

"Ponnapalli's crazy (impulsive, but fun and thought provoking) ideas cover some timely and popular topics; U.S debt and deficit, overweight, stock market, space exploration, alternative energies, cat litter and more. The book is easy to read."

—RECOMMENDED & REVIEWED IN THE MINDQUEST REVIEW OF BOOKS, BY LIGHTWORD PUBLISHING,
August 2011



PARDU S. PONNAPALLI
**Just A Bunch Of
Crazy Ideas**



a collection of eccentric theories
that just might work.

Just a Bunch of Crazy Ideas is fun and informative. The author presents a broad spectrum of topics that will challenge readers and possibly **spark a streak of innovation among them.**

★★★★★ -Melissa Brown Levine,
Independent Professional Book Reviewers

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Praise and Criticism for “Just a Bunch of Crazy Ideas”

“Many of Ponnappalli’s essays are intellectually challenging, short, well written, and entertaining. ...

Just a Bunch of Crazy Ideas closes with several short chapters on expanding space exploration, profiting in the stock market, reducing production-inhibiting interruptions of IT workers, hiker safety, and making a dishwasher for people with bad backs. They are all satisfying to read, and Ponnappalli’s enthusiasm for each topic is refreshing and can’t help but pique one’s interest in looking at the stuff of life with a more creative eye.”

– Patty Sutherland, Foreword Reviews

“Author Pardu S. Ponnappalli offers a collection of ideas on a variety of subjects in his new book, Just a Bunch of Crazy Ideas. Seventeen distinct ideas are explored that turn out to be not so crazy. The book examines alternative ways to play chess and hockey and makes suggestions about changing things we use every day, like dishwashers. This book is infused with humor and encouragement to readers to discuss the author’s suggestions and come up with their own creative solutions.....

Just a Bunch of Crazy Ideas is fun and informative. The author presents a broad spectrum of topics that will challenge readers and possibly spark a streak of innovation among them.”

-Melissa Brown Levine, Independent Professional Book Reviewers

“Crazy ideas??? If you were living in the 1940s most people would have considered the idea of men walking on the moon as a crazy idea. At that time, the thinking was crazy, thinking outside the box. So, what’s to say that thinking crazy isn’t the way to solve our present day solutions?...

The essays were well-written and mostly thought through. Based on his personal experience, they were enlightening and at times, laughable. More importantly, they make the reader take the time to think about our future, ponder on the problems, and look for the solutions we need” .

-Teri Davis, BestSellersWorld.com

“Some of my fondest memories of university were those informal gab sessions in the common room. You’d walk into the room and two or three guys would be adamantly discussing how to solve world hunger or which Star Trek captain would win in a fistfight. Before long, others had joined the conversation. Everyone was welcome. Just a Bunch of Crazy Ideas reminds me of those times. We were all so filled with ideas, most of which had very little to do with what we were studying. Afterwards, paying our bills and living our lives took precedent and no one ever made good on any of those crazy ideas.

As with all those gab sessions in the university common room, Just a Bunch of Crazy Ideas presents some good ideas and some not so good ideas. Take them as you will. Laugh at them or be inspired by them. Please, please find a better way to deal with cat litter odor but don’t you dare change my hockey game”.

–Tami Brady, TCM Reviews

As we all know, when brainstorming stops, evolution stops. Some ideas throughout history that people have tossed out there were considered absolutely silly and crazy. One was radium; another was putting a man on the moon. Crazy, right? From finding a way for people to breathe under water, to the illustrious Clapper that

everyone seemed to go ga-ga over, crazy ideas are what made this country great. And this author has come up with some real doozies, yet doozies that could most definitely work!

In fact, every reader will find this book extremely interesting and will, perhaps, spark other imaginations out there to sit down and create!

- Amy Lignor, Feathered Quill Reviews

“That is one of the greatest joys in brainstorming—the ability to provoke extremely intelligent people to come up with revolutionary thoughts and ideas.”

Ponnappalli’s book is a collection of creative ideas that range from the stock market and the national debt to thoughts about cat litter. Ponnappalli wants the reader to have intellectual fun and suspend their disbelief. His goal is to revive a sense of wonder and speculation, and perhaps stimulate the intellectual discourse.

Ponnappalli understands that the implementation of innovative ideas depends on their commercial viability but also notes that when an idea captures the imagination and interest of the general public, people will spend money on it. The act of brainstorming can result in new ideas and surprising results. The author ends each chapter with the words, “Discuss and enjoy!” That is exactly what the reader of this “bunch of crazy ideas” will do.”

– Libby Grandy, US Review of Books

“As advertised, the author weighs in on everything from space travel to litter boxes in this collection of intriguing but often half-baked proposals.

...The author presents his ideas in a lucid, engaging style, but doesn’t always think them through;... Ponnappalli’s thinking shows both the strength of inspired dilettantism and the need for expert analysis to rein it in. Still, there are some nifty ideas here, and even the questionable ones will provoke reflection.

A stimulating grab bag of outside-the-box—sometimes out-of-left-field—brainstorms”.

- Perry Crowe, Kirkus Indie Reviews

“Ponnappalli’s crazy (impulsive, but fun and thought provoking) ideas cover some timely and popular topics; U.S debt and defecit, overweight, stock market, space exploration, alternative energies, cat litter and more. The book is easy to read.”

- Recommended & Reviewed in The Mindquest Review of Books, by Lightword Publishing

There are 17 chapters in this little book, each on a particular topic: 1) Space Elevator; 2) Alternative Energies and Energy Conservation; 3) More Thoughts on Energy Conservation; 4) Gas Stations and Filing Up; 5) Luggage and Airplanes; 6) Thoughts on Chess; 7) Thoughts on Ice Hockey; 8) Thoughts on Cats and Cat Litter; 9) Our National Debt and Deficit; 10) I Am Overweight and So are Most Americans; 11) Star Trek and the Reboot; 12) Thoughts about Laptops; 13) Thoughts about Space Exploration; 14) Thoughts on the Stock Market; 15) Automatic Inform Systems for IT Workers; 16) Hikers Who Hurt Themselves; 17) How to Improve Dishwashers.

Just a Bunch of Crazy Ideas is a fairly quick read as it’s only 78 pages—a good read before bed. I don’t think you’ll find any earth-shattering ideas or patents pending, but it was interesting. My favorite chapter was Ponnappalli’s self-designed diet program...soups, black coffee or black tea. He includes, in chart form, the progress of his diet.

On day one he weighed 208.5 pounds. At the end of his chart, he weighed 204 pounds on day 23. He had tried many diets, as we all have, and decided to create his own. Why not? The only thing that matters is...does it work? I have my own plan: eat your main meal in the middle of the day (whatever your heart desires) and then have a bowl of cereal or cup of yogurt with fruit in the early evening.

As far as Ponnappalli's writing style—informal to a fault—or quality of writing, it's evident he's not a professional writer, but he does get the job done and his enthusiastic personality shines through. If you have a taste for such an eclectic read, then I'm sure you'll find some value in this little book.

-Kaye Trout - August 8, 2011

*“There has never been a more accurately or honestly titled book than that of *Just a Bunch of Crazy Ideas*. From kitty litter and calories to space exploration and the stock market, Ponnappalli ponders whatever crosses his mind in search of a solution, and those solutions run the gamut from surprisingly simple to mindbogglingly unfeasible. I must admit, there is a proactiveness and ingenuity to Ponnappalli that is really engaging. I appreciate anyone who sees a problem and, instead of simply accepting it or bemoaning the unfairness of it all, tackles it head-on with gusto. His enthusiasm for each topic is obvious, and his willingness to appear silly or to be criticized is well-tempered by his overwhelming positivity. If you can imagine a melange of straightforward outside-the-box thinking, you've got an idea of Mr. Ponnappalli's style.*

He pulls from his personal experiences — including an ongoing struggle with weight management and a harrowing accident while hiking — as well as his physics and IT background in order to examine problems both trivial and crucial.

*Yes, some of these ideas are pretty crazy. We certainly differ in our opinions on where the new *Star Trek* film should head, for example. And I don't know about the feasibility of his building-cum-stepping-stones approach to the space elevator — for instance, where could we build it that could offer both the necessary land and the population to make it a viable workspace? — but I did experiment with both of his proposed revisions to chess with great results. The book is a bit of a mixed bag.*

*As a handbook of solutions to major and minor problems, it falters a bit, but as a conversation sparker, *Just a Bunch of Crazy Ideas* is a success.”*

-San Francisco Book Review – September 15, 2011

*“Sometimes you throw things at the wall and see what sticks. “*Just a Bunch of Crazy Ideas*” is a collection titular crazy ideas from Pardu S. Ponnappalli as he offers his random thoughts about the world as he sits on his Ph.D in Physics that's currently getting him nowhere. With a decent dose of logic and humor, “*Just a Bunch of Crazy Ideas*” is a thoughtful collection of life and everything else, highly recommended.”*

-Willis M. Buhle, MidWest Book Review

Amazon Reader Ratings

- 5.0 out of 5 stars **Thought Provoking**, March 30, 2012 By [STANXP](#)
- 5.0 out of 5 stars **Good conversation starter**, March 18, 2012 By [Rick Manser](#)
- 5.0 out of 5 stars **Creative!**, By [LSimmons](#)
- 4.0 out of 5 stars **Interesting and Enjoyable**, March 12, 2012 By [realgm](#) (Maryland)
- 5.0 out of 5 stars **Just a Bunch of Crazy Ideas**, March 10, 2012 By [James A Oro](#) (Columbia, MD United States)
- 5.0 out of 5 stars **Have you ever wanted to ask someone....**, March 7, 2012 By [Nigel G Reed](#) (Plano, Texas USA)
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- 5.0 out of 5 stars **A clever little book!**, August 30, 2011 By [Reading Mom](#) (Reston, VA USA)
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- 5.0 out of 5 stars **Cat Litter to a Space Elevator**, April 5, 2011 By [John Donovan](#)

Just a Bunch of Crazy Ideas, 3rd Edition

By
Pardu S. Ponnappalli, Ph.D.

Dedicated to

My son Krishna, who changed my world and
who I cherish dearly and

My wife Mona who is making me look forward to retirement
so I can spend more time with her

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Preface to the 3rd Edition

“A book is the only place in which you can examine a fragile thought without breaking it, or explore an explosive idea without fear it will go off in your face. It is one of the few havens remaining where a man’s mind can get both provocation and privacy.” Edward P. Morgan

I have received many comments (positive and negative) about my ideas and their presentation. There was some criticism of my writing ability by some critics. Others merely found the ideas boring and mundane. A vast majority of the critics were positive and the reader comments were overwhelmingly positive (an average of 4.8 stars out of 5 on Amazon).

I added a chapter on the melt throughs of the Japanese nuclear reactors about a year ago. I also supplemented each chapter with references. Wherever additional recent developments were interesting, I wrote some relevant postscripts to each chapter. An added touch is the inclusion of some of my favorite quotes at the beginning of each chapter.

I want to thank all the readers and critics whose insightful comments have made me think hard about how to improve the book and add ideas.

April 3, 2012

Preface to the 1st Edition

The purpose of this book is to share a bunch of “crazy” ideas. There is no claim that any careful research is done. It is more like a brainstorming session where any idea that comes to mind is presented. That is why you get a wide range of topics, from dealing with cat litter to exploring space.

You may wonder what the value of this is. Maybe the ideas are all not worth much in practical terms. Or perhaps there are some gems and some real bad ones. What’s the sense in me writing about these ideas?

Actually, I was wondering the same thing for many years. I have thought about writing this book for a lot of years, and never went through with it until recently.

I think we all start out when we are young thinking we are going to change the world. Especially in university, when I was studying physics, I had constant discussions with my colleagues about revolutionary ideas. As you get older, you settle down to a regular life that for the most part involves paying bills with the money you earn. Most of our energies start getting devoted to survival. Before you know it, you are wondering about managing retirement and you are left with a sense that somehow life passed you by.

The reason for this transformation from a wild eyed youngster with grand ideas to a well settled mortgage paying robot is fairly plain- most of us are just struggling to get by in life. Few of us have the luxury of picking and choosing what we do for a living. My own entry into the IT field was due to the inability of finding any physics related employment after doing a Ph.D. The job market was poor, and I looked around for a marketable job. I have done fairly well in my chosen profession, but I am constantly haunted by the thought that I was meant for something else. I suspect I have a lot of company in this regard.

It seems to me our sense of intellectual courage also wanes with age and seniority. We may have ideas that we think are worthwhile, but we dismiss them for the usual reasons:

1. People will think they are stupid (a perennial favorite).
2. I bet someone has thought of it already (yes, but they might not have voiced it).
3. I want to stick to the safe stuff that’s in the realm of my expertise.

It all becomes a tedious cycle. We end up doing something by rote, or maybe finding just a few ideas in our chosen profession that are interesting, and being content to live out our lives without a sense of wonder or exploration.

So this book is my attempt to revive a sense of wonder and speculation. As I said before, I expect to be ridiculed by people who don’t want to explore and stretch their minds. On the other hand, if you feel like just having a little intellectual fun, suspend your disbelief you might enjoy it. The ideas are fanciful and out there to savor and enjoy.

One of the best things about tossing out an idea is the fervent hope that someone really smart (much smarter than me) is reading them, if only for casual fun. And maybe that will provoke a much more detailed and well-formed idea on their part, no matter how silly my idea is. That is one of the greatest joys in brainstorming- the ability to provoke extremely intelligent people to come up with revolutionary

thoughts and ideas. The beauty of this process is that your ideas don't necessarily have to have any detailed merit- just the germ of an idea that encourages others to come up with better ones.

I have kept this book short so that it's easy to get the gist of the ideas fairly quickly. A vast majority of people have good imaginations and can extrapolate from core ideas very quickly. I wanted to put together something that could easily be read in an airplane or on a train commuting somewhere. I have however, included economic arguments as part of the discussion of the ideas. Almost everything nowadays depends on financial decisions. You can have the greatest idea in the world, but if there's no clear path for commercial viability, it will probably die. On the other hand, even the most half-baked idea can survive as long as it can stoke the interest of the general public and people want to spend money on it...

I hope what happens is that people read this book and it provides a lot of fodder for young minds. I hope they sit around a bar have a few beers and have raucous discussions about the ideas I presented. Perhaps they will all be ridiculed. Or perhaps it will spark some follow up ideas that are really great.

Read, enjoy and discuss. I hope you have as much fun reading this as I had writing it.

Chapter 1

Space Elevator

“The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.” George Bernard Shaw, Man and Superman (1903) “Maxims for Revolutionists”

Arthur C. Clarke passed away recently (about 5 years ago). He was a great author and a very imaginative man. One of the structures he always spoke about was a space elevator. A number of people are working on this venture as we speak. There are a number of technical barriers, involving strengths of cables and other issues. I will not review all the efforts to date, but it seems to me we could build a space elevator with existing technology with a slightly different strategy.

A space elevator effort like this, spearheaded by the United States, would capture the imagination of the world much as the effort to put a person on the moon in the 1960's. It is hard to describe the world wide sense of wonder inspired by the space race of the 1960's. I remember watching it on a small black and white TV- I saw one of the later ones, not Apollo 11, as I did not arrive in Canada until 1970. I think a space elevator would have a similar effect on the world and reestablish the United States as a preeminent leader in technology. It would also give a national focus to the effort –again very similar to the situation of the space race in the 1960's.

How do I suggest going about this? Am I delusional in thinking this is possible with existing technology? I hope not. Let us start with the tallest building in the world – the Burj Khalifa in Dubai. It stands a regal 2717 feet tall, a tad more than ½ mile. So we have the technology on an existing scale already that can pull us up ½ mile. So you start with two adjacent blocks. The first block will be identical to the Burj Khalifa- it will have habitable floors and an elevator that takes you all the way to the top. The second block will be mostly a block of cement. You can have solar panels surrounding it and appropriate wiring and collection to help power the first block. There is nothing habitable in this block- the main purpose of this block will become apparent. If you think of this plan in terms of Lego blocks, block 2 will be a solid Lego block to build upon; block 1 is the Burj Khalifa building. This is shown in the diagram below:

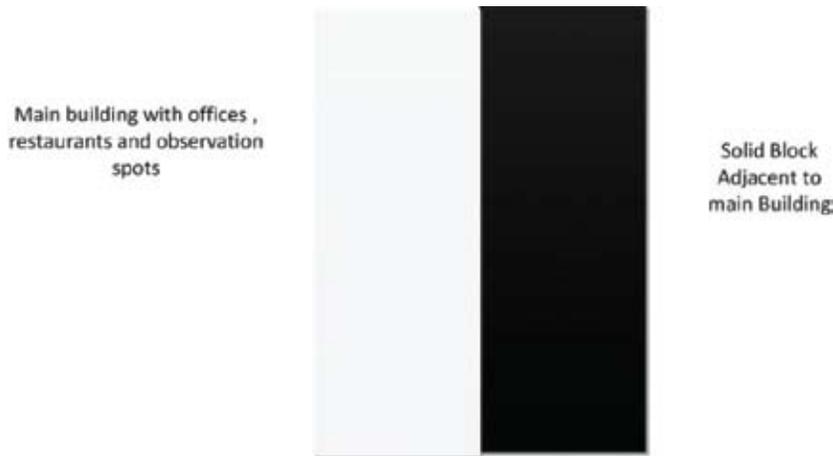


Diagram 1 – First Phase of Space Elevator Construction.

