

A Chronicle of the Age of Consequences

Chapter 24 What Scrooge Saw

Our family has a tradition of watching an old holiday movie on Christmas Eve. This year we dug out a chestnut – a 1930s version of *A Christmas Carol*, Charles Dickens' timeless tale of redemption and hope. Although I knew the story well, having heard it over and over in one form or another, this viewing struck an unexpected chord in me. Scrooge, it felt like, was alive *today*, not 1842. Dickens' parable about a greedy, cold-hearted businessman bent on accumulating wealth at the cost of all that is good in human life seemed more apt for the Age of Consequences than the early Industrial Revolution. Curious, a few days later I located a copy of the original story, which reinforced my feeling that Dickens was a man *way* ahead of his time. It also gave me an idea. The Ghosts of Christmas Present and Future, were they around today, would have a different sort of lesson for Scrooge. So, I offer here excerpts from the famous tale leavened, alas, with recent headlines. Call it *A Climate Carol*.

May the Ghost of Dickens look kindly on my effort!

"Come in!" exclaimed the Ghost. "Come in! and know me better, man!"

Scrooge entered timidly, and hung his head before this Spirit. He was not the dogged Scrooge he had been; and though the Spirit's eyes were clear and kind, he did not like to meet them.

"I am the Ghost of Christmas Present," said the Spirit. "Look upon me!"

The Ghost of Christmas Present rose. "Spirit," said Scrooge submissively, "conduct me where you will. I went forth last night on compulsion, and I learnt a lesson which is working now. To-night, if you have aught to teach me, let me profit by it."

"Touch my robe!"

Scrooge did as he was told, and held it fast...

2010 was a year of record-smashing weather extremes from Nashville to Moscow, from the Amazon to Pakistan, ending with staggering deluges in California and Australia, where more than a year's annual rain fell in just 24 hours in the town of Carnarvon. In May, Nashville and the surrounding region experienced catastrophic, record flooding. Despite ongoing forecasts and warnings for heavy rain and widespread flooding several days in advance, 26 people died in the region – 11 of those in Nashville, where property damage exceeded \$2 billion.

"The term '100-year event' really lost its meaning this year," said Chris Fugate, head of the Federal Emergency Management Agency.

New York Times (8/14): "The floods battered New England, then Nashville, then Arkansas, then Oklahoma – and were followed by a deluge in Pakistan that has upended the lives of 20 million people.

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“The summer’s heat waves baked the eastern United States, parts of Africa and eastern Asia, and above all Russia, which lost millions of acres of wheat and thousands of lives in a drought worse than any other in the historical record.

“Seemingly disconnected, these far-flung disasters are reviving the question of whether global warming is causing more weather extremes. The collective answer of the scientific community can be boiled down to a single word: probably.

“The climate is changing,” said Jay Lawrimore, chief of climate analysis at the National Climatic Data Center in Asheville, N.C. “Extreme events are occurring with greater frequency, and in many cases with greater intensity.” He described excessive heat, in particular, as “consistent with our understanding of how the climate responds to increasing greenhouse gases.”

“Theory suggests that a world warming up because of those gases will feature heavier rainstorms in summer, bigger snowstorms in winter, more intense droughts in at least some places and more record-breaking heat waves. Scientists and government reports say the statistical evidence shows that much of this is starting to happen.”

“Weather Bomb Hits Midwest...Strongest storm ever recorded in the Midwest smashes all-time pressure records.” – meteorologist Jeff Masters.

At 5:32pm on October 26, Bigfork, Minnesota recorded the lowest pressure in the U.S. ever by a non-coastal storm at 955 milibars.

Jeff Masters on the storm’s connection to climate change: “Since a warmer world increases the amount of evaporation from the surface and puts more moisture in the air, these storms drop more precipitation. During the process of creating that precipitation, the water vapor in the storm must condense into liquid or frozen water, liberating ‘latent heat’ – the extra heat that was originally added to the water vapor to evaporate it in the first place. This latent heat intensifies the storm, lowering the central pressure and making the winds increase.”

