language Studies** 40(3), 241-258
- Jankovic, V. (2000) **Reading the skies: a cultural history of English weather, 1650-1820** Manchester University Press, Manchester, UK, 270 pp.
- Jenkins, G.J., Murphy, J.M., Sexton, D.S., Lowe, J.A., Jones, P. and Kilsby, C.G. (2009) **UK climate projections: briefing report** Met Office Hadley Centre, Exeter, 56pp.
- Jones, P.D. and Moberg, A. (2003) Hemispheric and large-scale surface air temperature variations: An extensive revision and an update to 2001 **Journal of Climate** 16, 206-223
- Kagan, J. (2009) **The three cultures: natural sciences, social sciences and the humanities in the 21<sup>st</sup> century** Cambridge University Press, Cambridge, UK, 310pp.
- Klinenberg, E. (2002) **Heat wave: a social autopsy of disaster in Chicago** University of Chicago Press, Chicago IL, 305pp.
- Lamb, H.H. (1972) British Isles weather types and a register of the daily sequence of circulation patterns 1861-1971 **Geophysical Memoirs**, Vol.16, 116pp.
- Latour, B. (1993) **We have never been modern** [translated from French] Harvard University Press, Harvard MA, 168pp.
- Lawrence, A. (2009) The first cuckoo in winter: phenology, recording, credibility and meaning in Britain **Global Environmental Change** 19(1), 173-179
- Livingstone, D.N. (2004) Climate pp.77-79 in, **Patterned ground: entanglements of nature and culture** (eds.) Thrift, N., Harrison, S. and Pile, S., Reaktion Books, London, 350pp.
- Lynas, M. (2004) **High tide: news from a warming world** Flamingo, London, 341pp.
- McCalman, J. (2005) 'All just melted with heat': mothers, babies and 'hot winds' in colonial Melbourne pp.104-115 in, **A change in the weather: climate and culture in Australia** (eds.) Sherratt, T., Griffiths, T. and Robin, L., National Museum of Australia Press, Canberra, Australia, 216pp.
- Mergen, B. (2008) **Weather matters: an American cultural history since 1900** University Press of Kansas, Lawrence KS, 397pp.
- Meyer, W.B. (2000) **Americans and their weather** Oxford University Press, Oxford, 278pp.
- Miller, C.A. (2004) Climate science and the making of a global political order pp.46-66 in, **States of knowledge: the co-production of science and the social order** (ed.) S.Jasanoff, Routledge, London, 317pp.
- Nicholson, J. (2006) **The perfect summer: dancing into shadow in 1911** John Murray, London, 290pp.
- Parker, D.E., Legg, T.P. and Folland, C.K. (1991) A new daily Central England Temperature series, 1772-1991 **Climate Research Technical Note No.11**, Hadley Centre, Bracknell, UK, 56pp.
- Porter, T.M. (1995) **Trust in numbers: the pursuit of objectivity in science and public life** Princeton University Press, Princeton NJ, 310pp.

- Putra-Johns,A. and Trexler,A. (2011, in pres) Climate change in literature and literary criticism **Wiley Inter-disciplinary Reviews (WIRES) Climate Change** 2(2)
- Robinson,J. (2008) Being undisciplined: transgressions and intersections in academia and beyond **Futures** 40, 70-86
- Ross,A. (1991) Is global culture warming up? **Social Text** 28, 3-30.
- Sherratt,T. (2005) Human elements pp.1-17 in, **A change in the weather: climate and culture in Australia** (eds.) Sherratt,T., Griffiths,T. and Robin,L., National Museum of Australia Press, Canberra, Australia, 216pp.
- Sherratt,T., Griffiths,T. and Robin,L. (eds.) (2005) **A change in the weather: climate and culture in Australia** National Museum of Australia Press, Canberra, Australia, 216pp.
- Semyard,N. (1980) Pinter's *Go-Between* **Critical Quarterly** 22(3), 21-33
- Stott,P.A., Stone,D.A. and Allen,M.R. (2004) Human contribution to the European heatwave of 2003 **Nature** 432, 611-614
- Strauss,S. and Orlove,B. (eds) (2003) **Weather, climate, culture** Berg/Oxford International, Oxford, 416pp.
- Willmott,M.B. (1975) 'What Leo knew': the childhood world of L P Hartley **English** 24(118), 3-10