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*****SNS*****

SPECIAL LETTER: LOOKING FURTHER

Publisher's Note: We have opened our annual SNS New York Dinner, to be held at the Waldorf=Astoria on December 12th, for registration; details are in our [Upcoming SNS Events](#) section. – mra.

On This Letter:

SNS Members know that I have approached the Global Warming issue from two perspectives: first, that the melting of the icecaps is a non-debatable, and historically significant, event; and second, that changes like climate change often can occur in non-linear ways not predicted by simple models. In other words, the system can change in an accelerating fashion due to internal feedback loops no one understood.

It now appears that the icecaps are melting MUCH faster than anyone had predicted. Worse than that, their melting reduces the reflectivity of that part of the planet's surface, increasing absorbed heat, accelerating the melting rate. Other, related climate change processes are also apparently accelerated.

This is exactly the nature of real disaster. Remarkably, the Bush administration remains in active denial (see my comments at the end of this piece). In my opinion, anyone at this stage who actively works to confuse this issue or slow communication of its importance is committing a global-level crime. You could, in a moment of rationality, ask yourself which is worse: someone committing a war crime, or someone whose actions imperil the planet itself?

Since it hasn't been possible until recently, we have no law, or words, for this level of misbehavior.

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Today, even oil companies (with the possible exception of Exxon) accept global warming. But, as I write this, the coal industry is beginning a new \$60MM PR and lobbying campaign to convince you that burning coal is a great interim step. Rubbish.

Several years ago, I said that the time for debate on this subject was over. I'm saying it again. Today, I want to start a new conversation: Is the climate crisis happening MUCH faster than predicted?

As fires rage throughout Southern California, as all of the American South from coast to coast suffers record drought, and as we get news of accelerated melting of the ice caps, I am going to answer: Yes.

You and I don't have to wait for the year (2020, 2050, 2075) to appreciate the crisis of human-caused Global Warming; we have the privilege of being part of it today. This is the news from scientists studying the California wildfires and the drought that allegedly may leave the city of Atlanta without water in 90 days.

You don't have to help on Global Warming for your grandkids. Guess what? Good news! No matter how selfish you may be, or how focused on making a quick buck, there is good news for all: you can do it for yourself!

Again: this crisis is not in the future; it is now.

Worse, our global performance in terms of releasing carbon is degrading, rather than improving.

SNS Members should now assume that this problem is real, it is happening now, and it is happening MUCH faster than anything they may have read. Whatever predictions of later disaster you took minimal comfort from, please erase.

Sure, even the worst case takes time to unfold, but everything I see happening indicates that all of it is unfolding now, and not at some later date.

I would encourage all of our readers to read this transcript from FiRe FiVe carefully, take Stan's comments to heart, read his books as examples of what could happen, and assume that whatever is going to happen, will happen MUCH sooner than you thought when you woke up this morning.

This week, the Advisory Board has been planning FiRe 2008. One of our partners reported that some competitors are starting their own "Green Conferences." We're glad they are finally "getting it." FiRe has been talking about all of this for five years, and SNS, since it began in 1995. For us, everything is connected, and always has been. For this reason, we have decided to include Global Warming as one of our themes at FiRe 2008.

Here is what Kim Stanley Robinson said to FiRe FiVe attendees.

Friday, May 25, 2007

LOOKING FURTHER

KIM STANLEY ROBINSON AUTHOR, “MARS” TRILOGY AND
“SCIENCE IN THE CAPITAL” TRILOGY

Hosted by Glen Hiemstra, Founder and Owner, Futurist.com



Glen Hiemstra, Futurist.com: You are in for a treat. I'm Glen Hiemstra, and I'm so happy that so many of you were able to arrange your schedules to stay around for the morning, because sitting here, in my opinion, is one of the most important writers, most important communicators, alive today. By the time we're through, if you haven't read him, I believe you'll want to go out and do that.

His name is Kim Stanley Robinson. Some of you know him as the writer of the award-winning “Mars” trilogy. If you were reading him a long time ago, you might have read his trilogy on the sort of near-term future of California. And most recently, and where I

want to start with Stan, is a trilogy that he did on... some call it the “global warming” trilogy – that’s how I’ve referred to it – but I saw it referred to recently as the “Science in the Capital” trilogy...

Kim Stanley Robinson: Yes.

Hiemstra: ... with terrific titles. The first one in the series was called *Forty Signs of Rain*. I don’t know if you dream these up or you have somebody who does it for you, but they’re terrific.

Kim Stanley Robinson: It’s a negotiated process.

Hiemstra: So the first one is *Forty Signs of Rain*, the second is *Fifty Degrees Below*, and the third one, which just came out in February, is *Sixty Days and Counting*. Before I ask you a question, just for our edification – particularly yours – I like to ask this question when I’m interviewing our science fiction authors. How many in the room read science fiction?