Minnesota meteorologist Paul Douglas on the storm: “My dad always said “Actions have consequences.” To pretend that a 38% increase in greenhouse gases isn’t going to have any impact, that we can have our cake and eat it too, and smear it all over our face, and maybe have our grandchildren deal with the hangover, I think is immoral.”

Associated Press (12/24): “Many California residents who endured flooding, mudslides and evacuations during a weeklong onslaught of rain must now clean up or rebuild – and could face the prospect of not being able to spend Christmas at home... Preliminary damage estimates throughout California were already in the tens of millions of dollars and were expected to rise... In Highland, people were literally chased from their homes by walls of mud and water, leaving behind dwellings strung with holiday lights.... Leslie Constante burst into tears when she approached her parents’ home and saw a red tag slapped on the garage, meaning authorities had deemed it unsafe to enter. Out front, a display with two holiday reindeer was enveloped in mud several feet deep...”

Bloomberg News (12/26): “Anger mounted over passengers stranded on airport tarmacs and in terminals as flight delays threatened to stretch into the weekend following the worst December snowstorm to hit New York City in six decades...As many as 1.2 million airline customers may have been affected by almost 8000 flight cancellations as the storm that hit three days ago closed major airports.”

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In late December Australia was hit with massive floods covering an area the size of France and Germany combined. Flooding closed approximately 300 roads across Queensland, including two major highways into the capital Brisbane. Damage to infrastructure in Australia has been estimated at over \$1 billion by the government, and economists have estimated the Australian economy will suffer an additional \$6 billion in damage over the coming months.

“In many ways it is a disaster of biblical proportions,” said Queensland State Treasurer Andrew Fraser.

“I actually think the science around climate change is real,” said President Obama to reporters in 2009. “If you look at the flooding that’s going on right now in North Dakota and you say to yourself ‘If you see an increase of two degrees [F], what does that do in terms of the situation there?’ That indicates the degree to which we have to take this seriously.”

“Spirit,” said Scrooge, with an interest he had never felt before, “tell me if Tiny Tim will live.”

“I see a vacant seat,” replied the Ghost, “in the poor chimney corner, and a crutch without an owner, carefully preserved. If these shadows remain unaltered by the Future, the child will die.”

“No, no,” said Scrooge. “Oh no, kind Spirit! Say he will be spared.”

“If these shadows remain unaltered by the Future, none other of my race,” returned the Ghost, “will find him here. What then? If he be like to die, he had better do it, and decrease the surplus population.”

Scrooge hung his head to hear his own words quoted by the Spirit, and was overcome with penitence and grief.

“Man,” said the Ghost, “if man you be in heart, forbear that wicked cant until you have discovered What the surplus is, and Where it is. Will you decide what men shall live, what men shall die? It may be, that in the sight of Heaven, you are more worthless and less fit to live than millions like this poor child.”

Scrooge bent his head before the Ghost’s rebuke, and trembling cast his eyes upon the ground.

In December, the National Oceanographic and Atmospheric Administration reported that 2010 (Jan-Nov) is the hottest year on record since record keeping began in 1880, with the surface temperature 1.15 degrees Fahrenheit (F) above the 20th-century average. November was the warmest on record at 2.74 F above the average.

Jeff Masters: “The year 2010 now has the most national extreme heat records for a single year – nineteen. These nations comprise 20% of the total land area of Earth. This is the largest area of Earth’s surface to experience all-time record high temperatures in any single year in the historical record.”

Kuwait recorded its hottest temperature in history on June 15th at 126.7 F

Iraq had its hottest day in history on June 14th at 125.6 F

Ditto with Saudi Arabia on June 22nd

Ditto with Chad at 117.7 F, Niger at 118 F and Sudan on June 25th at 121.1 F

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This summer, the average highest temperature across China was the highest since 1961; 97 weather stations reported record-breaking daily rainfall (only 7 daily records were broken between 2000 and 2009) and 133 broke annual records.