The block on the right represents the solid block adjacent to the main building. So here is the trick. We now have an elevator that takes us up $\frac{1}{2}$ mile. Also note from a business sense that there's an opportunity to generate revenue from this investment already by renting out office space, restaurants and perhaps even living quarters. This is important because this means a phased plan like the one I am proposing funds itself along the way and does not have to be just a pipe dream. Now we can move to phase two. You use the existing infrastructure and build another Burj Khalifa, *on top of the 2nd block*. True, it will be a very tedious process as you carry all the material you need up via freight elevator that's separated from the usable elevators. But I don't think there's anything that forbids you from accomplishing the task from a technical point of view. It's just going to be difficult and time consuming, but definitely possible. I'm assuming here that there's a feasible way of building a solid support structure along an existing habitable building. This seems fairly intuitively clear that it should be possible. The building on top of block 2, which we will call block 3 will have normal elevator structure. This situation is shown in Diagram 2.

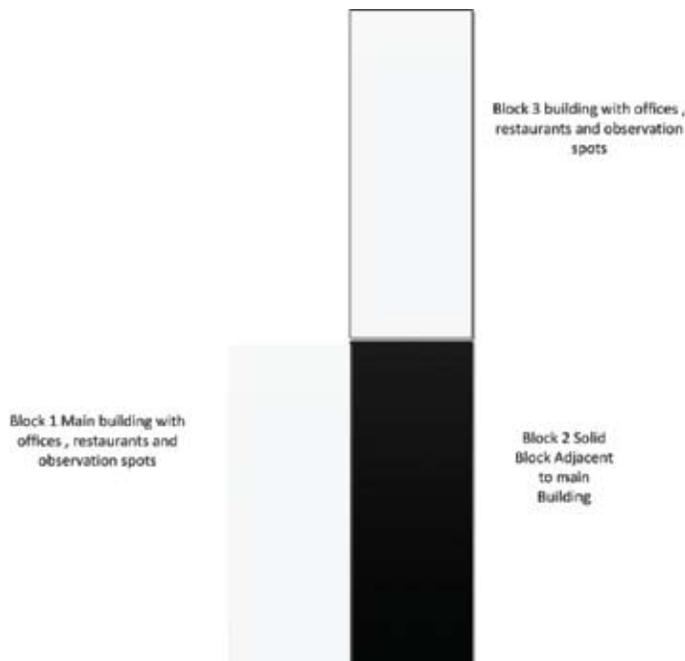


Diagram 2 – Phase 2 of Space Elevator

Our space elevator works as follows now: You go up to the top of block 1, then you switch to horizontal tracks (once you reach the maximum height), and glide over to block 3's elevator. Then the elevator just goes up block 3 like a normal elevator. I admit there's some fancy engineering required to make this happen, but it seems to me it's mostly track switching technology, not dissimilar to the way trains switch tracks (although trains don't do it perpendicularly). If the perpendicular track switch is the problem, you could probably do a different angle or mechanism.

I'm sure you see the pattern by now. You now use block 2 and block 3 to construct a solid block 4. You have to make sure that block 2 and 3 are constructed in a manner so that you can gradually lay out a solid block 4. Also, by now, with intervening years of technical advances you can build on a solid block 4 a block 5 that will be 1 mile in height. For each iteration, you double the height of the building. You can pause the project any time along the way, and do some revenue generation and guided tours—one can imagine how spectacular the views will be even after 3 or 4 iterations. The doubling makes sense since our technical abilities are increasing exponentially in quite a few fields. You just continue to iterate until you get to the ultimate goal. If technology has improved at a faster pace than expected, you can quadruple the height (or use an even higher multiple).

The beauty of this approach is that you don't have to worry about creating and sustaining cables with huge tensile strengths. It relies on known technology, some scaling, and repetition of building blocks.

The country that does this first will have a monstrous advantage in terms of space exploration. The capital outlay could be recouped as we go along this phased plan. The discoveries made in a venture like this would propel the United States back to being the premier technical power.

The plan will require a lot of land, but also offers a super commercial opportunity. As each phase gets done, you will have visitors from all over the world flocking to get the views. You could have hotels and balconies at the top of each phase. Restaurants with an outside view could charge exorbitant amounts for the rich experience. A good place for this might be in the mid-West where there is plenty of land. As the project gains momentum, all top researchers, engineers and others will want to gravitate to the United States to participate. It's a technical dream come true. The plan would be to have multiple sets of elevators, some suited for straight cargo runs into space with no people, and others for people to go up at their own pace and take in the views.

Solar panels adorning the solid blocks built along the way could be fed back to the main grid of the United States. As the elevator/hotel construction becomes larger this will provide more and more of our energy needs, as well as supporting energy for the structure itself. We could at least expect the structure to be carbon neutral. Anything more might be too optimistic, but who knows? The way solar panel technology is advancing, there might be more gain here than can be imagined. Towering above cloud cover, the solar energy supply would be more plentiful.

Discuss and enjoy !

Notes to the 3rd Edition for Chapter 1

Many readers felt that this idea was the most impractical one in the book. There are actually many engineers who have done serious research into the field. I suggest the readers start with the following link: http://science.nasa.gov/science-news/science-at-nasa/2000/ast07sep_1/. You are perfectly entitled to view my approach as deficient or impractical, but the overall structure will be built within 50 or a 100 years, in my opinion.

Chapter 2

Alternative Energies and Energy Conservation

“The most important environmental issue is one that is rarely mentioned, and that is the lack of a conservation ethic in our culture.” Gaylord Nelson

Recently, I started to read more about all the alternative energy means that are currently being investigated. There is an astonishing array of these, and is a good indication of how many clever and resourceful people there are on the planet. Wind farms, algae energy, biomass energy, solar are but a few examples.

Most of these face economic constraints. The capital and the infrastructure required represent formidable obstacles, although the price point for the alternative energies seems to be coming down quite a bit. I’m following all these technologies enthusiastically. There is even one company that is making exercise equipment so that the energy from it can be fed back to the grid. Who would have thought?

I’m certain that in the long run quite a few of these ideas will succeed in powering our nation. In the meantime, however, I am wondering if there is anything that we can do in the short term that does not require any massive investments or changes. Ideally, we would just provide incentive for people to use energy more efficiently, and that would probably save us a huge amount in energy use. This is the conservation side of the equation. It’s the difficult side, because in most advanced industrial nations, including the United States, we consume enormous amounts of energy per capita. And it becomes a habit, so it’s a hard habit to break.

This leads me to believe that we need to tackle the conservation side of the energy equation in a completely different way than the alternative energy side. Basically, the alternative energy side does not address the profligate energy habits of citizens of the industrialized and emerging nations. It just tries to accommodate the ever burgeoning demand side with increased supplies. Most calculations I have seen indicate that this is a losing battle. At some point we have to address consumption issues and try to minimize the consumption.

How do we do this? You cannot force people to do it in a democratic society. Even if you could, it would probably be counterproductive. Most policies that are just forced on people end up being either ignored disrespected or accepted grudgingly. It’s not a good way to try and change things.

My idea is to use our tax system as an incentive for people to reset their thermostats. It’s fairly easy to monitor the average temperature of a house using existing technology. In my first idea, the utility company would have knowledge of the average temperature use in your dwelling on a daily basis.

Then you would get a tax credit based of \$100 per degree (Fahrenheit) that you are above 70 degrees (in the summer months) and below 70 degrees in the winter months.

Suppose, for example, you can tolerate setting your AC to 85 degrees in the summer. My wife and I have experimented with this and found we can set it around this range. That would qualify us for a tax deduction of \$1500 per month for the summer months. The government would not rely on our word for what we set it as, as there would be a record at the utility company attesting to our average temperature maintenance. Similarly, in the winter, say we could tolerate setting the thermostat at 60 degrees. That would give us a credit of \$1000 per month for the winter months.

I bet this sort of scheme would do a lot more to encourage people to turn to conservation than all the educational efforts of the environmental movement. I applaud their efforts and strongly believe they should continue, but most people respond to economic incentives more readily. If the tax credits turn out to be too large, you can adjust the \$100 per degree number accordingly. Try say \$50 per degree.

Everyone would do it to the extent that they are motivated to save in this plan. Someone who likes the temperature at 70 degrees all the time would just leave it that way. Others who need the break would experiment and figure out their tolerance. Some, like me and my wife, believe that conservation is good in principle and would gain a reward for their existing behavior. People who need the temperature set high, like the very old and very young among us, would not change their behavior. Young people who are more adaptable would avail themselves of the credit.

This idea is somewhat similar to the smart energy idea being used in some states, but without any coercion or technology trying to force any power savings. The only thing the technology would measure is what you keep your house at – I don't think that's difficult to do these days. There's no technical intervention trying to automatically meter your power usage- technology that has had some backlash.

I don't have a good way of calculating how much energy this would save, but it seems to me intuitively that there's scope for huge gains here. There is also the enormous long term advantage that you would change the behavior of quite a few people, perhaps an entire generation. Quite a few folks would see this as a fairly quick way to pocket a substantial amount of cash and adjust their behavior accordingly. I think this would accomplish more than a lot of the existing incentive programs that are more difficult to take advantage of. This would in the short term reduce our dependency on fossil fuels. I think that is better for the planet, as well as the security of the United States. One good benchmark I can tell you is that my wife and I have reduced our gas bills to a very small amount by exercising discipline in the summer and keeping the temperature high. We use a negligible amount of energy in the summer, despite some hot Maryland summers. We have not yet mastered this art for the winter, but I'm sure a tax incentive would entice us to do so. The average of our natural gas bill is now 37 dollars per month, which a rather good value is considering the number of cold and hot months we have in Maryland. Our natural gas bill actually shows 0 cccf (100 cubic feet of natural gas) usage for summer, which means it's so low it registers as zero to the accuracy of the bill computation.

Discuss and enjoy!

Notes to the 3rd Edition for Chapter 2

An excellent discussion of the savings involved in turning down thermostats is available at this web site: http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12720.

Chapter 3

More thoughts on Energy Conservation

“Here is what I think the truth is: we are all addicts of fossil fuels in a state of denial about to face cold turkey”
Kurt Vonnegut, Cold Turkey

Another idea of mine for saving energy involves our favorite technology in the United States: our automobiles (and other personal vehicles). Many reasons exist and have been elegantly articulated as to why we should drive small cars, environmentally friendly cars, or even scooters and other vehicles. For the most part, this has not persuaded any change of behavior on the part of the American consumer. Again, we are left with the challenge of how to provide incentive for people to save some energy here without suggesting major alternative changes to their lifestyles. Is there a mechanism by which we could live largely as we do now but show an immediate improvement in our gasoline consumption?

I think there is a simple technical solution here. When I drive to work each morning, I see a number of equally frustrated commuters stuck in traffic. Traffic in the Washington DC area is among the worst in the nation. It’s an ugly experience to commute to work for the most part.

What stands out is that most vehicles can accommodate four people but there is only one person driving. I know this is not an earth shattering observation, and people try to address this with car pool measures and other techniques. My question: Is there a simple technical/mechanical method to have the car to a more appropriate size so that one person is driving the “right” sized vehicle for themselves, without compromising their regular need for the full size vehicle?

The answer is to introduce a 4 seat to 2 seat conversion technology I think. Like the convertible tops that fold in and out in the car, you have a four seat to two seat converter. It would decouple the two back seats and assemble the vehicle back together again. There are some keen mechanical challenges here; especially involving the exhaust system, but I think they can be overcome by an ingenious mechanic out there.

So once you hit your magic button in the morning, your usual four seater turns into a two seater. You do your daily commute, and any time you need the full size feature, you would reattach at a point and hit the magic button again. Should an emergency arise and you needed the full size in a hurry, dealers would stock extra back seat components which again the magic button would reattach.

Think how simple this would be if it’s mechanically feasible. It’s true that the massive components of a car do not reside in the back seat. The engine is in the front part for most cars. However, say the savings is only 5%-10% because of the decreased mass. If you multiply that by the number of vehicles traversing our highways every morning, you quickly realize the significance.

The main obstacle I see here is that there's a mechanical challenge of disconnecting the back seat portion, and then there's the challenge of keeping the rest of the car aerodynamically tuned with a different configuration. I'm sure there are a number of interdependent components that would require adjustment when you flipped modes. But I don't think any of them are insurmountable, and in the end you would just have a switch that would flip modes and make all the adjustments after you physically remove the back seat component.

This plan requires no fancy new technology beyond the coupling/decoupling scheme I have described. If implemented as convertible rooftops are it's such a minor nuisance/adjustment to your way of life that I think most people will gladly accept it if there's a significant savings in fuel costs. With fuel costs rising the way they are now, I think that's even more incentive for the average Joe to take advantage of this. What could tank this plan/approach is if the savings turns out to be negligible. I don't think that's the case, but that's just a gut feeling, and I haven't done any numbers to prove it one way or the other.

If you needed a back seat component in an emergency, the dealers could stock standard additions. Or there could be an evolution depending on demand where some 24 hour stores would base their business on renting components on demand.

A plan like this can be adopted for any type of car- electric, hybrid, gasoline, or whatever the underlying technology is. So it has wide applicability regardless of how environmentally friendly we make the fuel. The basic point of physics is that the reduction in mass will help minimize the fuel burned.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 3.

At the time of this edition (June, 2012) gas prices have risen significantly in the United States again. An average price is hovering around \$4.00 per gallon. I think any ideas to cut costs to the average citizen deserve a close look at this price point.

Chapter 4

Gas Stations and filling up

“It puzzles me how they know what corners are good for filling stations. Just how do they know gas and oil are under there ?” Dizzy Dean

Recently, I stopped off at a gas station and was headed inside to get a hot coffee. I nearly got run over by someone backing up and talking on their cell phones. I think that’s the most dangerous time to be using a cell phone while driving. Luckily, I was nimble enough to jump out of the way. Clearly, the driver had not seen me and she only missed me by a couple of inches.

She was backing up because she didn’t have a pump available on the “right” side for her car so she had to drive around. I’m sure everyone knows what I’m talking about. Some vehicles have their gas tank caps on the passenger side of the vehicle, while others have them on the driver side.

This leads to a lot of chaos, especially at the smaller gas stations. Although the large ones are not immune either. There are cars parked facing in opposite directions, some cars just wait for a “good” facing pump to avoid any backing maneuvers, and others just leave looking for another gas station.

My thought is that this problem is easily resolvable with little cost. The car companies should just place gas tank caps on both sides. Imagine how easy life would be then. The traffic flow at gas stations would improve substantially. If you see how snarled even the large stations get during rush hour, you can appreciate the benefit of this idea. The gas stations would get increased revenue (more cars processed per hour with fewer traffic snags), the drivers would have a much easier time because they would just drive up to the nearest available pump.

It should also be noted that by reducing the number of idling cars waiting for pumps, there is a positive impact in terms of the environment. Not a big deal, but every little bit helps . Cars that only have a gas tank cap on the passenger side, for example, sit idle and run waiting even though there’s a potential spot open. The potential spot is not oriented in the correct direction for them. I see this all the time at gas stations.

To do this physically I think is quite easy. It’s just a matter of putting another entry into the gas tank. The question is what’s the incentive for the automaker to put the extra cost into this operation?

I don’t think there is much. To begin with, this would have to be an option offered to the consumer for what I would think would be a very modest cost. Consumers like me who find it an irritation would pony up the extra cash and be happier at the pump. If there are enough consumers like me, the option would justify itself. If not, then it will die out like the dinosaur. If it catches on with sufficient vigor,

eventually it might become just a standard feature. So to put the option out there doesn't really impact the car manufacturer much.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 4

This idea was one that most people viewed as just simple to implement and imbued with common sense. I think it received nearly universal support from critics and readers.

Chapter 5

Luggage and Airplanes

“I feel about airplanes the way I feel about diets. It seems to me they are wonderful things for other people to go on” Jean Kerr

I noticed that one of the airline ploys is to charge for luggage when you fly. I have never been enthusiastic about flying, but these types of charges are like a final blow. Flying used to be more fun. Now the seats are so cramped and the security is so tight that all the joy has been drained out of it. The only positive thing I can say now is that it's a good chance to catch up on some reading. It's also a way to avoid dreaded cell phone calls and pager messages for those of us in the IT industry.

One of the most boring periods of time when flying is while you wait for your luggage. Looking around at the deadened expressions on the other travellers waiting, I feel I am not alone. Its complete dead time and you can't wait to get the luggage and move onto either your rental vehicle or your own vehicle, depending on which airport you are at and how you got there.