Okay. How many don’t read science fiction?

And how many don’t know whether you read science fiction? [*Laughter*]

That’s actually a nice surprising number who do. I highly recommend a variety of authors, and Stan is just a terrific one.

So, I want to start with this series that I call the “global warming series.” I think a good question to begin is: What is the Younger Dryas, and why should we care?

Robinson: The Younger Dryas is the name that paleoclimatologists have given to a little drop back into the Ice Age as we were coming out of the last big one.

About 15,000 years ago the Earth began to warm up, and the ice caps began to melt, and the sea level began to rise. And that process was proceeding in a straightforward manner until about 11,000 years ago, when – they used to say “very rapidly,” and they wouldn’t

“They discovered that the Younger Dryas had in fact begun and dropped from a warm, wet climate to a cold, dry climate in three years. This was a paradigm buster.”

qualify that by saying “maybe 500 years” – we dropped back into the coldness of the Ice Age for about 3,000 years and then also came out of *it* fairly rapidly. This was mysterious until just a few years ago, when they finished the Greenland ice coring experiment, where they took an ice core right down to the bedrock in Greenland and got about 100,000 years of climate data that are really very, very good and detailed.

What they discovered was that the Younger Dryas had in fact begun and dropped from a warm, wet climate to a cold, dry climate in three years. This was a paradigm buster. Everybody had assumed that the Earth's climate was so big that it was relatively stable, and that it changed on even astronomical scales, but certainly geological scales... *not* in three years. So they immediately began to rethink and get into this concept that has become very widely known now – and I think maybe everything that I'm saying here is pretty widely known now – about “tipping points”: that you have a regime that can stay fairly stable for quite some time, but it's being pushed in a certain direction until it goes over the tipping point and falls into a new regime.

Their guess as to the cause of the Younger Dryas was that the Gulf Stream had shut down because of an infusion of fresh water into the North Atlantic, which made it impossible for the warm water to sink off of Norway and keep the process going like a conveyer belt. This is now contested, actually. The explanation is a couple of years old, and now they aren't quite so sure about it. But what I decided to do was write a description of what would happen to us in the near future, because we definitely are facing climate change of one kind or another. And now abrupt climate change could happen in very human time scales.

Hiemstra: So, in the series that you wrote – and I don't want to give it too much away – but this is the kind of book that you give to your friends, or the kind of series you give to your friends. I gave it to my kids, who are all in their 20s, three of them, and I said,



“Read this; we don't know if this is what the future's going to look like, but if it does, you'll get some ideas about how to cope.”

Because one of the... I'll just describe it briefly. In *Forty Signs of Rain*, the Capital Mall ends up under eight feet of water, and the National Science Foundation and the people in politics are trying to figure out what to do. In *Fifty Degrees Below*, the next winter, it's 50 degrees below in Washington, D.C.; and in *Sixty Days and Counting*, everybody's trying to figure out how to deal with all this.

What attracted me so much to this is that on the one hand, these really severe events are happening, and on the other hand, people are still stopping at Starbucks while they're heading to the National Science Foundation to try to figure out what to do. So to me it captured a really realistic kind of picture of the future and the kind of coping that we need to do.

The series is called “Science in the Capital” because the key characters – there are National Science Foundation employees and political people. What is your view of how we need to cope, or to tackle these large issues, like climate change?

One of the things that people here say frequently – I’ve heard it both in main sessions and in small group conversations, and you hear it in every business audience that you’re ever with – that if government will just get out of our way, we’ll solve the healthcare problem, or if government will just get out of our way, we’ll take care of climate change, or if the government will just get out of our way, we’ll take care of any problem there is. But in your conception, at least in this series, it falls to scientists and government people to figure out what to do. Talk about your view of that, if you would.

Robinson: Sure. I’d like to make the case that really it’s an integrated system, and that this notion of exteriorizing government as something other than ourselves is a category error, especially in a democracy like ours that actually functions pretty well by the rule of law. And that when we need to organize large-scale social efforts to change things as



fundamental as our infrastructure – because really the climate change problem is a matter of de-carbonizing our infrastructure as rapidly as possible – that that does take government, because that government is us deciding together what the laws are. And the businesses work in a system and network of laws that we all establish together, and this is a system that is very robust and it’s working remarkably well.

This notion that government is a problem to be circumvented is a kind of religious viewpoint that I think is wrong, and creates a sense of dichotomy or opposition that isn’t really real. Because we all work within this system of laws that were all created together. This is American democracy.

At this point, we’ve got an obvious crisis that doesn’t have a market solution because it requires an immense investment without an immediate return, except that we don’t torch the Earth and don’t end up with the various disasters.