“In the past twelve months, we experienced extreme weather more often than in any other year in the past decade,” said Chen Zhenlin, director of emergency response and disaster mitigation for the China Meteorological Administration. “And global warming is largely to blame.”

“Everyone is talking about climate change now, said Russian President Dmitri Medvedev in August. “Unfortunately, what is happening now in our central regions is evidence of this global climate change, because we have never in our history faced such weather conditions in the past.”

“In my thirty years as a meteorologist, I’ve never seen global weather patterns as strange as those we’ve had in 2010, said Jeff Masters. “The stunning extremes we witnessed gives me concern that our climate is showing the early signs of instability... Forty years from now, the crazy weather of 2010 will seem pretty tame. We’ve bequeathed to our children a future with a radically changed climate that will regularly bring unprecedented weather events – many of them extremely destructive – to every corner of the globe. This year’s wild ride was just the beginning...”

Much they saw, and far they went, and many houses they visited, but always with a happy end. The Spirit stood beside sick beds, and they were cheerful; on foreign lands, and they were close to home; by struggling men, and they were patient in their greater hope; by poverty, and it was rich. In almshouse, hospital, and jail, in misery’s every refuge, where vain man in his little brief authority had not made fast the door and barred the Spirit out, he left his blessing, and taught Scrooge his precepts...

“My life upon this globe is very brief,” said the Ghost. “It ends to-night.”

“To-night!” cried Scrooge.

“To-night at midnight. Hark! The time is drawing near.”

“Forgive me if I am not justified in what I ask,” said Scrooge, looking intently at the Spirit’s robe, “but I see something strange, and not belonging to yourself, protruding from your skirts. Is it a foot or claw?”

“It might be a claw, for the flesh there is upon it,” was the Spirit’s sorrowful reply. “Look here.”

From the foldings of its robe, it brought two children; wretched, abject, frightful, hideous, miserable. They knelt down at its feet and clung upon the outside of its garment.

“Oh, Man! Look here. Look, look, down here!” exclaimed the Ghost.

They were a boy and a girl. Yellow, meager, ragged, scowling, wolfish; but prostrate too in their humility...

Scrooge stared back, appalled. “Spirit, are they yours?” Scrooge could say no more.

“They are Man’s,” cried the Spirit, looking down upon them. This boy is Ignorance. This girl is Want. Beware them both, and all of their degree, but most of all beware this boy, for on his brow I see that written which is Doom, unless the writing be erased. Deny it!” cried the

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Spirit, stretching out its hand towards the city. "Slander those who tell it ye! Admit it for your factious purposes, and make it worse. And bide the end!"

In an impassioned speech at the United Nations Summit on Climate Change in Cancun in early December, Mexican President Felipe Calderon called for the nations of the world to stop "squabbling" and to work as one to halt global warming.

"We fail to understand," said Calderon, "that we're all passengers in the same vessel, in the same aircraft, or the same vehicle. Our aircraft has now seen the disappearance of the pilot. Something happened in the cabin. And all the passengers are responsible for the aircraft, and we're squabbling about these matters. Whether the guilt lies with those in the tourist class or those sitting up front in first class and the plane continues to go down...somebody has to take control of the aircraft..."

"Let us act. I don't think that radical pretexts or all-or-nothing postures should provide a proper excuse for those who don't want to cooperate to spend another year fighting and squabbling among the passengers of that single aircraft which is on the point of crashing. We need to get control back over the vessel..."

The bell struck twelve.

Scrooge looked about him for the Ghost, and saw it not. As the last stroke ceased to vibrate, he remembered the prediction of old Jacob Marley, and lifting his eyes, beheld a solemn Phantom, draped and hooded, coming, like a mist along the ground, towards him.