I think there is a way to improve luggage handling and tracking and also increase business at the airports by introducing some technology into the mix. The idea is very simple. You attach a transponder to each piece of luggage that is placed on the airplane. It could be an optional service to begin with. When you arrive at your destination, instead of heading to the sterile baggage pickup area, you head for the nearest friendly pub and grab brew (or you grab a tea if that's your preference).

Your luggage gets loaded onto the belt. As the luggage comes up on the rack, it sets off the transponder, which communicates with a strategically placed wireless device. You get alerted that the bag has been placed on the belt ready for pickup via Twitter. There's a bag id, since you may have more than one bag. If you have a group of bags, you get one notification when they are all placed on the belt and come up.

I think this is fairly straightforward technology. If security is a concern in this post 9/11 world, I would think the ability to track each and every bag uniquely while in flight would enhance security quite a bit. It seems to me our bag tracking technology is really lagging behind the general technology curve. What I described here should be quite a simple program to write and set up. Implemented properly, it would make our flying safer, increase revenue at airport bars and restaurants (people would probably spend their time at a food court or a bar waiting for their luggage rather than sit around the baggage area), and also help in recovering lost luggage.

That's still one of the most vexing parts of flying. Luggage gets misplaced, redirected to a different airport, etc. Think of the transponder system synced up to a central database in near real time. If you went

and said “I can’t find my luggage”, the operator would just hit a few keystrokes and identify its location immediately. At least you know your valuable luggage is being tracked and not just lost in limbo.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 4

The excellent website “How Stuff Works” has a discussion of a very modern luggage handling system being implemented at Denver International Airport: <http://science.howstuffworks.com/transport/flight/modern/baggage-handling.htm>

Chapter 6

Thoughts on Chess

“All opening moves were the same, like in chess. You don’t have to come up with anything new, there’s no point, because you’re both after the same thing anyway. The game soon finds its own way and it’s only at that point that you need a strategy” Paolo Giordano “The Solitude of Prime Numbers: A Novel”

This chapter is about my enthusiasm for chess, but I think a lot of the ideas could apply to modifying any game you enjoy. It might provoke you to think about how you would improve your favorite sport or game.

I enjoy chess. I have enjoyed it since I was very young. I continue to be delighted by the amazing creations at the board. There’s a very artistic component of the game that’s not clear at lower levels of play. Anyone who has studied the games of Kasparov or the incomparable Mikhail Tal knows what I am talking about.

I am surprised the game is not more popular. I think a lot of that has to do with the complexity of the game. I think there’s a real easy way to address this issue and draw more people into it at an introductory level.

The standard chess board has an 8 by 8 matrix as the board. On the first rank (the rows of the board), you see a rook, a knight, a bishop, a queen, a king, a bishop, a knight and another rook.



Diagram 3 Opening Position of the Pieces at the start of a game of chess

There are centuries of opening and development theory in connection with chess. It's absolutely fascinating reading, but I suspect it's more than can be digested by most people, especially since most would think a game is not worth such an effort.

It's hard to explain the appeal of chess to anyone who is not immersed in it. Like any other serious hobby, you have to more or less be a participant to understand it. And people involved in the hobby like encouraging others to participate. So I think the way to make more people appreciate the beauty and complexity of chess is to simplify it. As paradoxical as that sounds, I think it draws more people into the basics, gets them to appreciate how all the pieces move, and also makes it a fun past time that does not knock you out intellectually. A tough chess game at a tournament or against a worthy opponent leaves you drained in a way that's hard to describe. The concentration level required is very high, and you have a physical reaction to it. It's a very familiar phenomenon in World Championship chess games, for example. The participants look like they have run marathons after the matches, which can last months.

So here's my idea. You eliminate 2 columns on the right side of the board. You are left with 8 ranks (rows) and 6 files (columns). To the left of the queen in the diagram above you retain only the knight. To the right of the queen in the diagram above you retain only the bishop. A legal starting variant would also consist of flipping these rules. To the left of the queen you retain only the bishop and to the right you retain only the knight. This proposed configuration is shown in Diagram 4



Diagram 4 proposed Simplified versions of Chess

I'm calling this version of chess TrimChess. The rules are very similar to ordinary chess. Castling is a little different due to the shortened board. Formal rules for TrimChess are included in Appendix 1. The Appendix also includes a description of the algebraic notation I use for a sample game.

I played a few games of TrimChess. Admittedly, the games were very simple, but totally enjoyable. I expect that a lot of beginners would love to play games with this setup, where you would become familiar with the way all the pieces move. You can also develop quite a few strategies (control of center, for example), and illustrate them in a clear fashion. It would be a great training and teaching tool.

Here is part of a sample game using the standard chess algebraic notation

1. d2-d4 d7-d5
2. e1-b4 (eyeing the e7 square) b8-c6 (defending e7, attacking b4).
3. b4-a3 (keeping the bishop along the diagonal) e8-d7 (preparing to castle)
4. Castle short (king goes to e1 , rook goes to d1) castle short (king to e8 , rook to d8)
5. b1-c3 (develop knight, attack d pawn) e7-e6 (defend the pawn, bishop c6 is bad due to e2-e4).
6. b2-b4 (threatening b5 leaving the knight with no good spot) a7-a6 (defending against b5 and leaving the white bishop in bad position).
7. c3-a4 (intending to establish a powerful knight outpost on c5) c6xd4 (black picks up a pawn, the knight is exposed to the bishop).
8. d1xd4 (takes knight) d7xa4(takes knight).
9. c2 -c3 (overprotect b4, prepare to make bishop more active)

Here is a diagram of the position after move 9.



Diagram 5 Position after move 9 for sample TrimChess game

The game went on for some more moves in this vein. If you are an active chess player, you see that there's plenty of scope for a fairly lengthy game with new patterns and challenges. Black won, and since I invented this game and I'm now undefeated, I declare myself world champion .

At the other end of the spectrum, there are some geniuses at the game who really think the game is not complex enough. The great chess genius Jose Raul Capablanca had an uncanny intuition for positional chess. His innate talent made him one of the greatest players in history. He suggested a far more complex version of chess with pieces that had extra maneuverability. With chess computers being so prevalent, and modern day geniuses doing superb research and preparation, I think there is an elite that can appreciate a more complex version of chess.

Capablanca's idea was so complex, that I don't think even modern chess players would find it workable. I have an idea for the expansion of the board that will immediately grab the imagination of great players, I think. It will also pose a new challenge to computers and will fire up a new generation of chess enthusiasts. The idea is to expand the board by 2 columns. So the board now consists of 8 ranks (rows) still, but consists of 10 files (columns). The initial setup would be rook, knight, knight, bishop, queen, king bishop, bishop, knight and rook along the first rank. Pawns would occupy the second rank. You mirror the setup for black. The rules stay the same- castling short means king goes to h1 and rook goes to g1. Castling long means king goes to c1 and rook goes to d1. This proposed configuration is shown in Diagram 6.

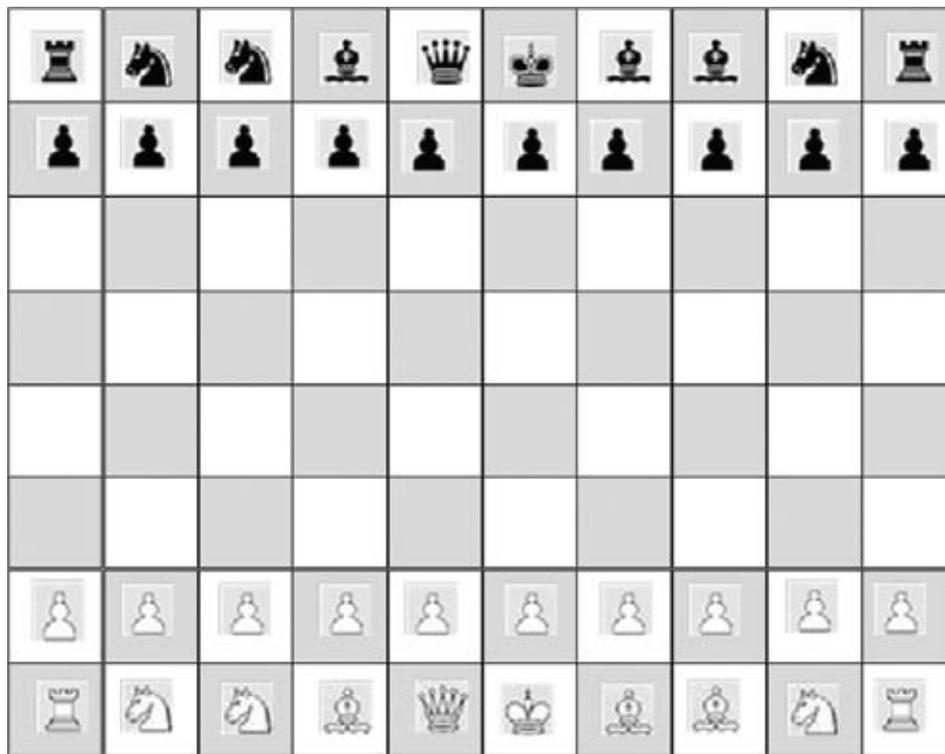


Diagram 6- Proposed Complex version of chess for elite players

I'm calling this version of chess StrongChess. The formal rules for StrongChess are laid out in Appendix 2. Here is a complete game where black loses. I believe that this is the first game of StrongChess ever played and I can once again declare myself World Champion. The algebraic notation used here is explained in Appendix 2.

- | | | |
|-----------------|-----------------|------------------|
| 1. f2-f4 f7-f5 | 12. g1-e1 i8-j6 | 23. e2-b5 h5-d6 |
| 2. i1-h3 c8-d6 | 13. a2-a3 b4-d5 | 24. d1-d4 c8-b6 |
| 3. g1-d4 c7-c6 | 14. c3-d5 c6-d5 | 25. e1-d1 g8-h7 |
| 4. h2-h3 d8-c7 | 15. a1-c1 h8-i7 | 26. a1-b3 d8-c8 |
| 5. h1-f3 h7-h6 | 16. d2-d3 g7-g6 | 27. b5-a6+ c8-b8 |
| 6. 0-0 b8-a6 | 17. c2-c4 d5xc4 | 28. c6-b7 d7-d5 |
| 7. e2-e3 i7-i6 | 18. d3xc4 j6-h5 | 29. b3-a5 c7-d8 |
| 8. c1-b3 b7-b6 | 19. b3-a1 j7-j5 | 30. c5-d6+ d8-c7 |
| 9. b1-c3 e8-f7 | 20. c4-c5 b6xc5 | 31. a5-c6++ |
| 10. d1-e2 a6-b4 | 21. d4xc5 d6-c8 | |
| 11. e1-d1 0-0-0 | 22. f3-c6 e7-e6 | |

Here is a diagram of the final position where black has been checkmated.



Diagram 7- Sample StrongChess game where black is checkmated

I tried playing a couple of more games with this setup. There is a rich amount of imagination and play involved. With so many bishops and knights on the board, there was much scope for creativity, errors and experimentation. Because of my modest skills as a player, I could not see the entire range of possibilities and permutations, but it was a ton of fun nonetheless. I'm certain Grandmaster caliber players will be able to mine this game for a lot of variety and joy. I can imagine a Kasparov or Tal like player with vivid imaginations would really love this complex version of the game. Computers could easily be programmed to play this type of game, offering up new challenges to players from the inception of the game.

This type of new chess will lead to rise of a generation of fiery players whose imaginations will be unleashed. Chess theory will advance in leaps and bounds. I cannot appreciate all the depth myself, but I'm certain we will get challenging schemes of development that defy current established methods. Opening theory, middle game theory and end game theory will all be impacted to some extent. Paolo Giardano's quote at the beginning of the chapter will not hold true any more, atleast until the opening theory for StrongChess becomes rote and well known.

One of the most exciting things about these two variations of chess is that it's totally straightforward to build a board that can accommodate all three versions. The idea is to have a standard type board with 10 columns and 8 rows, but have flip panels on both sides of the board that covers 2 columns. This type of board is depicted in the following diagram.

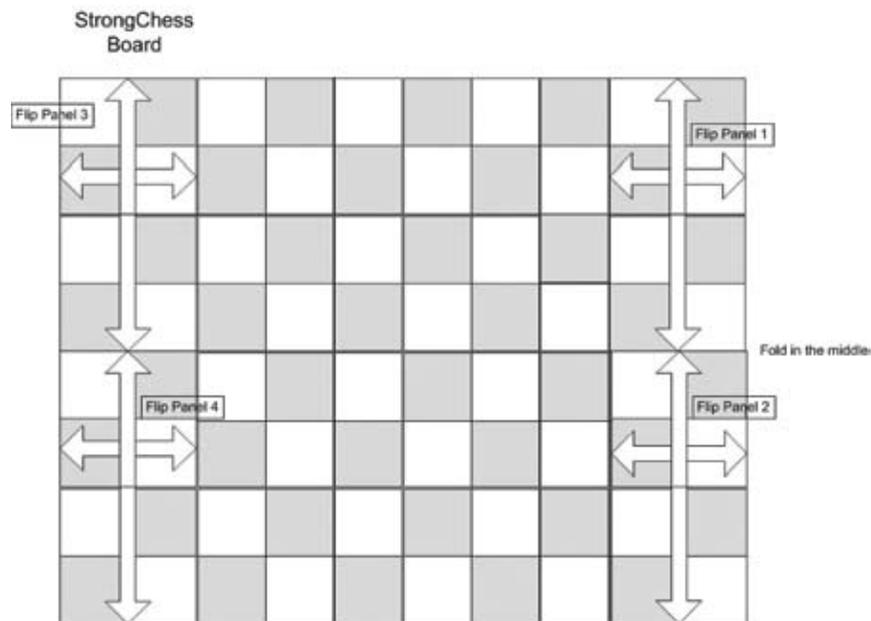


Diagram 8- One board that can accommodate StrongChess, Regular Chess and TrimChess

The flip panels have regular chess squares on one side, and the board border wood color on the other side. When flip panel 1 and 2 are flipped, the StrongChess board becomes a regular chess board. When 3 and 4 are flipped in addition to 1 and 2 the board looks like it has 2 extended borders and is ready for the 6x8 TrimChess game. To hone your skills you can start with the simple version, flip 2 panels and play regular chess and then for a challenge, go to StrongChess with 10 columns and 8 rows.

The fact that you can enjoy all three variations with one physical board makes the proposition of playing the variations even more appealing. There's no special investment to have to build separate boards. Depending on your mood, you can transform the board to regular, easier or challenging versions.

Discuss and enjoy! Try a few games.

Notes for the 3rd edition for Chapter 6

There are many variations on chess, but none that are like the ones I suggested. Wikipedia has an excellent summary of existing variations at this site: http://en.wikipedia.org/wiki/Chess_variant#Chess_with_different_boards

Chapter 7

Thoughts on hockey

“Every day is a great day for hockey” Mario Lemieux, Pittsburgh Penguins Superstar

I have been a long time fan of hockey. I used to watch as many games as possible. Regular season and playoffs. I was really captivated by a powerhouse team in the early 1980's, the New York Islanders. It was a team that boasted incredible superstars, tremendous foot soldiers, and a versatility that was just marvelous. That team could fight it out with the physical teams, finesse it out with the best skating teams or just grind it out with the defensive minded teams. No matter what the style the opposition was on the ice, they would prevail. It was artistry on ice watching them. The team ended up winning a mind boggling 19 consecutive playoff series. I doubt if that record will ever be surpassed. By the way, if you are really not interested in hockey or sports, you can safely skip this chapter .

Just when you thought it could not get much better , the successors to the Islanders, the Edmonton Oilers proved to be a razzle dazzle offensive team with unbelievable talent. There will probably never again be a collection of players with so much raw talent. It took me a while to appreciate the Oilers, since they dethroned the Islanders and prevented them from gaining 5 consecutive cups. But over time, I could really appreciate their grit and desire.

It was a great time for hockey with lots of offense and comparatively weaker goaltending and defensive schemes. The entertainment value for fans was enormous. The pendulum , however , has swung to lower scoring again. But the modern game is fantastic. The athletic ability of the players has improved quite a bit. Many teams have a number of skilled players, even the lowest ranked teams. Sadly, the Islanders have slipped to being one of the consistently worst teams in the league, but that's another story.

There was ofcourse the great Wayne Gretzky. I thought the guy was a fluke at the beginning. Never have I been more wrong about a player. He had unique gifts and a vision on ice that remains unparalleled. The best way to describe it is that he saw the ice the way a spectator would from above. He knew where everyone was on the ice and therefore knew the best play to make at all times. Normally, when you are on the ice, all you see is the guy about to hit you hard. Gretzky never had that problem because of his tremendous lateral movement and peripheral vision.

From the 1980's to now, the most common complaint has been the comparative lack of scoring. Although I think that has been on the upswing lately. The pace of the modern game is extraordinary. I tuned into last years Stanley Cup playoffs and was really pleasantly surprised. I think there's a solid foundation there to build up a major sport rivaling football, baseball and basketball. It would probably

help if there was more scoring to get the general public involved, although hockey purists like me are quite happy with the game the way it is.