The stalling of the Gulf Stream isn’t even the worst of what could happen, nor even the most likely, but it is just one that I chose because it was so dramatic. But the quitting of the monsoon, or the melting of all the glaciers in the Himalayas, the lack of water that – even in California, with the snow pack turning into rainfall – all of these are severe,

imminent problems that need to be solved by coordinated action. So, I think that when we talk about coordinated action, then we're talking about... in a way, we're talking about government. We get together, we organize, we legislate, and then we go ahead and behave on that basis.

Hiemstra: Given what you learned about the climate crisis in writing that series and what you see going on today, what's your sense of whether we're moving in the right direction? Or are you frustrated, or are you worried, or... what's your sense now?

Robinson: Well, all at once, I must say. Certainly it's now a high-profile issue. Everybody's aware of it, and everybody is aware that it's a severe problem that we have to act on. On the other hand, it's difficult to figure out what exactly to do. And it's exactly like Jay [Falker] was talking two talks ago, and the guys talking about the new integrated super-cellphone, the Dick Tracy wristwatch in its most extreme form. The technologies are already there to de-carbonize our power system and our transport systems. So it's not a question of inventing new science-fictional technologies, but rather deploying what we have in an organized way.

Thing that I've seen over the five or six years that I took writing this series, is the scientific community has been speaking up in a way that is unprecedented in history. *Never* have you seen the scientific community – and I mean the millions of individual scientists and all of their organizations and all of their supra-organizations – all standing

“Practically every working scientist in the physical, natural, biological, and environmental sciences is all saying the same thing: that we don't have much time.”

up and waving their hands and yelling as loudly as scientists ever yell, like an alarm in the hotel here, saying “We have a problem too serious for us to even enjoy staying in our labs and continuing to do our research,” which is really what they would *like* to do.

Even during the Cold War, with the nuclear threat, I think the scientific community said, “Well, we've got these designated nuclear scientists who will speak of the danger, and the danger is so evident that we can go ahead and continue with our careers.” And that was how that particular thing unfolded.

Well, now it's not like that. Practically every working scientist in the physical, natural, biological, and environmental sciences is all saying the same thing: that we don't have much time. The amount of carbon dioxide that we're adding to the atmosphere every year – which apparently is maybe growing, maybe shrinking, probably staying about the same, but since it's a percentage thing it keeps getting faster – is going to put us past the 450 parts per million that is about as minimal as we can imagine it happening. But it's *more* likely to go to, like, 560 parts per million, and at that point we're really, really in danger of triggering... of going over one of these tipping points into a regime where we get, say, the West Antarctic Ice Sheet coming off, in which case sea levels might rise

remarkably. And about a quarter of the world's population lives near enough to the coast that they would be affected by this.

You have to imagine refugee populations that are literally thousands of times the number of people that had to leave Katrina. In other words, thousands times 200,000. You have to imagine 20 million people, maybe 200 million, suddenly forced to move. Well, we can't handle that. So this is why I see the scientific community reacting the way they do. And now it becomes a big test. I mean, who makes the decisions in this society? Can we decide, as an entire civilization, to do something, together, rationally? It's not *really* the way we're set up. It's a little bit of a test of the system.

Hiemstra: The system is still plagued by what we can charitably call "skeptics." I was just at a policy event in Washington, D.C., of people talking about future transportation policy in the U.S. About 20% of the group there would either have said – and we were doing electronic polling, and doing various things, so it was pretty clear that this was true – about 20% would say "This is just a liberal myth," or other a little bit more sophisticated arguments. So I just want to try two on you, because they segue us into some of your other interests and work.

One of them is "Well, this must not be happening, because Antarctica is not melting." Talk to us a little bit about what you know about Antarctica based on your experience there, and maybe even tell us a little story about when NSF invited you down there.

Robinson: Sure. One of the reasons that I'm a big fan of the National Science Foundation is they have an Antarctic artists' and writers' program, and you apply to it like any other grant and get accepted. They send you down there and will let you go around and visit whoever you can get invitations from. I did that 12 years ago and saw many researchers already working on global warming issues back then, because it was very much on the radar screen for climatologists.



Just recently they looked at satellite data and saw that a lot of West Antarctica was melting last summer, that there was an unusual heat spell that had melted the surface. It's not so much the surface that's the problem; it's that the West Antarctic Ice Sheet is resting on ground, but that ground is below sea level. So this is the interesting thing: there's a heavy-enough height and weight of ice on the West Antarctic Ice Sheet that if it were to be torn away by tides and float off into the ocean as icebergs, there would be an enormous addition to the amount of ice in the water.