It was shrouded in a deep black garment, which concealed its face, its form, and left nothing of it visible save one outstretched hand. But for this it would have been difficult to detach its figure from the night, and separate it from the darkness by which it was surrounded.

He felt that it was tall and stately when it came beside him, and that its mysterious presence filled him with a solemn dread. He knew no more, for the Spirit neither spoke nor moved.

"I am in the presence of the Ghost of Christmas Yet to Come?" said Scrooge.

The Spirit answered not, but pointed onward with its hand.

"You are about to show me shadows of the things that have not happened, but will happen in the time before us," Scrooge pursued. "Is that so, Spirit?"

The upper portion of the garment was contracted for an instant in its folds, as if the Spirit had inclined its head. That was the only answer he received.

"Not only is Earth's temperature rising, but the rate of this change is accelerating," said Lonnie Thompson, glaciologist and climate scientist in an interview. "This means that our future may not be a steady, gradual change in the world's climate, but an abrupt and devastating deterioration from which we cannot recover... Despite all this evidence, plus the well-documented continual increase in atmospheric greenhouse gas concentrations, societies have taken little action to address this global-scale problem. Hence, the rate of global carbon dioxide emissions continues to accelerate. As a result of our inaction, we have three options: mitigation, adaptation, and suffering."

The National Center for Atmospheric Research warns we risk multiple, devastating global droughts even on a moderate greenhouse gas emissions path. "By the end of the century,

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many populated areas, including parts of the United States, could face PDSI readings [a index of drought severity] in the range of -8 to -10, and much of the Mediterranean could fall to -15 to -20 [in comparison, the 1930's Dust Bowl was -3]. Such readings would be almost unprecedented.”

Nature Geoscience: “Oceans are acidifying ten times faster today than 55 million years ago when a mass extinction of marine species occurred... Unless we curb carbon emissions we risk mass extinctions, degrading coastal waters and encouraging outbreaks of toxic jellyfish and algae.”

Nature: “Global warming is blamed for 40% decline in the ocean’s phytoplankton... Microscopic life crucial to the marine food chain is dying out. The consequences could be catastrophic.”

“Spirit!” said Scrooge, shuddering from head to foot. “I see, I see. The case of this unhappy man might be my own. My life tends that way now. Merciful Heaven, what is this!”

He recoiled in terror, for the scene had changed, and now he almost touched a bed: a bare, uncurtained bed on which, beneath a ragged sheet, there lay a something covered up, which, though it was dumb, announced itself in awful language.

The room was very dark, too dark to be observed with any accuracy, though Scrooge glanced around it in obedience to a secret impulse, anxious to know what kind of room it was. A pale light, rising in the outer air, fell straight upon the bed; and on it, plundered and bereft, unwatched, unwept, uncared for, was the body of this man.

Scrooge glanced towards the Phantom. Its steady hand was pointed to the head. The cover was so carelessly adjusted that the slightest raising of it, the motion of a finger on Scrooge’s part, would have disclosed the face. He thought of it, felt how easy it would be to do, and longed to do it; but had no more power to withdraw the veil than to dismiss the spectre at his side...

“Spirit!” he said, “this is a fearful place. In leaving it, I shall not leave its lesson, trust me. Let us go!”

Still the Ghost pointed with an unmoved finger to the head.

“I understand you,” Scrooge returned, “and I would do it, if I could. But I have not the power, Spirit. I have not the power.”

Again it seemed to look upon him.

National Science Foundation: “It is increasingly clear that if the world strays significantly above 450 ppm [parts-per-million] atmospheric concentrations of carbon dioxide for any length of time, we will find it unimaginably difficult to stop short of 800 to 1000 ppm.”

Aradhna Tripathi, Earth and Space Sciences professor at UCLA, and lead author on a paper published in *Science* in October: “The last time carbon dioxide levels were apparently as high as they are today [15 to 20 million years ago] – and were sustained at those levels – global temperatures were 5 to 10 degrees Fahrenheit higher than they are today, the sea level was approximately 75 to 120 feet higher than today, there was no permanent sea ice cap in the Arctic and very little ice on Antarctica and Greenland.”