I have heard a lot of ideas proposed to improve scoring- so far I think none have succeeded. I think there is one that is kind of counterintuitive , but it would work. My idea is to add one more player to the mix. I know this is radical , and at first sight seems like it would cut available space and make for a lower scoring game – bear with me here.

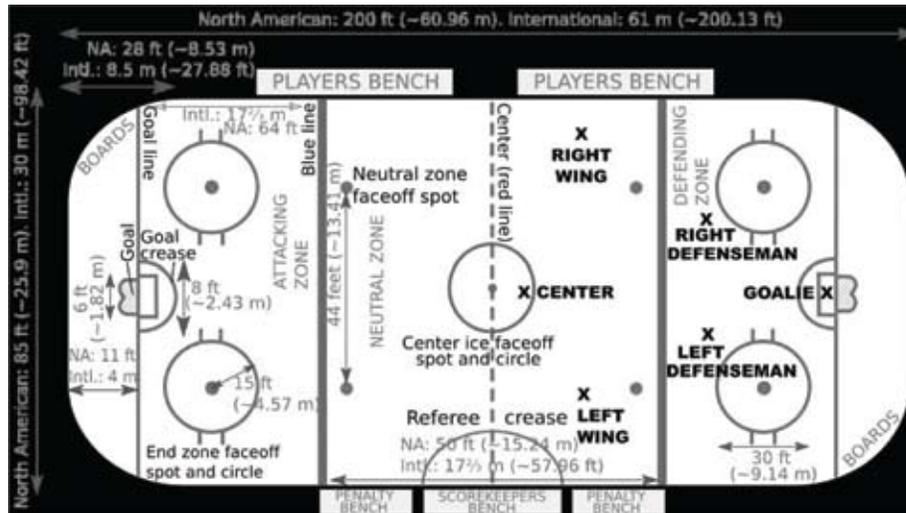


Diagram 9 - Hockey rink layout.

Diagram 9 shows a picture of a hockey rink layout. The 3 forwards (the center, right wing and left wing) make either a passing play and enter the zone or they dump the puck in once they cross the center line and forecheck. The current flow of the game is very fast, but the goalies have become superb. Their equipment has also been expanded, helping their efforts. That’s why goal scoring is still low , even though the pace of the game is exciting and the players are in excellent physical shape. The issue is not with the skill level of the players or the quality of goaltending. The issue (if you want to label it an issue) is that the overall quality is excellent, everyone understands offensive and defensive systems really well, and its just hard to score.

With my proposal, the extra man would be stationed initially behind the 3 forwards and in front of the defensemen. He/She can act as a pivot between forward duty and defence duty. The extra player could participate in a more vigorous defence and try to cut down open ice in front of the goalie, that’s true. On the other hand, it would also allow for a more ferocious forecheck for a team that was interested in working in that direction. One of the standard attacks in the current format is to send two guys in for the deep forecheck, but hang back with three guys on the defence to prevent odd man breaks in the other direction. In situations that require more aggression (for example, trying to catch up in a game where you are behind), you may see a three man in deep scenario. It would probably be most effective for teams to have a complete hockey player in this role in the mold of a Bryan Trottier, or a Steve Yzerman. But the more offensive minded teams could just add a purely offensive oriented star at this position, and the more defensive minded teams could just add another defensemen at this position. All sorts of permutations are possible, and the NHL coaches could have some fun with trying these out.

With an extra guy in the mix, I think you could try a three man forecheck safely and still leave good defence to back them up. That could lead to a lot more slick plays with an odd man breaking out in

front of the net while two guys dig deep behind the net. You could also see four guys in deep with two guys hanging back in some desperate situations. That could also provide some entertainment in terms of odd man breaks (four on twos, three on ones, and some different permutations like that). There is also the possibility of gifted players of the game today, like Sidney Crosby, to be more of a rover on the ice (someone who hangs around the blueline waiting for an outlet pass). The extra guy on defence would offer up a little more freedom for roving. This could create some exciting breakaways involving top offensive starts in the game. It could also backfire because the rover deprives his team of a key defensive resource, but that just adds to the excitement.

I know this does truly sound counterintuitive , but I really think it's worth experimenting with. It would shake up the game a little and lead to some new offensive and defensive patterns. I think that's why the 1980's produced such exciting hockey. The Oilers and the Islanders introduced new elements into the game that produced different playing patterns.

To do a test, you could have a couple of top notch teams like the Detroit Red Wings and the Pittsburgh Penguins play a few games with the extra man. I think it's worth a try, especially since all other attempts to increase goal scoring , all of which seemed intuitively obvious, kind of failed miserably. So I think it's time to go with the counterintuitive option . Heck, there's no harm in trying it , if only for a few exhibition games. My bold prediction is that a new era of razzle dazzle hockey will be launched with teams like the Oilers or Islanders of the 80s emerging to the forefront.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 7

The following site has an excellent chart that demonstrates how overall offense has diminished pretty consistently in the National Hockey League over the years. You can see it at a glance form the chart: http://www.quantohockey.com/TS/TS_GoalsPerGame.php

Chapter 8

Thoughts on cats and cat litter

“The interesting thing about being a mother is that everyone wants pets, but no one but me cleans the kitty litter.” Meryl Streep

I have had cats as pets since I was a child. I also had the chore of cleaning their litter since I was 10 or 11 years old. Cats are lots of fun, but cleaning their litter is no fun. Plus the smell is always there in homes where cats are present. The owners just get used to it and don't realize it, but it's obvious to anyone who visits.

There are lots of unsatisfactory solutions to this situation. Covered litter boxes, scented litter, naturally scented litter, strong sprays and many others. I have tried most, but still have the problems of litter mess and smell. The problem is particularly acute if you happen to own a luxury home where there's a premium on presentability and overall neatness.

I think there's a fairly simple solution to this problem, and without too much expense. My idea is to have small Bilko doors attached to the house. These don't need to be any larger than about 3 feet by 3 feet and should accommodate the litter box comfortably. From the inside of the house, the only means to access the bilk door litter area should be by a cat door. This is just a small rectangular hole where the cat enters the area. The Bilko doors themselves must be insulated and well-built so that you don't have heat loss during the winter or hot air gain during the summer. There should also be a fan arrangement so that you can blow out air periodically (similar to what is in most bathrooms). You should have the ability to close the cat door, to enable an easy cleanup of the Bilko door area. Otherwise, if you spray down the area with water to clean up from the outside, it might seep into the inside of the house.

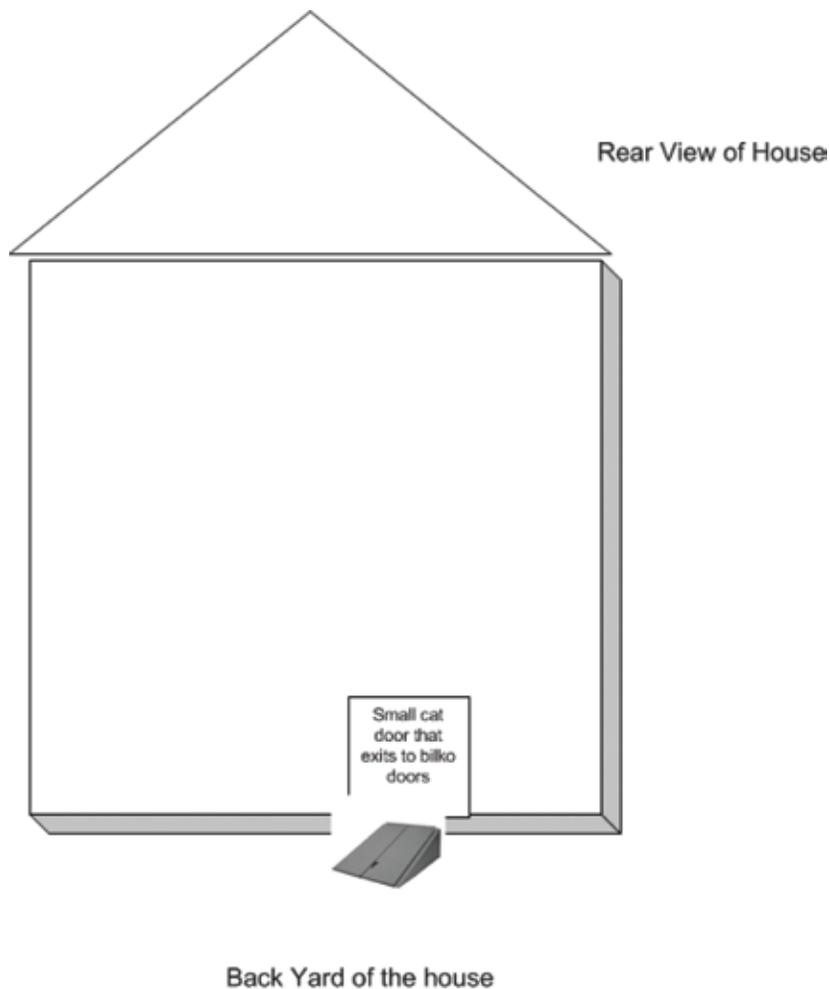


Diagram 10- Bilko doors on the outside, cat door from the inside of the house

Diagram 10 shows how the cat litter/Bilko door arrangement should be set up. So now our little feline friend just goes in through the cat door and uses the litter box placed in the Bilko door area. Once in a while you can turn on the fan to exhaust the area. Come time to clean up, you go outside the house into the back yard, open up the Bilko doors and clean up the mess. You could air out the area easily enough during the summer. Plus there's also scope for just taking a garden hose and spraying and cleaning the area. All this can be done without messing up the inside of your house, or having any unpleasant odors lingering around. The Bilko doors would have to be properly locked so that there are no security concerns.

I'm looking forward to working with the guy who can help me with this and eliminate my litter smell problems once and for all. I think it's a simple enough plan that should be easily executable. Just as people use the fans to exhaust out the air periodically, you could do the same things for cats, who have much stinkier litter that is not flushed. Discuss and enjoy!

Chapter 9

Our National debt and deficit

“We must not let our rulers load us with perpetual debt.” Thomas Jefferson , letter to Samuel Kercheval, July 12, 1816

At the time of this writing (Dec 16th, 2010), the U.S National debt is approximately 14 trillion dollars according to the debt clock. This amounts to about \$45,000 per citizen. These are staggering numbers, and from my conversations with many people I know there is a great deal of concern about the debt.

The debt is a little different from the deficit , which is a measure of revenues minus expenses. I look at this, I'm sure somewhat simplistically, in terms of ordinary budgets. If my wife and I bring in X number of dollars and spend Y number of dollars, our deficit (or surplus if the number is positive) is X-Y. So it looks like our country brings in X number of dollars as tax revenues from all the citizens and spends Y number of dollars. Y exceeds X, so we are running deficits most years. During the Clinton years, I believe there were some budget surpluses, so X exceeded Y. Although that's a great feat given all the money our Congress wants to spend, it does not help with the debt.

This situation scares the heck out of me. To me it resembles a hypothetical personal financial situation where my wife and I were both spending \$10,000 per month, while bringing in say only \$8000 per month. So every month we run -\$2000.00. On top of this, however, we both have a credit card debt of say \$45,000. And we just keep borrowing to cover our shortfall. This hypothetical would put me pretty well into a panic. That's why I think the long term financial health of our country is in grave jeopardy.

There is a connection between the deficit and the debt. I hope I'm not looking at this too simplistically, but if we add up all the deficits incurred over all the years the government has been there, and we subtract the surpluses for the odd years here and there, that should give us our national debt.

How do we get out of this situation? What I see is politicians bickering every time there's an election cycle, and running up deficits and not really even addressing the debt issue. Going back to my hypothetical, how would we dig ourselves out of the deficit, and address the debt situation at the same time?

I don't think there's any magic on how to reduce the deficit, it's fairly obvious. You have to either cut spending, increase revenues or do both simultaneously. With the amount of political bickering going on, it's hard to see how this is going to happen, but something has to give. Taxes will have to go up to increase the revenues and both parties will have to abandon their sacred cows and cut spending. How to do this humanely so that you don't impact the aging and vulnerable population (like the older folks), is a difficult problem. I don't have any fresh ideas there. Cutting defence spending for horribly large weapons systems seems feasible to me. At the same time, I would invest a lot more in terms of beefing up the number

of people in the armed forces. I think it's really important to have a large standing army, but not really important to have multibillion dollar weapons systems. These will all be hotly contested debates, and I'm not sure how we will get to the bottom of the deficit reduction equation. Probably a combination of some taxation and cuts that will all be unpopular for some segment of society (if not all).

However, I think there is scope to address the debt in a very systematic manner. Going back to the hypothetical, if my wife and I had \$45,000 in credit card debt, I would do one of those automatic payments where you deduct a certain amount out of the monthly revenue and apply it to the principal. I think that's what we need to do with the national debt. Regardless of which party is in charge, we should just take all of our national revenues from taxation and automatically apply say 10% to reducing the debt. This should be an automatically implemented action so one political party or the other can't screw the system up. Congress and the President should have no choice. If I'm paying say \$20,000 in taxes every year to Uncle Sam, \$2000 of it would go directly to reducing the \$45,000 portion of my national debt. If 10% is too high because it would gut the running budget too much, then a lower percentage should be tried, say 5%. Whatever percentage we apply will be better than the current percentage, which is zero. If I pay \$2000 per year, it would still take in the neighborhood of 25 years to shave the principal off my \$45,000 debt, but at least it is a start. As an example, in FY 2009, Uncle Sam collected \$2.1 trillion in tax revenue. 10% would be 210 billion dollars. Paying 210 billion dollars from the principal of 14 trillion dollars would represent paying down 1.5% of the debt. It's not much, but in 10 years we will have paid down 15% of the national debt without too much political furor. 210 billion dollars sound like a lot, but I think we can try and shave that much off the current budget if we are judicious. As I said, if it's real difficult to shave off that much without a lot of social pain, then target 5%, which would be a 105 billion dollars, and then ramp up the percentage gradually. The key point is that the automatic nature of the deduction and the pay down prevents political tampering with the budgetary principle. The plan will gain more momentum and popularity as the years pass, because the more you reduce the principal, the easier it will be to make interest payments as well. Whichever political party is in charge can claim credit for its success, a situation which is always conducive to encourage politicians to actually do something.

This would also of course force the revenue side downward, but I don't see that as a bad thing. The pressure to manage the deficit on a year to year basis will always be there, no matter what. Especially with all the pet projects and sacred cows everyone has, with lobbyists working hard to maintain status quo, the deficits will continue to be there until we make some fundamental change. We can't scrap plans to reduce the debt just because we are afraid of the deficit. I for one would sleep much easier knowing that I'm chipping away at the \$45,000 portion of my national debt contribution. If we just keep running a deficit or even manage a balanced budget but fail to tackle the debt, I don't see how we ever eliminate the debt.

Reducing the revenue would actually have a positive effect. It would force the government to look at spending cuts and tax increases in a very serious manner even in the short run. That would, in turn, potentially lead to elimination of the deficits. By sending the clear message that reduction in debt requires major sacrifices, by chipping away at the national debt every year via a portion of revenues, we send the right symbolic message to everyone- including Congress and the President.

I think this type of proposition could gain favor among both parties, because the impact to the citizen is not immediate. You could have a phase in plan so that the impact to revenues is not a major shock. Use an automatic 2% deduction the first year, then make it 4% the second year and work your way up to 10%. Or if 10% is just too high because the number crunchers think it will gut the running budget too much, and then pick a suitable value X after the detailed calculations. Say X turns out to be 8%. Then phase in

the plan and work your way up to 8%. You can try different rates of increase as well if that's easier. The only variables to set are the ultimate amount to aim for (which I think intuitively will be in the 8-10% range), and the slope of the increase. There's no difference in the taxes you will be paying. So it's easy to sell politically. To the average citizen, it just looks like some money shuffling at the government revenue side, and not an immediate increase in taxes or a major cut in spending. Regardless of your political leanings, pet projects, or sacred cows, almost everyone agrees on the need to trim the national debt in a systematic way. I think this sort of national "auto-deduction from the bank" scheme has a chance of success. Basically, it sets repaying part of the debt as a national priority regardless of which party is in charge.

Instead of the political stunt of a balanced budget amendment to the Constitution, they should add an amendment saying that paying a portion of the principal on the national debt is mandatory. The "auto payment of national debt principal" amendment would forcibly engage politicians to address our catastrophic debt situation. It would also prevent future generations of politicians from dipping into the credit till without any concern for the financial wellbeing of our country. The international community would have renewed faith that our government is serious about eliminating the debt, and would respond positively.

Discuss and enjoy!

Notes to the 3rd Edition for Chapter 9

The U.S debt clock has an extremely useful information at this site : <http://www.usdebtclock.org/>

The current debt load (on April 20, 2012) is about 15.68 trillion dollars or about \$50,000 per citizen. Discussions on reduction of the debt are mired in partisan politics. In my opinion, this type of escalation and deadlock just demonstrates that an autopayment scheme is a desirable path to the solution.