So it wouldn't be like the Arctic Sea ice. If it breaks loose, it's already displacing as much water as it's going to. It would be like adding very much more ice as it slips off of this underwater platform into deeper water. That's why you get the 25-foot-higher sea level if all of the ice on the West Antarctic Ice Sheet were to come off and go into the ocean. That is just a stupendous rise in sea level.

I tried to describe that happening at the end of my "Mars" books as a kind of an extravaganza to explain how my Martians could make themselves independent. It is a simply staggering thing to contemplate, and it's not at all a long-shot kind of a thing. They're seeing that underneath the ice – between the ice and the ground itself – is water, under enormous pressure. But what it is, is it serves as a kind of lubricant. So there's either water or a kind of toothpaste-like clay underneath, and the tides can lift it. The ice can be torn away from the edge, and then the water gets under more. And it's up on a slope, so it tends to shoot down into the raw sea very quickly.

So, this is one of those unfortunate scenarios that forces the action. It's the same as all this carbon dioxide: a fair amount of it is getting uptaken by the ocean, so the ocean is getting more acidic. That also forces the action.

Everybody, when you think about climate change or global warming, you think, "Oh, well, I can handle it. I'll just turn on the air conditioner more, or I'll put on another sweater at night. A couple of more degrees, maybe the farming will work better. What's the problem?" But the problem is, in these other secondary effects that are so severe that we can't abide them, if the ocean gets acidic enough that the bottom of the food chain can't form their little calcium cells, then we lose the bottom of the food chain. And we

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all know how food chains work. We're at the top of that food chain, and we can't afford for the bottom to crash.

So I'm interested, when I come to a conference like this one, to see what the potential is. These new technologies that have been discussed all week: they're quite beautiful. They're utopian, and I'm a utopian science fiction writer

– I recognize it when I see it. What they’re saying is: “We have the potential to do an *enormous* amount of good things,” especially in human health and longevity. The biomedical stuff – the possibilities are just amazing. But it’s going to be a house built on sand unless we de-carbonize really quickly.

Hiemstra: You took us to Mars in that answer. Let’s go to Mars for a little bit, because the “Mars” trilogy is terrific. If you want to go to Mars tomorrow, get the “Mars” trilogy and you’ll be there at a level of depth that you can hardly imagine. This is also a climate question, because it will be the last to talk about climate.

One of the most sophisticated, and now increasingly common, arguments of skeptics is: “Well, sure, it might be getting warmer, but look at Mars – it’s getting warmer too. So there must be something going on in the solar system; it has nothing to do with us.”

Have you come across that, and how would you respond to that particular form of skepticism?

Robinson: Well, that’s just silly. A lot of these skeptical arguments are almost desperate. They’re an imitation of the scientific method without actually being able to withstand the scientific method’s questioning. Mars might be warming, but it’s going from – I don’t know, 70 below zero to 60 below zero, because it’s in a very eccentric orbit. And its orbit is bringing it around so that in a very natural astronomical cycle – taking thousands of years – it’s warming up. So what? It has nothing to do with the *forcing* of climate change that *we’ve* created *here* by the accidental release of carbon dioxide. The two are not linked.

“The CO₂ level is rising, since the Industrial Revolution, 50 times faster than it ever has in its natural shifts. This is a very straightforward thing, so what you have to do is question the *motives* of the skeptics.”

The physics of what we’ve done here is very, very clear. I mean, Earth’s climate has also gone through enormous warmings, and it’s frozen out to become entirely an ice ball. But the CO₂ level is rising, since the Industrial Revolution, 50 times faster than it ever has in its natural shifts. This is a very straightforward thing, so what you have to do is question the *motives* of the skeptics. I mean, it’s fun to be skeptical. It’s fun to think, “Well, there’s 98% of the scientists on Earth who believe this, but I know better because I’m clever.” I mean, there are various motivations – some of them economic, some of them personal – but what they do is fly in the face of a fairly straightforward and basic physics. I say this as an English major; you know, I have to have these things explained to me in some great detail by my scientific sources. And it seems to me that – I mean, I’ve been convinced, and I’m amazed that at this point this is even still a point.

Hiemstra: Yeah. So, enough on that. A couple of things on Mars: When we were, a couple of sessions ago, listening to the enthusiasm for going back to the moon and Mars, I leaned over and said, “Should we go? Will we go? What is your feeling, having sent this colony to Mars in your series? Do you think we should go there? Why should we go there?”

“Mars will always be there. We are in a rush to de-carbonize Earth’s economy. If the Mars project is irrelevant to that, then the Mars project needs to be put off for the generations to come. ”

Robinson: I do think we should go, because I think it would be a beautiful thing to do. It resembles, in a way, our going to Antarctica. We have scientific stations down there; we have a little town in McMurdo. There’s a permanent human habitation in Antarctica. Very

few people do it, yet you know it’s going on down there, and it’s of interest. Well, that’s just a tiny fraction of how interesting it would be to have a similar situation on Mars.

