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## **Some Convenient Distortions**

### **A Brief Guide to Distortions, Misleading Statements, Exaggerations, and Errors in Al Gore's *An Inconvenient Truth*\***

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Former Vice President Al Gore's Oscar-winning film, *An Inconvenient Truth* (*AIT*) and its companion book purport to be a non-partisan, non-ideological exposition of climate science. In reality, the film is a computer-enhanced lawyer's brief for global warming alarmism and energy rationing. The only facts and studies Gore considers are those convenient to his scare-them-green agenda. And in numerous instances, he distorts the evidence he cites.

Some distortion is inevitable in any popular presentation of technical scientific and economic issues. But in *AIT* we find example after example—and all serve to promote alarm and regulatory activism. *AIT* is not a balanced assessment of the issues. Following is a partial list of *AIT*'s many distortions grouped by category.

#### **One-Sided**

- Never acknowledges the indispensable role of fossil fuels in alleviating hunger and poverty, extending human life spans, and democratizing consumer goods, literacy, leisure, and personal mobility.<sup>1</sup>
- Never acknowledges the environmental, health, and economic benefits of climatic warmth and the ongoing rise in the air's carbon dioxide (CO<sub>2</sub>) content.<sup>2</sup>
- Never acknowledges the role of natural variability in shrinking mountain glaciers.<sup>3</sup>
- Presents a graph tracking CO<sub>2</sub> levels and global temperatures during the past 650,000 years, but never mentions the most significant point: Global temperatures were warmer than the present during each of the past four interglacial periods,

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\* For a more detailed discussion, go to [www.cei.org](http://www.cei.org) for a more in-depth version of this paper.

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- even though CO<sub>2</sub> levels were lower.<sup>4</sup>
- Neglects to mention that aggregate mortality and mortality rates related to extreme weather events fell dramatically during the 20<sup>th</sup> century.<sup>5</sup>
  - Mentions that the greenhouse effect keeps the planet habitably warm but not that weather processes keep the planet habitably cool, creating the false impression that greenhouse gases have an unlimited power to warm the atmosphere.<sup>6</sup>
  - Ignores the large role of natural variability in Arctic climate, never mentioning that Arctic temperatures in the 1930s equaled or exceeded those of the late 20<sup>th</sup> century,<sup>7</sup> and that the Arctic during the early- to mid-Holocene was significantly warmer than it is today.<sup>8</sup>
  - Neglects to mention the circumstances that make it reasonable rather than blameworthy for America to be the biggest CO<sub>2</sub> emitter: the world's largest economy, abundant fossil energy resources, markets integrated across continental distances, and the world's most mobile population.

### **Misleading**

- Implies that, throughout the past 650,000 years, changes in carbon dioxide levels preceded and largely caused changes in global temperature, whereas the causality runs mostly the other way, with CO<sub>2</sub> changes trailing global temperature changes by hundreds to thousands of years.<sup>9</sup>
- Cites increases in insurance payments to victims of hurricanes, floods, drought, tornadoes, wildfires, and other natural disasters as evidence of a global warming-ravaged planet, ignoring research that finds no long-term trend once weather-related damages are adjusted for changes in population, wealth, and inflation.<sup>10</sup>
- Re-labels as “major floods” (a category defined by physical magnitude) a chart of “damaging floods” (a category defined by socioeconomic and political criteria), inflating the importance of climate factors in flood risk.<sup>11</sup>
- Reports that many U.S. cities and towns broke summer heat records in 2005 but does not mention that cities and towns get warmer as they grow—the urban heat island effect.<sup>12</sup>
- Cites increases in the annual number of Thames River barrier closings as evidence of increased flood risk from global warming. However, in recent years the barriers were often closed to keep tide water in as well as tidal surges out.<sup>13</sup>
- Blames global warming for the increase of “invasive alien species” in Switzerland. The species in question were “exotic” plants deliberately introduced into Swiss parks and gardens as long as 200 years ago.<sup>14</sup>
- Blames global warming for the decline “since the 1960s” of the Emperor Penguin population in Antarctica, implying an ongoing warming-related threat. In fact, the decline took place in the 1970s—possibly due to the advent of Antarctic ecotourism—and the population has been stable since the late 1980s.<sup>15</sup>
- Falsely implies that a survey, which found that none of 928 science articles (actually abstracts) disputed the IPCC's conclusion that most recent warming is likely due to rising greenhouse gas levels,<sup>16</sup> shows that Gore's apocalyptic view of global warming and call for regulatory action are the scientific “consensus.”
- Reports that 48 Nobel Prize-winning scientists accused Bush of distorting science, without mentioning that the scientists acted as members of a 527 political group

- set up to promote the Kerry for President Campaign.<sup>17</sup>
- Confuses fuel efficiency (the amount of useful work per unit of fuel consumed) with fuel economy (miles per gallon),<sup>18</sup> falsely portraying U.S. cars and trucks as inefficient compared to their European and Japanese counterparts.