Chapter 10

I am overweight and so are most Americans

“The only way to keep your health is to eat what you don’t want, drink what you don’t like, and do what you’d rather not.” Mark Twain

My health took a nose dive in my late thirties. I worked a lot of hours at my job, and I did little physical exercise. This was in contrast to earlier years, where I managed in Canada to live without a car in Windsor, Ontario. Having to walk back and forth to the University did a lot for my basic dose of exercise. Walking everywhere else to get groceries, and other daily routines reinforced the basic exercise. I didn’t eat too much either, and that helped as well.

After moving here to the United States, I fell into a very lazy pattern of just driving to work, working excessive hours, eating junk food and repeating the cycle. Needless to say, my health deteriorated quite a bit. So after several shocking reports about the basic health metrics (triglycerides, cholesterol, blood pressure, blood sugar, low thyroid, etc.), I cleaned up my act and started a fairly rigorous exercise regimen. After that I cleaned up my diet quite a bit as well. I also quit smoking, which was one of the most difficult things I have done in life. Except for 2 lapses in 11 years, when I had been at parties and consumed a lot of alcohol, I have been totally off the smoking. I certainly have no desire left on a day to day basis to take up smoking again. I pursued hiking and other physical activities as hobbies.

Unfortunately, my rigorous regimen started softening up again, and I started to gain weight once more a few pounds at a time. Now as I passed 50, the final blow was that I have diabetes. My A1C is at astronomically high levels and all the other metrics have deteriorated again. Just to add to my troubles, an accident 3 years ago left me with 2 ankles with screws and pins. I crushed both ankles at a hiking site called Chimney Rock in Maryland. Luckily for me, the damage was not too severe and restricted to the ankles. Also, I got married and had a child, so my other responsibilities had increased. All in all, I found myself being totally unable to commit to the level of physical activity that I really should have. Plus the diet deteriorated as well.

I tried what seemed like dozens of different diets. I read several books on how to eat nutritiously without consuming too many calories. None of it seemed to help. Having defeated the nicotine habit quite successfully, I assumed it was not a matter of lack of willpower. After so many failures at diets, I was really discouraged. Except for the fact that so many Americans have successfully lost weight, I could swear that it was almost an impossible task.

The older you get the harder it is to lose weight. Plus now I started to get attracted to all sorts of snacks that are really bad for me, especially in view of the diabetes. Even medication was not helping

much in terms of the basic health metrics. I am convinced a lot of my problems would show significant improvement if I reduced quite a bit of weight.

It just made it worse that so many people had succeeded on these famous diets. Each diet would have what sounded like incredibly logical arguments for following their regimen. And there were testimonials from people which were very encouraging. The authors of each diet were for the most part extremely bright people who knew exactly what they were talking about. The unfortunate part for me is that I failed miserably in putting their theories into practice.

All was not hopeless, however. I took the attitude that if I played hundred games of chess with a grandmaster, I would lose all hundred rather handily. But if I took the time to analyze each loss and understand what I could have done better, I think my game would improve. So I was hoping my diet “game” would improve after an honest introspection of what had gone wrong.

In science, you try and break a problem down into its fundamental components. So it occurred to me that the problem here might be that I don't really understand why I loved bad food so much. I would try various schemes to avoid them, but invariably I would be drawn back to them. Eventually, after thinking about it, and doing some more reading, I realized that the behavior was essentially addictive.

The problem with food addiction is that since food comes in so many varieties, we are duped into thinking it's a control problem with ourselves. We don't realize we are getting addicted to common components in the food because they have complex presentations. But basically, our addiction in all its forms is to salt, fat and sugar. If you took all your favorite foods and removed these ingredients you would see this rather quickly. Try baking cookies and cakes without sugar. Try your favorite recipe without salt. Or just eat non-fat foods and see how tasteless they are. No one gets addicted to skim milk, for example. Or finds it irresistible. The same is true for vegetables, which are extremely healthy. I have yet to see anyone suffer from a craving for a carrot.

Viewed in this way, it's pretty clear that reducing weight really depends on breaking an addiction. I'm not claiming this is true for everyone, but it's probably true for a good subset of people. I feel like I fall into this subset.

But wait, the battle has just started. Knowing you are addicted is just the first step. I accept now that I am addicted to sugar, salt and fat. I can easily explain all my cravings that torpedo my diets in terms of having one or more of these basic components. If you look at junk food, they have a good volume of these nasty components.

Breaking an addiction is a very complex issue. I don't pretend to be an expert- different techniques work with different people. You need to check with your doctor before you try anything I suggest. They are the professionals. If they recommend drugs, I suggest taking them after understanding what the drugs do. You have to use every tool at your disposal to improve your health. So my weight reduction suggestions should be viewed as a complement to existing methods. Plus don't try anything if your doctor advises against it.

What worked for me for smoking was going cold turkey. I avoided all cigarettes. I kept this up from 1999 to 2008. I had 2 lapses since 2008. I want to apply the same principles to my food addiction. Just minimize (or even eliminate) all exposure to fat, salt and sugar. How can you do this? I mean, what is the practical way of doing this, given that we all have busy work schedules?

My answer is that you should rely heavily on soups. Soups have a lot of volume, but if you pick the right ones (usually the vegetarian ones), they range in calories from 100 to 200 per can. The volume gives you a sense of being full. You can venture beyond vegetarian ones, using the criterion I have set out. Be really particular about avoiding the ones that have addictive components (excessive fat, salt and sugar).

Preparing the soup and consuming it should take about 10 minutes or so. One of the basic facts of biology is that the body and mind don't communicate in sync on the feeling of fullness. The mind is about 20 minutes behind the body. So you have 10 vital minutes to spend now. What you can do is try another can of soup, or you can try black coffee or black tea. By the end of the 20 minutes you should feel pretty full. This 20 minute rule is really important, and you should keep it in mind.

Throughout the day, you get cravings for doughnuts, Doritos, or whatever junk food you like. Whenever you do consume either tea or coffee. Don't add any cream to the coffee. If you can, you can also grab another can of soup. One of the side benefits of this diet is that you expunge stuff smoothly and gain overall energy. Basically, this is all acting like flushing out a drug addiction out of your system. I liken it to eventually having nicotine flushed out of my system.

You don't have to do any calorie counting, which is sort of tedious. The only metric you need to keep in mind is how many cans of soup you consume. Make sure each one doesn't exceed 200 calories and have no more than 5 cans per day. A lot of these soups have legumes and other sources of protein, but if you are concerned about protein, I suggest putting a couple of tablespoons of skim milk per soup serving. That will cover the protein need, especially if you are confining yourself to vegetarian soups.

Eventually, to make this effective, you need to add some exercise. With screws and pins in my ankles, that poses a fair challenge. I can't really go running or anything vigorous like that. I confine myself to simpler hikes now as well. Luckily, what I have found about exercise is that the best form of it seems to be a vigorous walk or an elliptical workout. Neither really stresses out my joints. I feel like I could keep doing it into my old age. I think it's a form of exercise that's suitable for you lifelong. Of course any other exercise, like bicycling, hiking and swimming are great too, but you need a staple exercise every day, and walking or an elliptical machine seems to be the best for that. It's also important to set a concrete achievable goal for burning calories via exercise. I set this to 1/3 the calories consumed. So if I do 5 cans of soup with 200 calories each, the total consumed calories were 1000. I do 333 calories burned by exercise for this amount of intake. Trying to do more just leave me hungry and eating more. I found that eating as little as possible helps me the most. Somewhat paradoxically, if I can manage with 600 calories in a day, I end up doing 200 calories worth of exercise and I feel absolutely fantastic the next day. I have no explanation for this since all the books seem to indicate 600 calories are an absurdly low value. My own theory, which is based solely on intuition, is that if you have type 2 diabetes, the standard recommended calorie count is just absurdly high. If you can confine yourself to a maximum of 1000 calories per day and a minimum of 600 calories per day, you will see almost immediate benefits in your energy level and sugar levels. The other noteworthy point about exercise is that you can divide it up into as many intervals as you can handle and deem convenient. I found no difference between doing 5 minutes 6 times a day or 10 minutes 3 times a day or just 1 30 minute session. The fact that you can break it up and your total goal is around 330 calories maximum makes it really easy to integrate it into your day. You can go up and down stairs for 5 minutes if you are at work, for example. I did not always meet the 1/3 calories burn rule, but just set it as an ideal goal. For example, on Day 1 I only burned 80 calories or so. I improved on Day 2. I just kept trying to improve, while trying to keep the intake between 600 calories and 1000 calories. I also missed the intake goal by 100 calories or so on several days, especially in the early going.

I'm not claiming any general applicability to this diet, and I repeat you must consult your physician before trying anything like this. However, my personal experience with this diet is that you don't abandon it for the usual reasons: food boredom, lack of practical methods to combat hunger, and cravings for bad foods. The number and variety of soups, teas and coffees are more than enough to keep the pallet feeling like you have a wide variety of flavors. It's a very simple and practical diet, and you can use it even when you are eating out. Just order the soup and nothing else. It's sometimes hard for me to do that due to the vegetarian restriction (a lot of soups have chicken broth), but if you are doing soups with light meats, you won't have any problem like that. If soups are unavailable, just order a salad. If you run out of soups at home, keep a lot of frozen vegetables that you can heat up quickly. Plus remember the 20 minute rule and use coffee and tea liberally.

I chronicled my daily progress below, so physicians and others can see actual metrics improving fairly rapidly.

Table 1 Results from the first 3 days

Milligrams per Deciliter (sugar reading)	Day	Weight (pounds)	Calories consumed(+) – calories exercised(-)	Violations to diet
246	1	208.5	320+50+50+200-50-20+180+180-30+300=1180	Had 2 bowls of sugar free ice cream. Intake overshoot. Exercise short on calories
238	2	210.0	180-90+125-70+150+150+75-50+250+350-50-50=970	Intake overshoot. Exercise short
205	3	208.0	204+204+230+100+150+175-50+150-50-50-70=997	Intake overshoot. Exercise short.

Day 1 was only partially successful, as I could not resist some sugar free ice cream that was sitting in the fridge from Christmas celebrations. I did manage to keep my calorie intake around the 1000 calorie range (net consumption after exercise). Even this meager success was rewarded with an 8 point drop in sugar count the next day.

Day 2 was more successful, with no violations to the core principle of the diet (avoid all fat sugar and salt). Plus I confined myself to a net calorie intake of 970 calories. The result was a drop of 33 points in the sugar count the next day.

Day 3 posed a particular challenge because my son wanted to go to Pizza Hut. Pizza is traditionally one of my early breaking points, but encouraged by positive results, I was able to go to Pizza hut and just have the salad bar. That was a first, and I felt like I was overcoming my addiction even at this early stage. It was still only a partial success, because I was not getting as much exercise as I wanted to. Still, confining me to the basic principles felt like a real advance, and avoiding cheese, one of my favorite foods was definitely a psychological victory.

I reached the following conclusions from the first three days:

1. Stay on course, even if you violate the diet. Obviously, you can't let the violations overwhelm the rule.
2. Keep following the cardinal rule of avoiding fat, salt and sugar. Like a heroin addict who avoids heroin, or a smoker who avoids nicotine, just avoid these substances. Your addiction is equally powerful.
3. Carry a variety of flavors of tea bags with you. You can always put them in even cold water and get some satisfaction for your flavor cravings.
4. Stick to drinking water, black tea, black coffee and skim milk. Confine yourself to these drinks.
5. Stock up on spices. Spices like cinnamon, cardamom, coriander, garlic, mustard seeds, marjoram, oregano and others add a lot of flavor to foods without any harmful effects. The fact that you gravitate towards sugar and salt in spite of the abundance of tasty spices is another indication of the depth of the addiction in my view.
6. Remember the twenty minute rule. If you start to get hungry, don't start stuffing yourself with junk. Grab some tea, coffee or water. Whatever method works, just use up 20 minutes. You are allowed to consume soup or some other substance that is around 200 calories in this interval, but try to confine yourself to the 200 calorie range. I jumped on the elliptical during these 20 minute intervals as well. Light exercise helps pass the 20 minutes and also adds to burned calories to help out the daily total. Once the 20 minutes are up stop eating. If you don't feel full, try some coffee, tea or water for another 20 minute interval. You can also throw in some light exercise to complement this consumption. By the time the 2nd 20 minute interval is up, my experience was that I had no urgent need to eat. It was more of a controllable impulse.
7. Since I was consistently missing on the intake and the exercise, I modified the rule temporarily so that the net daily total should not exceed 1000 calories. My intention was to get stricter as the diet progressed and my control became better. I already had the impression that the lower the better for intake, down to say 600 calories (this would later be proven correct). The exercise component would have to be gradually strengthened.
8. Keep an elliptical machine near the kitchen area. That way you can jump on it and burn some calories while preparing food in the microwave or stove. Since you have to wait for the food to get ready anyway, this contribution to burning calories helps. Use short periods like 5 minute intervals to exercise – every little bit helps.

Table 2 Results from the Day 4 to Day 15

Milligrams per Deciliter (sugar reading)	Day	Weight (pounds)	Calories consumed(+) – calories exercised(-)	Violations to diet
197	4	207.0	$400-50+200+200+200+300+300=1550$ calories	2 glasses of wine and sugar free ice cream. 1000 calorie target missed
190	5	207.25	$150-80 +204+200+150-100+175+200+200+350=1649$	<i>Two glasses of wine, several bowls of ice cream (sugar and sugar free). 1000 calorie target missed</i>
215	6	205.75	$150-50+200-200 +200+200+200+200=900$	None
181	7	207.0	$200+100+204-200+500+120+200+200=1320$	A large meal of 500 calories was consumed at one sitting. 1000 calorie target missed
166	8	208.0	$204+100+120+100+100+100=724$	None
168	9	207.0	$204+120+100+50+100+100+200=874$	None
157	10	205.5	$204+120+100$; 1400 calories of junk food also consumed. Total 1824	A lot of unfortunate violations. Sugar desserts, sweet cereal, nuts. Expecting bad reading for tomorrow
177	11	206.25	$204+120+100+100+260+150=934$	None
176	12	206	$204+120+100+120 +100+100=744$	Minor violation popcorn with butter
166	13	206	$204+120+120+100+100+150+$ ate out at in-laws= 1200 (estimate)	Fried food with fat.

175	14	206	$204+240+300+300+150+160=1354$	Exceeded recommended daily intake. Had ice cream bar
191	15	206	$240+200+400+300+400=1540$	2 glasses of wine ate Chinese food out.

Day 4 was a very unfortunate day in terms of discipline. I had 2 glasses of wine and some sugar free ice cream. The total amount of calories was in the 1500 range, one of the worst days in the entire diet. However, the sugar still showed some positive improvement, which really encouraged me. I concluded from this that very small portions of sugar did not damage the sugar control efforts, but judging by the weight result, my efforts for weight management are not successful with 1500 + calories in a day. The official charts and books, in my opinion, recommend way more calories than are really healthy. Especially if you are old and have weight and health problems already. This reinforced my belief that the 1000 calorie target I set was correct.

Day 5 was a much superior effort at the outset... I managed with a salad even though I ate out. This was quite an accomplishment. I also managed a net calorie count of 799, even though the holiday season offered many temptations like cookies, ice cream and other delicious items. This worked until about 5 pm- unfortunately after that I suffered a breakdown. I consumed wine, and sugar and sugar free ice cream. I was certain the impact would be bad as my deviation from the diet was large both in terms of calories and sugar content. It was a major holiday occasion.

Day 6 confirmed my suspicions of the bad effects of Day 5. The sugar ticked up 25 points and I lost ground that I gained. This failure convinced me of the correctness of the theory. So long as I confined myself to a careful diet and exercise, I could expect a consistent drop in my weight and sugar level. If I deviated with one excuse or another, it would make things worse and I would undo all the progress. The puzzling reading was that the weight dropped. Here I should note that even with a very accurate scale, there's some fluctuation in the weight reading. Even with weighing yourself without any clothes on and doing it at the same time, there are some fluctuations. I chalked this weight reading up to an anomalous data point and focused more on a trend with the weight. I avoided too much focus on daily weight numbers. The sugar reading was another issue. It was quite accurate I believe and really reflected my diet habits. I kept Day 6 strictly according to the book. There was plenty of exercise and absolutely no violations to the rules of the diet.

Day 7 rewarded me with the best sugar reading yet. The weight showed a small increase. The sugar reading was 181. So within a matter of 7 days, I was able to bring down the sugar from 246 to 181, using strictly dietary guidelines. That represented a 26.42% drop, which is quite significant. I took the measurement at roughly the same time every morning. I had a rather larger than planned for single meal on Day 7, but I did quite a bit of exercise as well. The net daily total calories exceeded my target.

Day 8 showed the lowest sugar reading yet- 166. This represented another 15 point drop. The disappointing news was on the weight loss front, where basically I was at the weight where I started. This once again seemed clear proof that the 1000 calorie target was correct, but I was having immense struggles meeting it. Every time I went over into more than 1000 calories consumed, I would stay level in the weight

department at best. In my view, this just reinforces the fact that the standard consumption charts for calories really don't apply to older people with diabetes and other health problems.