The one thing I want to say, though, is that it is not anything we need to be in a rush about. Mars will always be there. We are in a rush to de-carbonize Earth’s economy. If the Mars project is irrelevant to that, then the Mars project needs to be put off for the generations to come. If the Mars project helps us in learning how to do global planetary management... because now we are permanently stewards of the Earth’s climate and environment, generally. It’s all up to us now. The whole world is just a big park. And we get to choose. We get to say, “*This* is going to be wilderness; *this* is going to be human; *this* is going to be in-between.”

If we study Mars and we learn things about how global climate systems work, or about the relationship between a geology and an atmosphere, this is of tremendous value to us. So I think of the Mars project as being kind of a long-term thing that may be centuries before it really gets going strongly, but that it makes sense to go there as soon as possible just to learn things about helping our situation on Earth right now. It’s one of these... I think it has to be looked at as a utilitarian thing, at this point. Does it help us in our current environmental crisis? I think it does.

For that reason I’m in favor of it, without being like a certain of my colleagues in the Mars Society who are making inflated claims for it, like it would be the salvation of civilization. That’s not true.



The salvation of civilization is right here amongst us, waiting to be done, and we don't have to go to Mars for that. But to the extent that Mars helps and meanwhile is kind of a beautiful research act, and inspirational to young kids and to scientists and to taking in careers in science and in engineering – I mean, it's really interesting to hear Jay [Falker] talk about not ever during his lifetime having people go to the moon. Well, this is peculiar to those of us old enough to remember it, and seemingly a lack of emphasis on the things that are most interesting in the human endeavor.

Hiemstra: Okay, let's play a couple of real fast games here. Just looking out 10 to 25 years, longer-term – still not very long-term, but longer-term than a lot of your stuff is set; not in the distant future, but in the relatively near future: What are trends, developments, that you hear talked about a lot that you don't think are going to play out as expected, or even not play out at all?



Robinson: I've been focusing in so much on the things that we have to do that the rest of it has struck me as hopeful that these problems are not central, when actually they are. Many of the technologies that have been talked about this week are appropriate to a time when we are in a steady-state, survivable, sustainable culture. But right now,

our emergent – or premature, you might say, or anachronisms, in the sense that they belong in the 22nd century in a stable civilization – I think a lot of the great and utopian and really beautiful ideas that are being discussed here are going to have to rest on a solid infrastructure.

I've been really interested in the recent projects on wave power. It's been really hard to make machinery that will continue to function in the ocean because of the saltwater, and the ocean in general is just really hard on things that we make. But now they're working on glassy metals. Now they're working on really simple, basic wave-power conversion technologies off the Orkneys and off of Portugal, where they just line out a whole bunch of, like, railroad boxcars that float. At the joints between these boxcars there are hydraulic systems that simply capture the energy of the waves moving underneath them and always bending them up and down – the simplest thing in the world.

I think what we're going to see is ideas that haven't yet been fully described, or that aren't widely known, coming into place and giving us the clean energy that we need to put all the rest of this cool stuff on the back of.

Hiemstra: Is there anything else that you, when you play in your mind, given the various sources that you have – 25 years out, are there other things that you see that even as smart a group as this would have not a lot of awareness of, or not have thought about a lot, that comes to mind when you think about that?

“There should be appropriate technology. These things should be not only interesting and cool, but they should also function to help make us a sustainable civilization....”

Robinson: Well, it's interesting you ask, because I've ended up being kind of a low-tech guy; it's been true throughout my careers. But I've been interested in the social, and interested in the idea that we are still primates, and that what we're going to enjoy most are the things that stimulate the brains that grew in the million-year run-up to being humans.

So I'm thinking landscape restoration and also sharing this planet with the rest of the animals – the big mammals that are now going extinct. Environmental engineering, landscape restoration, the various names that we have for these technologies. These are emerging technologies that will be fundamentally important to our happiness and our health. Some of them are low-tech, some of them are extremely high-tech, and they certainly rely on a really robust IT.

I've always tried to emphasize a mix: that there should be appropriate technology, that these things should be not only interesting and cool, but they should also function to help make us a sustainable civilization so that we can be handing on to the generations that come after us a planet that not only is not fundamentally damaged, but might be better off than it is now, because we've been accidentally polluting the planet so badly in this last century and a half or so. That was not intentional. There's no one to be blamed for it. There's no reason even for guilt; there's just knowing that we know, at this point, there's a series of actions. What Jay was calling an “umbrella,” I've sometimes called a “mission architecture” that would describe every aspect of technology that we need in order to make it robust and sustainable over the long haul.