### **Exaggerated**

- Hypes the importance of the National Oceanic and Atmospheric Administration (NOAA) running out of names (21 per year) for Atlantic tropical storms in 2005. Yet the practice of naming storms only goes back to 1953,<sup>19</sup> and storm detection capabilities have improved dramatically since the 1950s. Non-land-falling storms that once would have gone undetected are recorded today.
- Claims that polar bears “have been drowning in significant numbers,” but this is based on a single report that four polar bears drowned in one month of one year, following an abrupt windstorm.<sup>20</sup>
- Portrays the collapse in 2002 of the Larson-B ice shelf—a formation the “size of Rhode Island”—as a harbinger of doom. For perspective, the Larson-B was 180<sup>th</sup> the size of Texas and 1/246<sup>th</sup> the size of the West Antarctic Ice Sheet (WAIS).

### **Speculative**

- Blames global warming for the record-breaking 37-inch downpour in Mumbai, India, in July 2005, even though there has been no long-term increase in Mumbai rainfall for the month of July in 45 years.<sup>21</sup>
- Blames global warming for recent floods in China’s Shandong and Sichuan provinces, even though far more damaging floods struck those areas in the 19<sup>th</sup> and early 20<sup>th</sup> centuries—Shandong in 1887 and 1931 and Sichuan in 1954.<sup>22</sup>
- Warns of water shortages in Asia as Tibetan glaciers recede, even though Asia’s river systems are fed by annual snowmelt, and snow cover increased in southern China (the Tibetan plateau) during the latter half of the 20<sup>th</sup> century.<sup>23</sup>
- Blames global warming for the disappearance of Lake Chad, a disaster more likely stemming from a combination of regional climate variability and societal factors such as overgrazing.<sup>24</sup>
- Blames global warming for the severe drought that hit the Amazon in 2005. RealClimate.Org—a website set up by Gavin Schmidt of NASA, Michael Mann of the University of Virginia, and others to debunk global warming “skeptics”—concluded that it is not possible to link the drought to global warming.<sup>25</sup>
- Blames global warming for Europe’s killer heat wave of 2003—an event caused by an atmospheric circulation anomaly.<sup>26</sup>
- Claims that global warming is “disrupting millions of delicately balanced ecological relationships among species” based on a study showing that, in the Netherlands, caterpillars are hatching two weeks earlier than the peak arrival season of caterpillar-eating migratory birds. *AIT* claims the birds’ “chicks are in trouble,” yet the same researcher whom Gore cites found “no demonstrable effect” on the bird population during the past 20 years.<sup>27</sup>
- Warns that global warming is destroying coral reefs, even though today’s main reef builders evolved and thrived during periods when the world was 10-15°C warmer than the present.<sup>28</sup>

- Asserts without evidence that global warming is causing more tick-borne disease (TBD). An Oxford University study found no relationship between climate change and TBD in Europe.<sup>29</sup>
- Blames global warming for outbreaks of toxic blue-green algae blooms in the Baltic Sea in 2005—a phenomenon that an international panel of experts attributed to record-high phosphorus levels, record-low nitrogen-to-phosphorus levels, and regional wind patterns.<sup>30</sup>
- Claims ocean temperatures are “way above” the range of natural variability—yet proxy data indicate that the Atlantic Ocean off the West Coast of Africa and the Bermuda Rise were warmer during the Medieval Warm Period.<sup>31</sup>
- Insinuates that global warming is a factor in the emergence of some 30 “new” diseases over the last three decades, but cites no supporting research or evidence.
- Warns that half the Greenland Ice Sheet and half the West Antarctic Ice Sheet could break off and slide into the sea or melt, raising sea levels by 20 feet in our lifetimes or those of our children. No scientific studies support this claim.