From Day 9 to Day 15 I experienced a plateau effect. My sugar readings and weight readings were leveling off. This is a familiar pattern for dieters. At this point, I tended to give up on the diet- you get the mentality that no matter how hard you try, there's no further progress. So I set stricter guidelines hoping for more progress, and also added a good dose of regular exercise for the next phase. I tried to conform to the 30% rule (burn off 30% of the calories consumed).

Table 3 Results from the Day 16 to Day 30

Milligrams per Deciliter (sugar reading)	Day	Weight (pounds)	Calories consumed(+) – calories exercised(-)	Violations to diet
200	16	206	$360-20-20+200+200-80+200=860$	Rice and butter consumed. Both bad for sugar readings. But calorie count kept low
186	17	206	$204-68+100+500-20+400= 1116$	<i>Large lunch, but healthy items. Avoided fried food.</i>
184	18	206	$204+200-120+160-48+160+220+220-10$	
167	19	205	$204+200+200+160+180-200$	
204	20	205	$204+100+100+200+500$	
176	21	207	1200	
188	22	205	1000	
206	23	204	900	

None of the books I read mentioned that a person my height would need only 800-1100 calories to maintain weight, but yet here is exactly what I found based on a considerable amount of data. It was something I had suspected for quite a while and writing down the numbers over a 23 day span just proved it. It leads me to believe that for people who are over 50 and diabetic, the normal calorie estimates are just way too high. You should go through a process like I did and figure out the right number for yourself. My situation is also affected by my low thyroid affliction, which does contribute to the need for lower calories. However, I still believe the standard number of calories is just too many for most diabetics, who are overweight or obese.

The jury is still out on the long term sustainability of this diet, but I have to say it's the only one that has worked for me. I believe the principles here have general applicability and if I keep up the regimen, I am totally confident that I can easily drop about 30 pounds and make a serious dent in my diabetes and other health problems. Especially if I can add regular exercise as part of my life. This has been by far the most successful diet I have ever been on. I no longer feel any need to consume fatty, salty or sweet food and when I do consume them, I'm in total control of the quantity.

I'm going to keep recording results for another 6 months to figure out the long term sustainability of the diet and hope to publish them in another book .

Notes to the 3rd edition for Chapter 10.

I wrote the 1st edition in March , 2011. In June 2011, a very interesting study came from a British neurologist that indicated that you can starve diabetes and cure it in 6 weeks. He used a methodology of restricting individuals to 600 calories a day- which lines up with my observation that I felt great after keeping to 600 calories per day.

There is also some older research that starvation is good for diabetics. There is a discussion of starvation and diabetes at this site:

<http://www.livestrong.com/article/348931-starvation-and-diabetes/>

The results of the remarkable study in England can be found in this article:

<http://www.guardian.co.uk/society/2011/jun/24/low-calorie-diet-hope-cure-diabetes>

Chapter 11

Star Trek and the Reboot

“Nobody could have imagined the phenomenon that ‘Star Trek’ became. It’s still almost impossible to imagine.”
William Shatner

I am a lifelong fan of Star Trek. I was delighted with JJ Abrams recent reboot of the franchise. There is a whole new landscape to portray Star Trek on. The acting was dead on, and it was almost as if the replacement actors were channeling the originals.

The question is what’s the next best move? As of the time of this writing (Dec 19th, 2010), there has only been one movie and there’s a chance to set a new, more textured, sophisticated direction for the franchise. Most of the movies have been good guy vs. bad guy, even the nearly universally admired Wrath of Khan. Is there some scope for achieving a higher plane, as in Star Trek IV, “The Voyage Home” (yes, the one with the whales)?

I think so. Star Trek is best when tacking contemporary issues. So the best bet here I believe is to does an allegory of the BP oil disaster? Have the Federation be responsible for a fairly major disaster in space that affects a cluster of alien species. The alien species react differently- some develop long term anti-Federation sentiments, other work with the Federation. This would be an excellent explanation for the shape of the new galaxy and the formation of alliances and power centers. It would be a logical flow, instead of just irrational bad folks who hate the Federation for no reason.

This allows the opportunity to show our heroes in the role of peaceful diplomats as well as combat soldiers. Most of the movies have not demonstrated this flexibility. For the most part, the movies consist of good guys versus bad guys with the good guys prevailing. It’s time for something new.

Just to spice up the story a little, there could be a self-absorbed idiot in charge of the Federation Company that caused the disaster – I’m sure you get the reference here. Plus you could add in a nitwit Federation President who is politically motivated and not living up to the best ideals of the Federation.

All this being said, I don’t think you can have a major sci-fi picture without a tantalizing baddie villain. I suggest the devious and brutal Cardassians shape up to be the primary villains in the alternate timeline. They made excellent villains in the series Deep Space 9. Only hard core Star Trek fans are aware of that reference, so for new audiences it would be just like the introduction of a fresh villain. The old timers would get a nod in the process.

This would elevate the franchise to a loftier level in terms of philosophy. Audiences around the world are ready for this level of nuance. Witness the remake of “Battlestar Galactica”, which was just superb and had so many levels of entertainment in it.

Vulcans would be excellent delegates to the affected alien races in the disaster, in view of how their history is shaping up in the new universe. There could easily be some moving personal stories inserted along the way in the story.

The best part of this type of story is that you can satisfy the action thrill junkies and also the people looking for a deeper story and moral. Star Trek is best when it manages to do both these things at once. Maybe this type of story would not fly well for a movie, but it would make a great background story for a new TV series. Setting this as the background could lead to a lot of stories with themes with contemporary resonance. That’s the way the original series presented stories.

Another idea I have is to do a remake of the TOS episode “Whom Gods Destroy”. This episode featured a starship Captain gone mad. While the theme is repeated quite a few times in Star Trek, the unique feature here is that he is insane and also curable. That I think would make a great story on a number of fronts, because it would elevate the movie above the standard shoot-the-bad-guy theme. The final resolution could be in fact a subdued Garth (the demented Captain) being administered a cure. This is a departure from standard action flicks where the bad guy just gets blown away at the end. It might be refreshingly original.

Also, the fact that Garth is one of the Federations own would make it much more debatable about how to cope with him. Our heroic crew would be taken into new territory. There could even be a lot of debate aboard the Enterprise about how to cope with this unique renegade.

Lots of action will be there of course as the demented Garth strikes out with a ragtag group of aliens he picks up to support him. His knowledge of Federation battle tactics plus his dementia would make him a most formidable opponent. New alien races that are supporting him could be introduced without the cheesy makeup in the old series. I also like the fact that Dr. McCoy would have a more pivotal role, one of the few weaknesses of the new movie.

Discuss and enjoy!

Notes to the 3rd edition for Chapter 11

As of April 20, 2012 , the rumor is that the villain will be a Klingon. There is very little likelihood the crew of our favorite startship will cure any Klingons medically. Alas, I think we are due for yet another irredeemably evil villain who will be killed off in the end.

I still believe my “Captain Garth like” villain would represent an evolution of the Star Trek villain and may pave the way for other big blockbusters that follow.

Chapter 12

Thoughts about Laptops

“I work on a laptop specifically so I can work in cafes and pretend I’m part of the human world”
Jonathan Lethem

Being in the IT industry, I need laptops for my work. I have what seems like the worst luck with laptops. They end up damaged for one reason or another. When my son was younger, he would rip the keys off. That obviously posed some challenges.

I have had problems with total dysfunctionality, disk failure, power failures (laptop dies and does not respond at all when you try to power it up), motherboard failures, and a host of other failures I can’t even remember. Part of it must be that I’m just travelling with them constantly, but I think some of it is just bad luck.

These experiences led me to thinking about how to build a totally redundant laptop. It’s not a new concept. Total redundancy for components for larger servers is commonplace. You have redundant power supplies, fans, and other hardware components. The idea is to extend this type of redundancy to laptops.

What’s the need? My experiences are probably not unique, although an extreme case. And I know every time a laptop breaks down there’s enormous angst and rebuilding time. Especially for those like me in the IT field, or high powered executives, a laptop becomes a mission critical piece of equipment. So we should apply the same high availability rules for them as you would for high end UNIX servers.

Where’s the market? I believe there will be a sizable market for this. I know I would pay extra for the redundancy. For the amount I have spent going through different laptops, I could have paid 2 times the price and it would still have been worth it.

What do I mean by redundancy? I mean the laptop components are all duplicated. With the size of laptops being what they are at the mini end you could stack all the components side by side. For the larger ones, they could be stacked on top of each other. All the key components would be identical. There would be an interconnect between the two to conduct traffic. Anything installed on the first stack would be duplicated onto the hard drive of the second stack.

Whenever an application processes something, its’ passed through both stacks and duplicate writes are done wherever necessary. If a component in the top half fails, it automatically routes to use the component in the second half. Let’s say for example, the memory board failed. Then the hardware would be smart enough to switch over to using the second half’s memory board. Similarly, if the CPU failed, it would make use of the alternate CPU. There are multiple CPUs on a lot of laptops these days, so you would

account for that as well. In case of a major failure, like a mother board, the top half would shut down and the bottom half would kick in.

I don't think any of this is very difficult with today's technology. Similar schemes are already used for high end servers; with the cluster interconnect doing a lot of health monitoring. Moving this sort of technology to the laptop would have a niche market of power users who rely on their laptops for their livelihood. Or CEOs' and other folks who just have extremely critical information on their laptops. I don't think that the cost would be prohibitive. Even if you double the cost, laptops are sufficiently cheap today that a redundant laptop would be economical.

Whenever a backup component kicks in, there would be a console alert that a component has failed. The user can then instigate a full backup of the system and take the laptop in at their convenience for a suitable fix. In the meantime, you have no data loss and no impact to your business. Valuable documents are protected automatically.

With the advent of smart phones, tablets and other competitors, a larger proportion of laptops are being used only by power users that really need data protection and redundancy. This is yet another compelling argument for the development of my super redundant laptop.

Discuss and enjoy!

Chapter 13

Thoughts about Space Exploration

“In my own view, the important achievement of Apollo was a demonstration that humanity is not forever chained to this planet, and our visions go rather further than that, and our opportunities are unlimited.” Neil Armstrong, press conference, 1969

It’s hard to describe the enthusiasm that I felt when I first saw images of man landing on the moon on a black and white TV in Canada. It just seemed like magic. It captured the imagination of the world, and it also played a part in stoking my interest in science and technology. NASA was king then.

Now NASA is in the doldrums. Public interest in space exploration has waned. Nothing is exciting people the way the prospect of putting a man on the moon did. The mission to Mars has all sorts of potential technical pitfalls. Overall, not a happy state for the space program.

I think it’s time to introduce a new plan to explore further into space. We should treat space exploration as a gradual infrastructure project that we build up. Rather than isolated events like landing a man on Mars or anything like that. A journey of a thousand miles begins with a single step, as the old saying goes.

I like comparing space exploration to the Interstate system in the United States. As much as we all complain about the Interstate highway system, it was a well-engineered project, especially considering when it was started. What we are trying to do now is to build a highway from coast to coast without any sort of incremental approach. We would be much better off dividing the job into smaller projects, funding them accordingly, and building enthusiasm amongst people for the infrastructure being built.

In hard economic times, it’s hard to whip up enthusiasm for any space projects. The first order of business, it seems to me, is to get people excited about space again. After that, eventually, funding will arrive for projects.

I think the secret to success for this is virtual reality technology. It’s amazing how far this has progressed over the past 20 years. NASA should put a space station up into space whose sole purpose is to allow any old Joe (like me say), to get a virtual reality feed into their living room. It would be even better if the existing space station could be outfitted to provide this service. That would be really cost effective. Naturally, you have to pay for something like this. Say \$10,000 per day or something like that. That’s \$3.65 million per year (at least, because you could do multiple feeds at once) and I don’t think you will have much trouble getting takers. Especially if you split it up into smaller denominations for a 3 hour period, for example.

Just imagine this. Like you can get NetFlix, Amazon or other video services, you have one that says ‘Space station Alpha One’. As soon as you pony up the dollars and you push the button, your living room

turns into the inside of the space station and you get magnificent views of Earth. It could be just on your TV to start with, but to be really effective it should really turn a dedicated room with specially outfitted CCD cameras into a virtual space station. Anyone who got something like this setup in their homes would invite their neighbors over for a view of course. You would get to virtually manipulate controls (within reason, with supervision from astronauts/cosmonauts). Consequently, there's a natural multiplying factor in terms of spreading the interest. I hear the rich already have virtual reality rooms for golfing and other activities in their mansions. This would be kind of a natural extension. You should be able to operate your seat in the space station and perform some simple maneuvers that have no impact on the functionality of the station. Perhaps like just a simple extension and retraction of a robot arm. It should be like you are there for 3 hours. I don't think that's beyond the reach of our current technology. The cost might be too high for the ordinary guy at the outset, but as the technology spread it would become cheaper.

This is sort of like travelling in space for the ordinary man. I'm not sure how expensive it would be to do something like this, but the ripple effect it would have for getting kids and others interested in space exploration would be enormous and could last generations. In the long run, something like this would make NASA an exciting place again to follow for everyone.

A venture like this is much cheaper than projects like building a base on the moon, or sending a man to Mars. And it would do way more to promote a general sense of enjoyment about space travel again. There's a lot of technology here to develop, but I can't believe it is more complex than sending a man to Mars, for example. And it would be better use of the developed technology, because it has immediate practical use for the general population. Technology like this would have great use in remote teaching of classes, or remote medical diagnoses.

Another result of a project like this is that you would raise enough interest and money to start projects like building a base on the moon. There you would repeat the successful formula. Have a "hotel on the moon" where you do virtual renting of the moon rooms. You could also have people participating in the building of the base itself, by virtually operating or viewing the operation of robots. Again, the technology has to be really good and leave people with the feeling that they were really on the moon watching or participating. Otherwise, no one will spend their money.

The final question is, can you scale this up to the rest of the solar system and create enthusiasm for broader space exploration? I think the answer is yes- instead of focusing on a single man landing on Mars, which has little broad public appeal at this time, focus your efforts on robotic builds of space stations in space and in orbit around the planets. You could prototype the procedure by having robots build a space station near the moon base, say at a distance of around 500,000 miles away.. I think it is feasible if not now, in the very near future. Once again virtual reality technology could allow for the general public to be part of the project. Even if you can't physically go, the virtual room rental would be a satisfying experience for you. And you can also physically rent out rooms to the public and send them out there to stay for prolonged periods of times. The ½ million mile distance is a range that is very similar to one that has been accomplished already. It's important when you are building out infrastructure that you do it to appropriate scale. Trying to go from the moon (a distance in the range of 250,000 miles) and then attempting to send a person to Mars (a distance in the range of 37 million miles) seems like too big a leap. Gradually building out space stations between the two seems like a much more constructive and feasible approach, especially for manned space travel. Manned space travel has an extra premium on safety for obvious reasons. It seems like what we are trying to do is to build a cross country Interstate highway, with no way stations or rest stops in between. It probably makes more sense to take a gradual approach.

For the next phase of the infrastructure build out, you increase the scale and double or quadruple the distance. So the next space station/hotel would be located somewhere between 1 and 2 million miles from the moon. Each build out phase will result in a dramatic increase in knowledge of both the engineering involved and any potential issues from any other angle (such as feasibility for transporting people, biological reactions to prolonged space travel, etc.). Eventually, you will end up with a station around orbit in Mars, and you could have common interplanetary travel. By this time, the state of technical advances would be such that the next deployment could be directly to the orbits of all planets in our solar system.

At that point, shuttles could take you into the tropospheres of the planets, which is a much more feasible project than any landings. You would still capture much of the glory and beauty of outer space travel. Once done with the tour, you would come back and dock back with the space station. One must also remember that actual landings on the gas giants are not really feasible anyway. The hotel –in-orbit is a plan that will work for any planet. Sections of the space station should be reserved for scientific personnel so they can carry out research projects.

Note that the gradual build out satisfies everyone. Scientists will gain huge knowledge from experiments in space. Engineers, who love to build in phases, will see their desires met. The well to do, who can afford to be the first ones in space because of their superior affordability, will use their money and get out there. This will help NASA out financially. The ordinary person, who can't afford to directly be part of the exploration (initially), will enjoy his/her virtual reality experience and develop enthusiasm for space projects. Eventually, economies of scale will take hold and interplanetary travel will become common place.

Schemes like this contribute to the financial wellbeing of NASA as well as space exploration in general. You may even get some private companies involved in plans of this nature, if they see potential for profit. At first only the extremely wealthy could afford actual travel to the moon and beyond, but with more use, economies of scale would make it more affordable for the regular guy as well. Also, the virtual reality creation plan would encourage ordinary people to take part. There are plenty of millionaires in the United States to prime the pump for the rest of us.

Discuss and enjoy!