Hiemstra: I might tell everybody, by the way, that one of the really delightful features of this series is that when a big flood hits in Washington, D.C., a combination of the gates being forced open and letting them out, the primates and the big animals in the National Zoo escape into Rock Creek Park and live there through most of the rest of the series. It's really quite fun to pay attention to that. That's a neat thing.

There's about three minutes left, so if people want to come and ask questions, feel free to do that.

When the previous panel that was here was describing their visions of future technology, at one point one of them said, "Well, we'll have these advertising signs" – it's right out of every science fiction novel and movie of the last few years, practically – "You walk past the advertising sign, it knows who you are, and it says: 'Hey Glen, do you want this?'" You looked at me and cringed. Why did you cringe?

Robinson: This is a Philip K. Dick vision. The greatest of California's science fiction writers, Philip K. Dick, had this in most of his novels of the 1960s, but they finally devolved to, like, flies that come around and buzz around you in big clouds saying, "Glen, you need to buy this, Glen, you need to buy this." [Laughter]

It seems to me that's all too possible, so it kind of leads me to thinking that we're going to be very, very appreciative of being de-electronicized – that essentially, now it becomes a vacation to take all this stuff away and go off into the woods or onto the mountaintops, the beaches, the deserts of the world, or even out into your own garden. For a while there, I was taking my cellphone out into my vegetable garden, and then I thought: Is this a good idea or a bad idea? And the devolving away from all this beautiful high-tech, which enables all kinds of activities and behaviors, and yet is not the total human story.

It's going to become a real value to be – and I'm not saying this in an anti-technology way, because I love all the technologies – but some of them are really simple and fundamental and basic and enjoyable, on the level of managing to stay warm on a really cold morning because you're wearing clothes. Clothes are a technology, and they allow quite amazing things. What I'm trying to say is that appropriate technology – or being used for true human actualization – is more complicated than just inventing everything that we possibly can and seeing if it will fly or not.



Hiemstra: Does anybody have a question in the audience? One is coming. Oh... Hey, David. [Laughter]

David Brin, Author: Hi, Glen. Hi, colleague; hi, bro. Stan, I just want to comment and ask a question about one thing. I think the most striking thing about

you is not how articulate you are, how influential, how *wise* and perceptive you are – and I’m very angry and jealous, because that ranks me down there even more steps in California science fiction authors – but what strikes me especially is your sense of calm. You are militant, you are eager, you are active, you’re out there fighting the fight, and yet what you just said really struck me just now, and made me get up. And that is: “No one is to blame. There is not even a sense of guilt.”

What I believe we have to worry about on the reaction from liberals and modernists, as they react to what’s been going on in the last few years, is this incredible tendency of human beings to be addicts to self-righteous indignation. And what I think the *most* powerful point you’re making – and I’d like you to comment on this – is that we can’t afford the drug high of indignant blame as much as we need to focus on the pragmatic modernist agenda. Getting it *back*; that we can do things and solve things. I’d like your comment on that.

Robinson: Thank you for that, David. We’ve been friends now for 25 years, David and I, so I appreciate your comments.

I feel a lot of anger, in these last seven years especially, but everybody has a lot of anger. The question is what to do with it. A basic human emotion, very powerful, and a lot of us are just stuffed with it. So I’m thinking that you can’t change the past, and you can’t blame people for doing stuff by accident. Now that we know, now that we have a situation, it’s really what we do now and in the next five to 25 years that matters, rather than assigning of blame for actions in the past that can’t be changed anyway. So I try to focus my anger, which is a considerable force and not good for me, in ways that will make it useful rather than just destructive.

Hiemstra: We probably ought to stop, but go ahead and take one more, and we’ll jump off the stage and be brief.

Tom Malloy, Adobe Systems: Real quickly: Stan, one of the, I think, under-discussed – or maybe it’s a third rail of this discussion about our impact on the planet – is the “P” factor, the number of us... the population. I was just curious: As you imagine the future in your work, do you imagine more people, or fewer people, or how many people do you imagine on this world?

Robinson: This brings up a huge topic, but thank you, Tom, because it needs to be discussed. There *might* be too many humans on the planet: 6-1/2 billion. We might have overshot our carrying capacity, and it would be a kind of an “oil bubble.” But they can’t tell, because carrying capacity is not easy to calculate for human beings because it depends on our resource use. No matter what, though, we need to cap the number of humans and maybe try to level off, and maybe in centuries to come they will move it back on down.

This brings up a really powerful technology, which is essentially social justice. About 20 years ago, the demographers were saying that the world was doomed to hit 12 billion

before it leveled off. But what happened in Thailand and in the prosperous part of Mexico and in parts of Indonesia is that as soon as women were educated, given full rights – legal rights, property rights, and control over their own lives – the reproduction rate went from, like, seven kids per mom down to about two kids per mom in one generation.