### Wrong

- Claims there is a “strong, new emerging consensus” linking global warming to an increase in hurricane intensity and duration. The World Meteorological Organization recently stated that, “no consensus has been reached on this issue.”<sup>32</sup>
- Claims that Nairobi, Kenya, was above the mosquito line and thus malaria-free until recent global warming. In fact, malaria epidemics were common in Nairobi during the 1920s to the 1940s.<sup>33</sup> The resurgence of malaria in East Africa is due to decreased spraying of homes with DDT, anti-malarial drug resistance, and inadequate public health programs.<sup>34</sup>
- Claims that glaciologist Lonnie Thompson’s reconstruction of climate history from Tibetan and Andean ice cores proves the Medieval Warm Period was “tiny” compared to the warming of recent decades. It doesn’t. Four of Thompson’s six ice cores indicate that several decades of the Medieval Warm Period were as warm as or warmer than any recent decade.<sup>35</sup>
- Calls carbon dioxide the “most important greenhouse gas.” Water vapor is the leading contributor to the greenhouse effect.<sup>36</sup>
- Claims the rate of global warming is accelerating. In fact, the rate has been remarkably constant—roughly 0.17°Celsius per decade from 1976 to 2005.<sup>37</sup>
- Blames global warming for Hurricane Catarina, the first South Atlantic hurricane on record, which struck Brazil in 2004. Catarina formed not because the South Atlantic was unusually warm—sea temperatures were cooler than normal—but because the air was so much colder that it produced the same kind of heat flux from the ocean that fuels hurricanes in warmer waters.<sup>38</sup>
- Claims that 2004 set an all-time record for the number of tornadoes in the United States. Tornado frequency has not increased; rather, the detection of smaller tornadoes has increased. If we consider the tornadoes that have been detectable for many decades, there is actually a downward trend since 1950.<sup>39</sup>

*An Inconvenient Truth* purports to be a non-ideological exposition of climate science and common sense morality. As this *On Point* shows, *AIT* uses science selectively and often

dubiously to advance a political agenda of alarm and energy rationing. Gore calls global warming a “moral issue” but somehow he sees nothing immoral in the attempt to make fossil energy scarcer and more costly in a world where 1.6 billion people have never flipped a light switch and billions more are too poor to own an automobile.

Nearly every significant statement that Vice President Gore makes regarding climate science and climate policy is either one-sided, misleading, exaggerated, speculative, or wrong. In light of these numerous distortions, *AIT* is ill suited to serve as a guide to climate science and climate policy for the American people.

## Notes

<sup>1</sup> On the liberating effects of energy abundance, see Bjørn Lomborg, *The Skeptical Environmentalist: Measuring the Real State of the World* (Cambridge: 2001), pp. 118-119.

<sup>2</sup> For an introductory discussion of those benefits, see Center for the Study of Carbon Dioxide and Global Change, “Sustainable Well Being and Atmospheric CO<sub>2</sub> Enrichment,” March 7, 2007, <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V10/N10/EDIT.jsp>.

<sup>3</sup> The snows of Kilimanjaro have been disappearing for more than a century due to a regional shift from a moist to a dry climate. See, Kaser G., D.R. Hardy, T. Mölg, R.S. Bradley, and T.M. Hyera, “Modern Glacier Retreat on Kilimanjaro as Evidence of Climate Change: Observations and Facts,” *International Journal of Climatology* 24 (2004): 329–39.

<sup>4</sup> On the greater warmth of previous interglacial periods, see Petit, J.R., J. Jouzel, D. Raynaud, N.I. Barkov, J.-M. Barnola, I. Basile, M. Bender, J. Chappellaz, M. Davis, G. Delaygue, M. Delmotte, V.M. Kotlyakov, M. Legrand, V.Y. Lipenkov, C. Lorius, L. Pepin, C. Ritz, E. Saltzman, and M. Stievenard, “Climate and Atmospheric History of the Past 420,000 Years from the Vostok Ice Core, Antarctica,” *Nature* 399 (1999): 429–36, reviewed by the Center for the Study of Carbon Dioxide and Global Change, <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V2/N12/C1.jsp>

<sup>5</sup> As documented by Goklany, I.M., “Death and Death Rates Due to Extreme Weather Events: Global and U.S. Trends, 1900-2004,” June 6, 2006, prepared for the proceedings of the Climate Change & Disaster Losses Workshop, Hohenkammer, Germany, May 25–26, 2006, <http://members.cox.net/igoklany/>.

<sup>6</sup> Absent weather processes to counteract the greenhouse effect, average Earth air temperature would reach 140°F. See Roy C. Spencer, “Not that simple—Global warming: What we don’t know,” *New York Post*, February 26, 2007, [http://www.nypost.com/seven/02262007/postopinion/opedcolumnists/not\\_that\\_simple\\_opedcolumnists\\_roy\\_w\\_spencer.htm?page=0](http://www.nypost.com/seven/02262007/postopinion/opedcolumnists/not_that_simple_opedcolumnists_roy_w_spencer.htm?page=0).

<sup>7</sup> Polyakov, I.V., R.V. Bekryaev, G.V. Alekseev, U.S. Bhatt, R.L. Colony, M.A. Johnson, A.P. Maskhtas, A.P. and D. Walsh., “Variability and trends of air temperature and pressure in the maritime Arctic,” 1875-2000. *Journal of Climate* 16 (2003): 2067-2077.