Chapter 14

Thoughts on the stock market

“If stock market experts were so expert, they would be buying stock, not selling advice.” Norman Augustine

I have dabbled in the U.S stock market for many years. I have had my share of losses and gains over the years. One of the conclusions that I have come to is that it is very foolhardy to try and make any short term predictions in the market. It is a sure path to ruin. Even long term predictions for individual stocks are very difficult. My systematic investments are in mutual funds. Index funds will work over the long run as well.

So the mindless and easy way to be wealthy in the United States (and probably wherever else there is scope to do so) is to start young and just automatically invest \$200 or so into some index funds or mutual funds. I’m advising my son to do this. You don’t want to focus your life on earning money – on the other hand, not having any is definitely a nuisance and you want to be comfortable.

One of the greatest inventions is the ability to invest automatically by deducting from your bank account. It becomes really easy to do and you don’t even think about where the money is going.

Despite all these disciplined measures, there is a real allure to the stock market. Perhaps it is the hope that you can hit it really big. It appeals to the gamblers instinct that everyone has. I still look around for stocks that are so beaten down that there’s great growth potential. It’s the only leverage that ordinary investors like me have. The only other good leveraged investment, real estate, is in a precarious state at the time of this writing (December , 2010).

Anyway, I’m not trying to sell you on stocks, mutual funds or real estate. What I have noticed is that over the years, it seems to me the broader stock market does have a pattern. It’s hard to tell, and it’s not a completely intuitive cycle. If you expand the Dow Jones out to the maximum chart capability it looks like it does have a pattern of sorts. You can find this type of chart for the Dow Jones on any finance web site nowadays.

Looking at charts like this, I could swear the Dow follows some sort of a polynomial fit. The curve doesn’t look so irregular to me that you couldn’t possibly fit it to some sort of polynomial. It could be my imagination, but it is easy enough to test I believe. All you need is a supercomputer, and some data points .

We can pick each days Dow value as a data point for the past 40 years. This would give you 14600 data points. You can now try a fit to a polynomial to the nth power where n is 14600. You want to alternate pluses and minuses for the various powers to introduce some variation. Just looking at the

curve, you can't just rely on positive powers. This would give you and 14600x14600 matrixes to solve. I don't know if supercomputers today can readily solve a matrix of this size. If they can't we can just reduce the number of data points by using every other days value, for example. That would reduce it to a 7300 by 7300 matrix. You need to just tune the data points gathered to a manageable size for a solution by a supercomputer in a reasonable amount of time.

This is a brute force technique to see if you can get a predictable curve for the Dow Jones. The irony is that if it works, and it gets published widely, it will not work anymore because people's buying habits would change due to the knowledge. So if you run this test and figure out the equation that works, your best bet is to tell no one and make your purchases on that basis. I wouldn't mind if you shared it with me, of course .

You could run equations like this on an individual stock basis as well. It seems to me some stocks are just cyclical. Obviously, you have to pick the right type of stocks and a sufficiently long period (say a 20 year minimum) , for this to work. If they fit a curve of some sort that extends over years, you could make a bundle by just buying at the right point in the curve. I know there are guys looking at technical indicators for stocks with curves and shapes (I have seen references to tea cup handles and other exotic shapes in technical stock analysis), but the polynomial calculation method to me seems like a better bet. It sure seems to the naked eye like a good fit ought to be possible. From years of looking at online transaction processing systems and fitting traffic patterns to polynomial equations, I have developed a good intuition for which curves are good candidates and which are not. It seems to me that the overall Dow Index and some individual cyclical stocks are good candidates to attempt a good curve fit.

The final point is that the curve fit doesn't really need to be exact, although I have implied that with my brute force calculation methods. Even if you get an approximate fit that indicates general trends, you can make out like a bandit in the stock market. So if the fit turns out to be an approximate polynomial to the order of 4 but not an exact one, you should still be able to profit from the knowledge (after you do the right thing and share it with me for suggesting the direction to go in).

Discuss and enjoy!

Chapter 15

Automatic Inform Systems for IT workers

“Good management is the art of making problems so interesting and their solutions so constructive that everyone wants to get to work and deal with them.” Paul Hawken

I have been working in the IT field for many years now. It is a grueling field, where you end up working weekends, and odd hours. It requires a lot of concentration and it's very hard to concentrate when you are being interrupted.

A typical scenario is like this. You have to work a number of tasks at once, because you can only make changes in very tight windows, called maintenance windows. Something goes wrong. You start getting called by various people wondering why the problems are not fixed. The people calling you don't realize that the very act of calling you is severely hampering the troubleshooting efforts.

It's hard to explain this to managers for the most part. The best managers understand it and leave you alone. When there is an explanation called for, they run interference for you and let you concentrate on the problem at hand. Unfortunately, the ratio of good to poor managers is very low.

All this leaves a golden opportunity for a nice piece of application software development. What you need is a system with a nice GUI interface that's called the “Manager Notification System”. As soon as you start working on a really strenuous technical problem, you kick off this system. This is meant for rank and file technical workers, not the type of alert systems you see where something goes wrong and a whole slew of people get notified. This is meant for the hard core techie.

The system should have options like number of people to automatically text. You can plug in all the managers SMS addresses in these fields. Another option should be messages sent. It should be able to generate its' own plausible messages like “Still working on it, making progress” or “May need to contact vendors next level of support”. The messages should be varied considerably at each texting interval so that it looks like you are sending the message manually. The texting interval should also be configurable.

So as you are sitting their focused on solving problems, this system sends out periodic messages to all the managers. Once you are done, you can shut it off and all of the people you report to are satisfied because they have been kept in the loop.

I hacked together something like this a few years back because I could no longer tolerate the notification requirements. It was too hard to explain to people why stopping to notify others about your progress almost killed troubleshooting efforts. Either the manager was a hard core techie and understood it instinctively, or they did not. There was really no one in between. I had a simple configuration file and some randomly

generated messages. So I don't think it would be hard to do, and put together an excellent presentation layer using a Java type program.

A real spiffy program would be very sophisticated and put the right messages in for the specific type of platform or device. It would put in the right network, database, system or application type message that seems plausible. That would eliminate unwanted inquiries from a vast majority of obnoxious managers.

Discuss and enjoy!

Chapter 16

Hikers who hurt themselves

“My father considered a walk among the mountains as the equivalent of churchgoing.” Aldous Huxley

I suffered a serious injury to both ankles three years back. It was right in the middle of a very stressful time at work as well, where I was working on a major project. It happened at Chimney Rock, MD. As I jumped onto the lower rock as soon as I landed the pain was severe, and I knew fairly quickly that I had done some serious damage.

My wife and some friends were with me, as was my son. Luckily, my cell phone was working and I called 911. I was eventually shipped to a shock and trauma center in Baltimore via helicopter. Being flown in a helicopter while attached to one of the carriers was a terrifying experience, and it was also very cold at the time, so I was afraid of hypothermia. My thanks to all the brave folks that helped me that day and got me to safety. Also to the doctors who performed surgery and repaired my ankles. As a result, my ankles now have quite a few pins and screws in them.

This prompted me to think about what would happen if the cell phone had not worked, for example. Since I could not walk, and my wife carrying me down the hill would be out of the question, it would have been very tough. The light was fading, so it would have meant her leaving me alone in the dark and seeking help after climbing down the mountain.

Native Americans had a solution for dragging goods over land called a travois. I think a modern version of this could be used for simple rescues for hikers. What you need is a sled – it should be very light and made of extremely tough material. That way it could be dragged over even rough terrain. With the number of light hard materials available today it should not be too hard to design something like this.

In my case, my wife could have assembled this sled, let’s call it “hikers sled” and I could have maneuvered onto it with my hands. Then you tie a rope to attach to the sled and you drag the injured person down the mountain. I can imagine a simple device like this could save quite a few lives.

Anyone hiking with more than one person could make use of the hikers sled, especially those that try the more dangerous and adventurous hikes. There could also be situations where someone suffers a bear attack or something and they can’t move. I know you are not supposed to move people in situations like this, but if the circumstances are dire and you need to get them to a hospital, the risk of just getting them onto the sled might be worth it. Once on the sled, the ride would not be too disturbing, depending on the terrain, of course.

The simultaneous requirements that the sled be lightweight and tough might initially make it a fairly expensive proposition. But the price would come down as more and more people saw the value in it. It's good to be prepared in the outdoors.

As a result of my misadventures, I have become far more cautious in the hikes I tackle. My wife, however, feels no such inhibitions. The tougher the hike, the better. The steeper the rocks, the more of a thrill she gets out of it. So I worry about her and my son a lot, because she encourages him to take similar risks in hikes. I always imagine the worst when we are out on some of our tougher hikes- probably because of my traumatic accident.

A hiker's sled is the answer, I think .

Discuss and enjoy!

Chapter 17

How to improve dishwashers

“I expect to see a lot of household appliances on the Net by 2010, as well as autos and other mobile devices.”
Vinton Cerf

It's past 2010 and my dishwasher is still not on the Net, although most new cars are on the Net. And I hear from a number of people how they have to struggle with loading up the dishwasher on the lower rack. It places a fair amount of stress on the back, if you are unfortunate enough to have back problems. Or if you are getting really old and it is a stretch to bend down quite a bit.

For some time I had back problems after my accident hiking, so I can really sympathize with the people that have these types of problems. I think there is an opportunity here to improve the life of these people.

My idea for improving the dishwasher loading process is straightforward and does not require much waste of energy or fancy technology. The first step is to have a hinge on the counter above the dishwasher section. This hinge should be opened when the dishwasher needs loading.

The second step is to have lifts for the racks. Since the racks are not too heavy, this should not require too much energy. With the top of the counter lifted off, the racks elevate themselves to counter level and then move horizontally onto the counters. This would of course require enough counter space to accommodate two racks on the counter. I don't think that's a challenge in most modern homes.

Depending on the geometry of the counters, the top and bottom racks could then be moved onto the counter to the right of the dishwasher. Alternatively, you may have to move one to the right and one to the left. Or both to the left. It all depends on what portion of the counter your dishwasher is stacked in. For my kitchen, for example, the right configuration would be to move the top rack to the right and the bottom rack to the left. That's because our dishwasher is located centrally in the counter space next to the sink.

Once the racks are on top, it's much easier to load them with no stress on your back. Once the job is complete, you roll the racks back onto the lifting mechanism, which now works in reverse and gently lowers the bottom rack to the bottom of the dishwasher. The top rack is lowered down to the top rack of the dishwasher.

This type of technology is trivial to implement and would require very few modifications to the modern kitchen. I think many people with back difficulties would appreciate this effort.

Discuss and enjoy!

Chapter 18

Japan, the tsunami and nuclear reactor safety

“Environmentalists have long been fond of saying that the sun is the only safe nuclear reactor, situated as it is some ninety-three million miles away” Stephanie Mills

It has been about a year since the massive tsunami hit Japan . This disaster had many tragic consequences, one of them being that several nuclear reactors suffered what are called “melt through” conditions. To prevent a complete disaster, several workers were asked to enter the plants despite extremely high radiation levels. I have been thinking about this situation and I think there are some relatively direct approaches to protecting people and preventing dire radiation poisoning in these types of scenarios.

The nuclear reactors involved in the accident are “boiling water” reactors. About 2/3 of the reactor is filled with water. Below the water are uranium nuclear fuel rods. These generate heat which boils the water and creates steam. The steam is directed into a turbine , and this generates electricity. That’s the basic mechanism involved when all is normal.

When the tsunami struck , the Tokyo power company TEPCO lost power , and this result in no electricity. In that situation, there is no cooling of the reactor. Normally there’s a balance between the cooling of the reactor and the heat produced by the nuclear reaction. This balance is disrupted and the water simply boils off completely. The temperature then shoots up to 4000 degrees very quickly, melting off the coating of the rods. After that the radiation leaks through the metal containment- it melts through.

This melt through is actually even more dangerous than a meltdown. It’s inhumane to let this type of situation occur and then send in workers to try and remedy the situation. I think this is a classic situation for having a “dead man’s switch”- a fail safe mechanism that cuts in when a melt through is threatened.

There should be a large ring like container at the top of the reactor that is normally shielded just as the nuclear rods are with a substance like Zirconium. This will ensure that they won’t accidentally trip during normal operation. Inside the container , you have a chemical substance that will coat the bottom of the pill shaped container and act as a buffer to prevent the rods from melting through.

The chemical substance inside the container should be released either automatically at a certain temperature threshold, or manually when an operator decides a melt through is imminent or by a robot to spare having human beings enter the high radiation area. I think suitable candidates for the substance are : ordinary sand, dry cement ,or perhaps glass. Glass will liquefy around 3000 degrees, and it should form an extra coating for the stainless steel bottom.

The idea is that in case of an imminent melt through, the reactors “dead man’s switch” would be tripped and the substance would drop down and coat the bottom. When the rods start melting the substance would be an extra coat and prevent a melt through. I’m certain there is an ideal candidate for this type of substance that a chemist could suggest. This type of safety measure could fairly easily be retrofitted into existing reactors since you can add the ring to the top of the container and just put in some electronic switches for release. The switches should be designed for robotic access so that in a really bad situation you can send in a robot and engage the failsafe mechanism.

I’m sure everyone is familiar with the glass cases that display the message “ In case of emergency, break glass.” My suggested idea could have a message like “ In case of imminent nuclear melt through, break ring”.

Discuss and enjoy!

Conclusions and Afterthoughts (3rd edition)

“There are two motives for reading a book: one, that you enjoy it; the other, that you can boast about it.”
Bertrand Russell

In view of the fact that I am an unknown author, I hope you enjoyed the book, since you will have a very slim chance of boasting about reading the works of a novice like me. I had a lot of reactions from people who read early drafts and releases of my book. My idea about the space elevator (Chapter 1) was well received on the whole, but some readers wondered if I was trivializing the engineering challenge by ignoring such factors as high winds at high altitudes, dangers to air traffic from a structure up that high, lack of oxygen when you go high enough and other factors.

I did consider these factors, but my main focus was on the cable length because that is often cited as the limiting engineering factor. My point was that you don't have to constrain yourself this way. It doesn't mean the other challenges go away, but at least you tackle the primary one. In my view, there are solutions to the other challenges that will arise.

My ideas regarding thermostat control and tax incentives (Chapter 2), lead to some amusing reactions—the chief one being a lot of people promised they wouldn't show up at my house any time soon. The overall reaction was positive, but there were some notable exceptions, with one my friends calling it one of my dumber thoughts.

Modular cars that can save gas (Chapter 3) provoked a lot of interest. Quite a few folks questioned the engineering feasibility of this notion. However, most agreed with the merit of the idea. I still have not heard any definitive argument from someone intimately familiar with automotive engineering. I'm still exploring this idea with some mechanics.

The outfitting of cars with two gas tanks (Chapter 4) went over well. It was universally popular and no one really saw any problem with paying a little extra for this privilege. Tracking luggage using modern technology was equally popular (Chapter 5). Several people suggested that avoiding the aggravation of luggage problems was worth paying a few extra dollars.

Chapter 6 on chess was the most popular idea in the book. I expanded on the details of my ideas for new versions of chess in a revised version of the book and added a couple of appendices outlining rules for TrimChess (the 6x8 version) and rules for StrongChess (the 10x8 version). I also added a complete sample game for StrongChess and schematics for the three in one board.

Chapter 7 about changes to the game of hockey, really did not go over well with hockey fans. I also got reamed by one critic for referring to hockey as 'ice hockey'. Canadians take their hockey seriously – and none that I heard from cared for my idea.

Cat litter smell elimination with Bilko doors was extraordinarily popular. I was expecting some ribbing for this idea, but on the contrary, it seemed to be quite a hit. Every cat owner I heard from was quite enthusiastic about this conception (Chapter 8). Eliminating our collective debt burden (Chapter 9) through an automatic principle payment scheme was a hit. Many wondered why such a system was not already in place. There was a lot of cynicism about our government ever taking any action like this. There were some skeptics who felt I was oversimplifying matters, but a vast majority felt that the debt needed to be addressed by any means necessary.

Chapter 10 on treating food cravings as addictions and eliminating key components had mixed reactions. I stated fairly clearly in the chapter that I only expected this to work for a subset of people. Quite a few wondered if I was able to maintain the diet or did I abandon it out of boredom. I can assure the readers that I am sustaining the diet even now (approximately 6 months). I view myself as a reformed addict- I have no real cravings and I control what food I eat. The only problem I have is that I am unable on a consistent basis to restrict my calories daily. But the food I eat is all healthy and I feel 100% better.

There are a lot of Star Trek fans out there and I heard a lot of positive reactions to the reflections I presented in Chapter 11. As the pool of readers increases there may be mixed reactions. The notion of having a villain who is not just hopelessly evil seemed to strike some resonance with the readers. It confirms my belief that Star Trek fans are generally a kinder, gentler bunch. The totally redundant laptop presented in Chapter 12 left some people wondering if there was already a design like this in the works. There may be, but I have not seen it. Depending on how this is done, it might be twice as wide as a mini laptop, or twice as thick as a regular laptop.