“Demographers were saying that the world was doomed to hit 12 billion before it leveled off. But in Thailand and in the prosperous part of Mexico and in parts of Indonesia... as soon as women were educated, given full rights... the reproduction rate [dropped].”

So, now our predictions for the world’s population

are actually lower than they were about 20 years ago in terms of how we will max off, because now the demographers are realizing that this is really a rollercoaster of a situation. Two good things are suddenly correlated: social justice is already a good in its own right; women’s rights are a good in its own right. It also helps the population issue, which is an environmental issue. So with these things bundled together, you can then begin to focus in on social justice as a climate-control strategy, which is... It would take me longer to describe all the jumps, but I think you see where I’m going.

Hiemstra: Thank you. I wish we did have time, but we don’t. Thank you very much. Thank you, Stan.

[Applause]

[See Mark’s postscript below bios]

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About Kim Stanley Robinson

Kim Stanley Robinson is the author of the award-winning “Mars” trilogy of novels: *Red Mars* (1993), *Green Mars* (1994), and *Blue Mars* (1997); the “Three Californias” trilogy, presenting three views of possible near-future worlds: *The Wild Shore* (1984), *The Gold Coast* (1988), and *Pacific Edge* (1990); the novels *Antarctica* (for which he was sent to the Antarctic by the U.S. National Science Foundation), *The Years of Rice and Salt*, *Icehenge*, *The Memory of Whiteness*, and *A Short, Sharp Shock*; and most recently, the “Science in the Capital” series, exploring the consequences of global warming: *Forty Signs of Rain* (2004), *Fifty Degrees Below* (2005), and *Sixty Days and Counting* (2007). The novel *The Galileans* is scheduled for publication in 2008.

Most of Stan’s dozens of short stories are included in the collections *The Martians* (billed as a companion piece to the “Mars” trilogy), *The Planet on the Table*, *Remaking History*, and *Vinland the Dream*. His work frequently incorporates ecological and

sociological themes, and Mars has been a source of lifelong fascination and years of research.

Among Stan's numerous awards are two Hugo Awards for Best Novel (*Green Mars* and *Blue Mars*), the Nebula Award for Best Novel (*Red Mars*), the John W. Campbell Memorial Award for Best Science Fiction Novel (*Pacific Edge*), and six Locus Awards.

Stan holds a BA in Literature and a Ph.D. in English from the University of California, San Diego, and an MA in English from Boston University. He is a graduate of the Clarion Science Fiction Writers' workshop. Stan and his wife, an environmental chemist, have two sons and live in Davis, California.

About Glen Hiemstra

Glen Hiemstra is the founder and owner of Futurist.com, a company that focuses on the dissemination of information about the future and how to create it. An internationally respected futurist, he has advised professional, business, and governmental organizations for two decades. In August 2006, John Wiley & Sons published Glen's book [Turning the Future into Revenue](#). Previously, he co-authored *Strategic Leadership: Achieving Your Preferred Future*.

Glen is a popular speaker who focuses on emerging trends in fields as diverse as science, technology, economics, demographics, energy, the environment, education, and transportation. An expert in preferred future planning, Glen goes beyond simple trend analysis to discuss the opportunity that we have to shape the future.

Over the years, Glen has worked with many leading companies, including Microsoft, Boeing, Hewlett-Packard, Ernst & Young, PaineWebber, ShareBuilder, John Deere, and Novartis. Futurist.com enjoys a strategic partnership with the Club of Amsterdam, and Glen appears regularly for Ambrosetti: The European House, a leading international consultancy.

Glen has also served as a technical advisor for futuristic television programs. He has worked with Steven Bochco Productions and others. He has been quoted in the *Wall Street Journal*, *Forbes*, *US News & World Report*, *The Futurist*, *BusinessWeek*, *USA Today*, the *Los Angeles Times*, and many other publications.

In a first career, Glen was an award-winning professor and serves as a Visiting Scholar at the Human Interface Technology Lab at the University of Washington, which works on virtual and augmented reality technology.

Glen was educated at Whitworth College, the University of Oregon, and the University of Washington. He lives in Kirkland, Washington, with his wife, Tracie. They have three adult children.

Postscript:

Where does this leave us today?

Those of you reading the news this morning may have encountered the latest effort by the Bush administration to prevent its own scientists from testifying fully, this week, on Global Warming. As a quick example, here is an excerpt from Time.com:

“I am deeply concerned that important scientific and health information was removed from the... testimony at the last minute,” Sen. Barbara Boxer, chairman of the Environment and Public Works Committee, wrote President Bush.