<sup>8</sup> For numerous references see *World Climate Report*, “More Evidence of Arctic Warmth (a long time ago),” May 25, 2006, <http://www.worldclimaterreport.com/index.php/2006/05/25/more-evidence-of-arctic-warmth-a-long-time-ago/>.

<sup>9</sup> H. Fischer, M. Wahlen, J. Smith, D. Mastroianni, and B. Deck, “Ice Core Records of Atmospheric CO<sub>2</sub> around the Last Three Glacial Terminations,” *Science* 283 (1999): 1712–14, reviewed by the Center for the Study of Carbon Dioxide and Global Change, <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V2/N8/C3.jsp>

<sup>10</sup> Kunkel, K.E., R.A. Pielke, Jr., and S.A. Shangnon, “Temporal fluctuations in weather and climate extremes that cause economic and human health impacts: a review,” *Bulletin of the American Meteorological Society*, 80 (1999): 1077-1098.

<sup>11</sup> Compare *AIT* p. 106 and Millennium Ecosystem Assessment <http://www.millenniumassessment.org/en/Products.Global.Condition.aspx>.

<sup>12</sup> Streutker, D.R., Satellite-measured growth of the urban heat island of Houston, Texas. *Remote Sensing of Environment* 85 (2003): 282-289, reviewed by the Center for the Study of Carbon Dioxide and Global Change, <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V6/N15/C1.jsp>.

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- <sup>17</sup> Scientists and Engineers for Change, “An Open Letter to the American People,” June 21, 2004, <http://web.archive.org/web/20050305215749/http://www.scientistsandengineersforchange.org/nobelletter.php>.
- <sup>18</sup> Nicholas Lutsey and Daniel Sperling, “Energy Efficiency, Fuel Economy, and Policy Implications,” *Transportation Research Record*, No. 1941 (2005), Transportation Research Board of the National Academies, Washington, D.C. 2005, pp. 8-17.
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- <sup>20</sup> Monnett, C., J.S. Gleason, and L.M. Rotterman. 2005. Potential effects of diminished sea ice on open-water swimming, mortality, and distribution of polar bears during fall in the Alaskan Beaufort Sea. Minerals Management Service, <http://www.mms.gov/alaska/ess/Poster%20Presentations/MarineMammalConference-Dec2005.pdf>
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- <sup>22</sup> PBS, “Dealing with the Deluge,” <http://www.pbs.org/wgbh/nova/flood/deluge.html>; Xia Jun and Yongqin David Chen. 2001. Water problems and opportunities in the hydrological sciences in China. *Hydrological Sciences Journal* 46: 907-922, [http://www.catchment.crc.org.au/associateprojects/aciar/file\\_for\\_download/Attached\\_to\\_update3.pdf](http://www.catchment.crc.org.au/associateprojects/aciar/file_for_download/Attached_to_update3.pdf)
- <sup>23</sup> Dahe, Q., Shiyin, L., and Peiji, L., “Snow cover distribution, variability, and response to climate change in western China,” *Journal of Climate*, 19 (2006), 1820-1833.
- <sup>24</sup> Hillary Mayell, “Shrinking African Lake Offers Lesson on Finite Resources,” *National Geographic News*, April 26, 2001, [http://news.nationalgeographic.com/news/2001/04/0426\\_lakechadshrinks.html](http://news.nationalgeographic.com/news/2001/04/0426_lakechadshrinks.html). Also see Hoerling, M., J. Hurrell, J. Eischeid, and A. Phillips, Detection and attribution of twentieth-century northern and southern African rainfall change. *Journal of Climate* 19 (2006): 3989-4008, reviewed by the Center for the Study of Carbon Dioxide and Global Change, <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V10/N7/C2.jsp>. Hoerling et al. found that “greenhouse gas forcing played little or no role in the observed 1950-1999 African drying [desertification] trends.”
- <sup>25</sup> RealClimate.Org, “Was the record Amazon drought caused by warm seas?” January 13, 2006, <http://www.realclimate.org/index.php/archives/2006/01/is-the-amazonian-drought-caused-by-gw/#more-230>
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- <sup>27</sup> Daniel Grossman, “Spring Forward,” *Scientific American*, January 2004, pp. 85-91.
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- <sup>35</sup> The Center for the Study of Carbon Dioxide and Global Change provides graphs of all six ice core reconstructions, see Medieval Warm Period Records of the Week from Vol. 9, No. 25, 21 June 2006, [http://www.co2science.org/scripts/CO2ScienceB2C/issues/v9/v9n25\\_co2science.jsp](http://www.co2science.org/scripts/CO2ScienceB2C/issues/v9/v9n25_co2science.jsp).
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