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The Royal Society (UK): “A 4 degree Celsius world [10 degrees F] would be facing enormous adaptation challenges in the agricultural sector, with large areas of cropland becoming unsuitable for cultivation, and declining agricultural yields. This world would also rapidly be losing its ecosystem services, owing to large losses in biodiversity, forests, coastal wetlands, mangroves and saltmarshes, and terrestrial carbon stores, supported by an acidified and potentially dysfunctional marine ecosystem. Drought and desertification would be widespread, with large numbers of people experiencing increased water stress, and others experiencing changes in seasonality of water supply. There would be a need to shift agricultural cropping to new areas, impinging on unmanaged ecosystems and decreasing their resilience; and large-scale adaptation to sea-level rise would be necessary...

“In such a 4 degree Celsius world, the limits for human adaptation are likely to be exceeded in many parts of the world, while the limits for adaptation for natural systems would largely be exceeded throughout the world. Hence, the ecosystem services upon which human livelihoods depend would not be preserved...”

Joe Romm of the blog Climate Progress: “If we warm more than 3.5 degrees F from pre-industrial levels – and especially if we warm more than 7 degrees F, as would be all but inevitable if we keep on our current emissions path for much longer – then the environment and climate that made modern human civilization possible will be ruined...and that means misery for many, if not most, of the next 10 to 20 billion people to walk the planet.”

Elizabeth Kolbert, journalist and author, in her book *Field Notes from a Catastrophe*: “It may seem impossible to imagine that a technologically advanced society could choose, in essence, to destroy itself, but that is what we are now in the process of doing.”

A churchyard. Here, then, the wretched man whose name he had now to learn, lay underneath the ground. The spirit stood among the graves and pointed down to One. He advanced towards it trembling. The Phantom was exactly as it had been, but he dreaded that he saw new meaning in it solemn shape.

“Before I draw nearer to that stone to which you point,” said Scrooge, “answer me one question. Are these the shadows of the things that Will be, or are they shadows of things that May be, only?”

Still the Ghost pointed downward to the grave by which it stood.

“Men’s courses will foreshadow certain ends, to which, if persevered in, they must lead,” said Scrooge. “But if the courses be departed from, the ends will change. Say it is thus with what you show me!”

The Spirit was immovable as ever.

Scrooge crept towards it, trembling as he went; and following the finger read upon the stone of the neglected grave his own name, EBENEZER SCROOGE.

“Am I that man who lay upon the bed?” he cried, upon his knees.

The finger pointed from the grave to him, and back again.

“No, Spirit! Oh, no, no!”

The finger was still there.

“Spirit!” he cried, tight clutching at its robe, “hear me! I am not the man I was. I will not be the man I must have been but for this intercourse. Why show me this, if I am past all hope?”

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For the first time the hand appeared to shake.

“Good Spirit,” he pursued, as down upon the ground he fell before it: “Your nature intercedes for me, and pities me. Assure me that I yet may change these shadows you have shown me by an altered life!”

The kind hand trembled.

“I will honor Christmas in my heart and try to keep it all the year. I will live in the Past, Present, and the Future. The Spirits of all Three shall strive within me. I will not shut out the lessons they teach. Oh, tell me I may sponge away the writing on this stone!”

Holding up his hands in a last prayer to have his fate reversed, he saw an alteration in the Phantom’s hood and dress. It shrunk, collapsed, and dwindled down to a bedpost.

Yes! And the bedpost was his own. The bed was his own, the room was his own. Best and happiest of all, the Time before him was his own, to make amends in!

“I will live in the Past, the Present, and the Future!” Scrooge repeated, as he scrambled out of bed. “The Spirits of all Three shall strive within me. Oh Jacob Marley! Heaven and the Christmas Time be praised for this! I say it on my knees, old Jacob, on my knees!”