Rep. Bart Gordon, D-Tenn., chairman of the House Science and Technology Committee, demanded an explanation from the White House’s chief science adviser, John Marburger, about the handing of the testimony earlier this week by Dr. Julie Gerberding, director of the Centers for Disease Control and Prevention. She appeared Tuesday before Boxer’s committee, which is crafting global warming legislation.

“We expect our government researchers and scientists to provide both Congress and the public the full results of their taxpayer-supported work without the filter that those of opposing views might like to impose,” Gordon wrote Marburger. The White House denied that the testimony by Gerberding was “watered down” and noted that she has said she does not believe she was censored.

When a draft of Gerberding’s testimony went to the White House for review, two sections – “Climate Change is a Public Health Concern” and “Climate Change Vulnerability” – and a number of other phrases were removed, cutting the 12-page document in half.

A copy of the draft given to the White House was obtained by The Associated Press.

Earlier, a CDC official, who spoke on condition of anonymity because of the sensitivity of the review process, told the AP that the original draft “was eviscerated” by “heavy-handed” changes in Washington.

Individual states and cities in the U.S. long ago realized they had to take matters into their own hands; this is even truer today. Saying Bush is committing global crimes doesn’t get the job done. Is there an issue more important to economic well-being than survival? Is there any reader out there who doesn’t think that everything from energy to insurance to food to machine tools won’t be more expensive as this unfolds?

Those of us believing in the SNS version of “hyperstructural economics” believe that technology drives the U.S., and global, economies. But even so, climate crisis can easily



derail a tech-driven expansion, even as the application of appropriate technology can help mitigate climate crisis.

The time for debate, lobbying, and obfuscation is over. It's time for leaders of all stripes to get active on this issue, and for citizens to express a deep fear and anger if their leaders do not respond.

The crisis is happening now.

Your comments are always welcome.

Sincerely,

Mark R. Anderson

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UPCOMING SNS EVENTS

- **Third annual SNS New York Dinner**, December 12th, at the Waldorf=Astoria. To be the first to hear Mark's Top Ten Predictions for 2008, go to: <http://www.tapsns.com/newyork/2007/>
- **Sixth annual Future in Review (FiRe) Conference**, May 20th-23rd, 2008, at the historic beachfront Hotel del Coronado, San Diego. Named "best technology conference in the world" by *The Economist*, FiRe is a unique, world-class source of critical information on major trends in global technologies and markets, discussed by those who make and profit from them. To learn more and to register, go to www.futureinreview.com.

For inquiries about SNS Events and/or Sponsorship opportunities, please contact Sharon Anderson-Morris ("SAM"), SNS Programs Director, at sam@tapsns.com or 435-649-3645.

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and 3i. It is regularly quoted in top industry publications such as BusinessWeek, WIRED, Barron's, Fortune, PC Magazine, ZDNet, Business 2.0, the Financial Times, the New York Times, the Wall Street Journal, and elsewhere.

➤ **About the Publisher**

Mark Anderson is CEO of the Strategic News Service™. He is the founder of two software companies and of the Washington Software Alliance Investors' Forum, Washington's premier software investment conference; and has participated in the launch of many software startups. He regularly appears on the CNN World News, CNBC and CNBC Europe, Reuters TV, the BBC, Wall Street Review/KSDO, and National Public Radio programs. He is a member of the Merrill Lynch Technology Advisory Board, and is an advisor and/or investor in Ignition Partners, Mohr Davidow Ventures, Voyager Capital, and others.

Mark serves as chair of the Future in Review Conferences, SNS Project Inkwell, The Foresight Foundation, and Orca Relief Citizens' Alliance.

Disclosure: Mark Anderson is a portfolio manager of a hedge fund. His fund often buys and sells securities that are the subject of his columns, both before and after the columns are published, and the position that his fund takes may change at any time. Under no circumstances does the information in this newsletter represent a recommendation to buy or sell stocks.

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Orca Relief Citizens' Alliance (www.orcarelief.org), a 501(c)(3) non-profit effort to study and reduce Orca mortality rates, supported largely by technology workers. Contributions may be sent to: ORCA, Box 1969, Friday Harbor, Washington 98250.

➤ Where's Mark?

In November, Mark will be addressing the Western Governors' Association in Tucson, on the subject of SNS Project Inkwel. At the end of November, he will meet with Washington Governor Christine Gregoire on the same subject. On December 12th, he will host the fourth annual SNS New York Predictions Dinner at the Waldorf=Astoria. See <http://www.tapsns.com/newyork/2007/> for details and to register.

In between times, he will be enjoying the full moon, whose rays light the front orchard as though by day as he goes to sleep, and still are doing the same when he wakes an hour later, and then, still at midnight, and at one, and at two, and --

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