



It's All Hunky-Dory, but...

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James Hansen and Makiko Sato

Well-meaning souls*, rightfully concerned about the effect of “gloom-and-doom” talk on young people, say that everything is hunky-dory, climate change impacts are exaggerated (they often are) and climate change is not a serious threat (unfortunately, it is).

Let’s look at reality, real data for the real world. The bell curves refer to summer average temperatures in the Northern Hemisphere, relative to what they were in the base period, 1951-1980. The bell curve shows the frequency of occurrence of local temperature anomalies in units of the standard deviation, which is the magnitude of typical year-to-year fluctuations. The natural, year-to-year, variability leads to a symmetric bell curve about the average during the base period.

The bell curve also defines the likelihood (probability) of a season being perceived as relatively cool, normal or hot. One of us, in the 1980s, colored dice with two sides blue, two white and two red, to represent those chances. The dice are now loaded, really loaded. The past decade has summer temperatures that yield only one side of a die being part blue and part white. Four sides of the die are now red (hot) and one side is deep red for extreme heat, more than three standard deviations warmer than in 1951-1980. Dark red (22%) is creeping onto another side (one side is 1/6, which is about 16.7%).

The shift depends on where you live and the season. We updated graphs in our longer “[Regional Climate Change and National Responsibilities.](#)” The subtropics in summer and the tropics all year are becoming uncomfortably hot, and will become unlivable if we stay on our present fossil fuel emissions course.

Old people should not apologize for revealing such facts. They should apologize for letting political leaders accept bribes to stay the fossil fuel course. Young people deserve more responsible leadership.

There is no reason to panic. It all can be hunky-dory, if we use common sense. Don’t let politicians milk your anxiety about the future to fund their ideology, a sure-fire path to more fruitless ideological warfare.

A focus on personal emissions, or even national emissions, has little effect. The underlying requirement is a steadily rising carbon fee, readily accepted by the public if the funds are distributed uniformly to all.

International technological cooperation will be required. We are all together in the same boat.

Jim opened a Twitter account @DrJamesEHansen, (<https://twitter.com/drjamesehansen>) but is focused on finishing *Sophie’s Planet* – will send out the next chapter in a day or two.

*Including my friend Michael Shellenberger