My fanciful thoughts on space exploration (Chapter 13) were viewed as a very practical method of getting our population interested in NASA again. The only concerns I heard here were that I might have been assuming too much in terms of existing or near term technology capabilities.

The speculation presented in Chapter 14 for the stock market was received with quite a bit of skepticism. It turns out there is a surprisingly simple way of testing this out. Pick a good stock (one with a decent P/E ratio and EPS) and download historical quote data. This can be done from any decent finance web site nowadays. Download it into Excel and use the Excel built in functions for extrapolation. If you can't get a decent extrapolation, you can ignore this stock and move to a different one. I tried this on about 2 dozen stocks, and found you can get a simple linear extrapolation for a vast majority of them. Take a look at the projected extrapolated value for 5 years from now. That value is the value predicted by your trend line. If the stock is below the trend line, buy as much as you can. As soon as it rises above the trend line, sell. Don't get greedy and wait for a peak in the other direction above the trend line. I'm certain even this simple technique will get you some terrific gains. I'm testing this out by putting my money where my mouth is. I have a significant investment in a couple of stocks using this technique.

A lot of IT workers appreciated the views in Chapter 15. I suspect a very bright one will be producing a program shortly to do this, although it would certainly take some courage to author a program like this and face all your managers the next day. Other comments on this chapter were that these types of programs would have wide applicability in a number of fields, not just IT. I guess obnoxious managers are commonplace in quite a few industries. The hikers sled in Chapter 16 was viewed as a common sense idea. Many expressed surprise something of that nature was not already on the market. I found no evidence that there was anything like this on the market.

My thoughts on dishwashers with mobile racks were met enthusiastically. Some wondered about the extra power consumption involved for tasks like this. I did not necessarily have a powered approach in mind for raising the lower rack. A hand crank could be involved, for example.

Keep all the great feedback coming. All ideas are welcome!

Appendix 1

Rules for TrimChess (6 columns, 8 rows)

“Chess is something more than a game. It is an intellectual diversion which has certain artistic qualities and many scientific elements.” Jose Raul Capablanca, World Champion (widely regarded as one of the top 5 players ever).

1. PREFACE

The rules of TrimChess attempt to cover every situation on the board, but where there is doubt, a study of the rules and the spirit should be achievable. Any situation which cannot be resolved should be referred to the inventor of the game, the author.

2. BASIC RULES OF PLAY

There are two opponents in TrimChess who move alternately on a rectangular board which has 8 rows (ranks) and 6 columns (files). The board consists of white and black pieces. This initial position of the pieces will be described in the next section. The play alternates between the white player and the black player until the game is concluded. The game can end in a draw or with one or the other king checkmated. A player may also resign on his/her turn or offer a draw. A threefold repetition of positions automatically results in a draw. If neither player can possibly checkmate, the game is a draw.

3. Initial Position of the Pieces on the board.

A TrimChess game is played on a board consisting of 8 rows (ranks) and 6 columns (files). The squares alternate between light and dark. At the beginning of the game each player has 12 pieces. The white player has light colored pieces and the black player has dark colored pieces.

The structure of the board is as follows, with algebraic notation for the squares:

a8	b8	c8	d8	e8	f8
a7	b7	c7	d7	e7	f7
a6	b6	c6	d6	e6	f6
a5	b5	c5	d5	e5	f5
a4	b4	c4	d4	e4	f4
a3	b3	c3	d3	e3	f3
a2	b2	c2	d2	e2	f2
a1	b1	c1	d1	e1	f1

Diagram 11 – Algebraic Notation for TrimChess

The 6 vertical columns of squares are called files. The eight horizontal rows are called ranks. A straight line running from one edge of the board to an adjacent edge is called a diagonal. The files are designated from left to right as a, b, c, d, e, f, the ranks are labeled 1-8. The initial placement can be summarized as follows:

White: rook on a1, knight on b1, queen on c1, king on d1, bishop on e1 and rook on f1.

Pawns on a2, b2, c2, d2, e2 and f2.

Black: rook on a8, knight on b8, queen on c8, king on d8, bishop on e8 and rook on f8.

Pawns on a7, b7, c7, d7, e7 and f7.

The board with the initial placement of the pieces is shown in Diagram 4 in Chapter 6.

4. No square can be doubly occupied by pieces of the same color. If a piece captures a piece of the opposite color, the captured piece is removed. The bishop moves diagonally but cannot leap over any other piece. The rooks move vertically and horizontally on ranks and files but cannot jump over any existing piece. The queen can move along any diagonal and also vertically and horizontally. It too cannot jump over pieces. The knight moves in an “L” shape in any direction, and can jump over other pieces. These rules for TrimChess are identical to normal chess rules. The presence of the extra pieces adds a lot of complexity to the game and increases the number of possible moves considerably.
5. The pawn can move forward one spot vertically if the spot is unoccupied. On the first move it may move 2 spaces if the space is unoccupied. For captures, the pawn can move diagonally across one space. A pawn crossing two squares which crosses the opponents pawn on the way can be captured as if it only moved one space (en passant capture as in regular chess).
6. When a pawn reaches the eighth rank in the opposition territory, it can be exchanged for a bishop, knight, queen or rook (promotion as in regular chess).
7. The king can move to any adjoining square not attacked by an opponent’s piece or pieces. The king can also castle as shown in the diagrams below:

A. Position before White king side castle

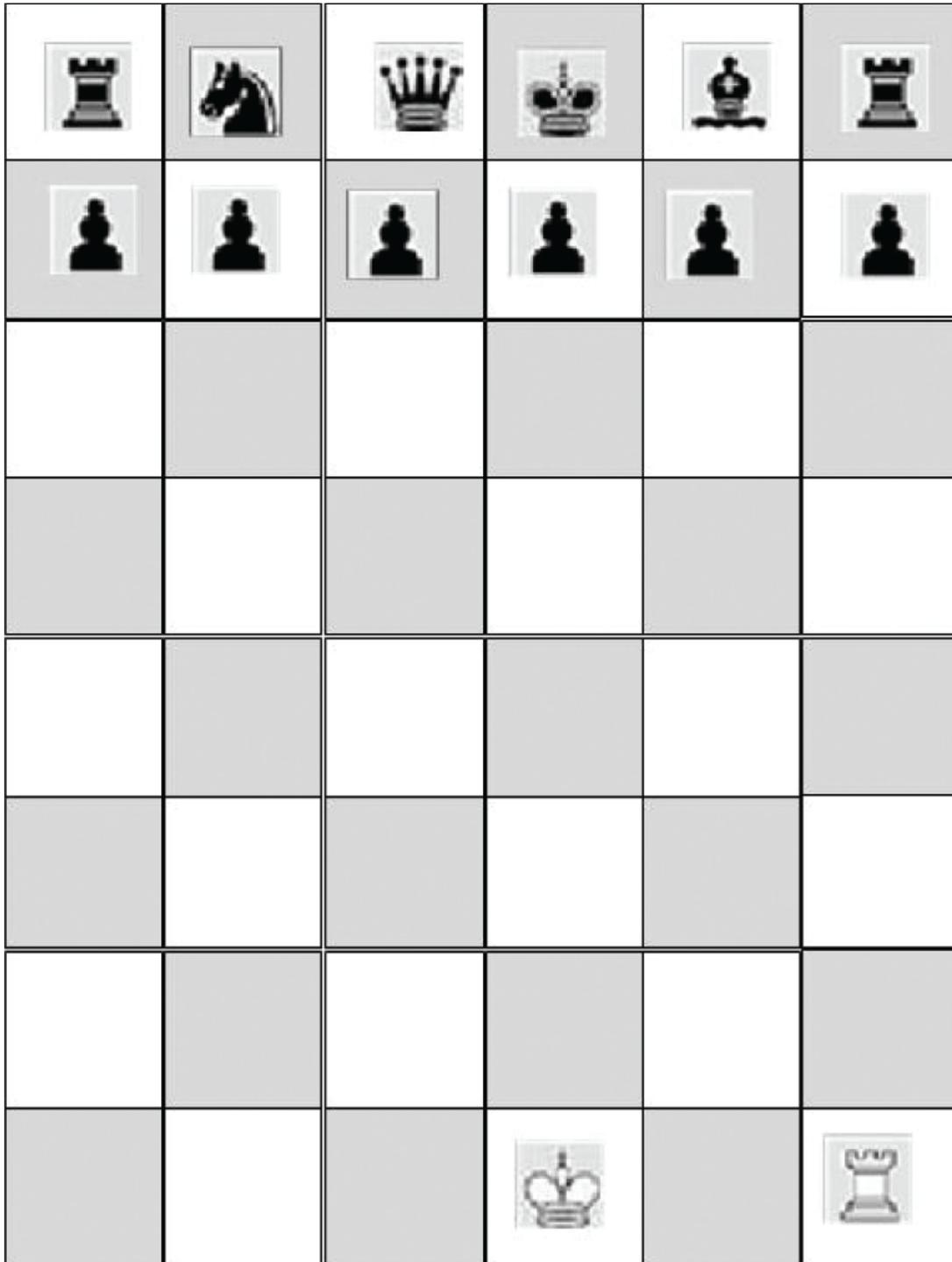


Diagram 12 – Position before White King Side Castle for TrimChess

B. Position after king side castle

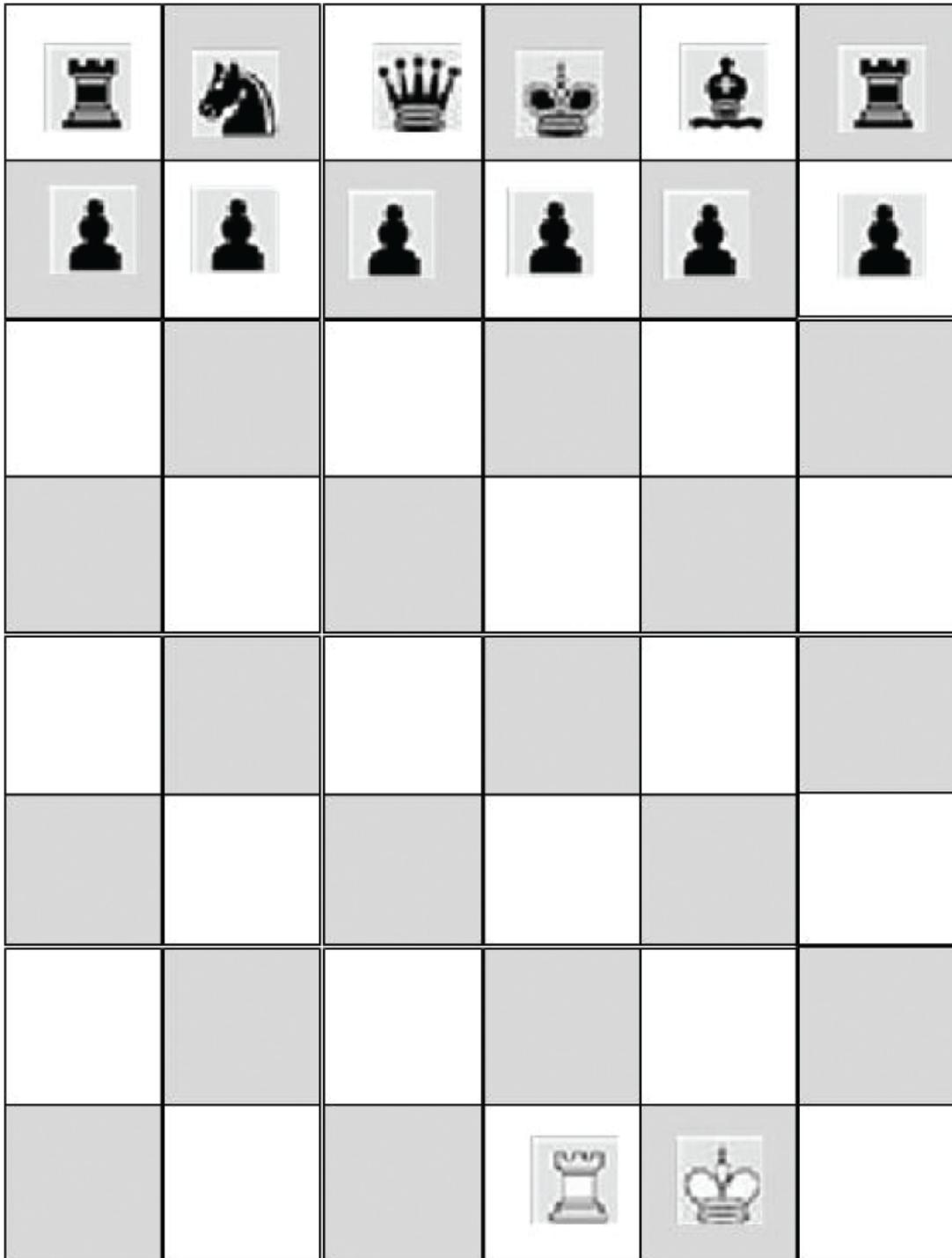


Diagram 13 – Position after White King Side Castle for TrimChess

C. Position before white queen side castle

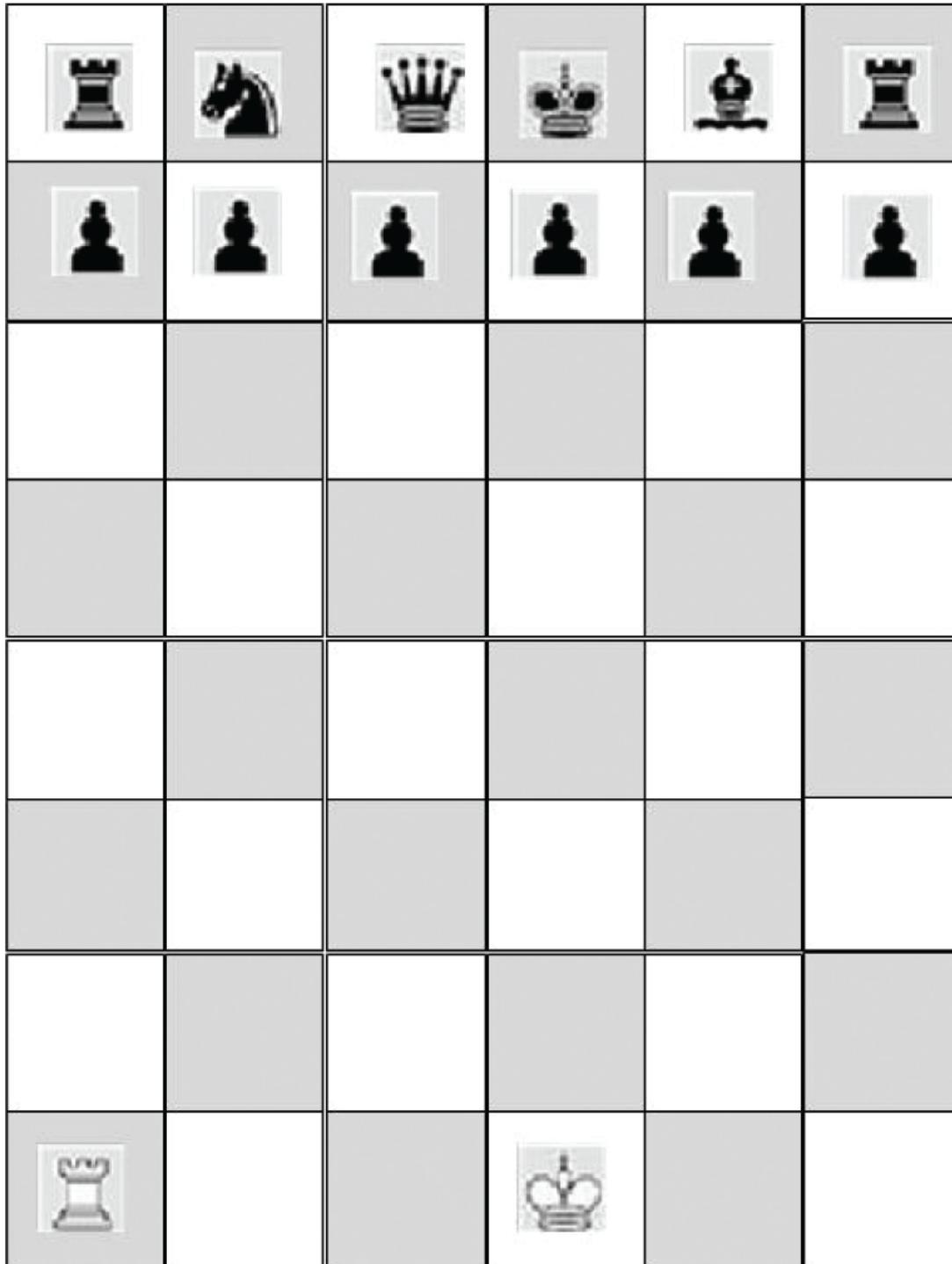


Diagram 14 – Position before White Queen Side Castle for TrimChess

D. Position after white queen side castle

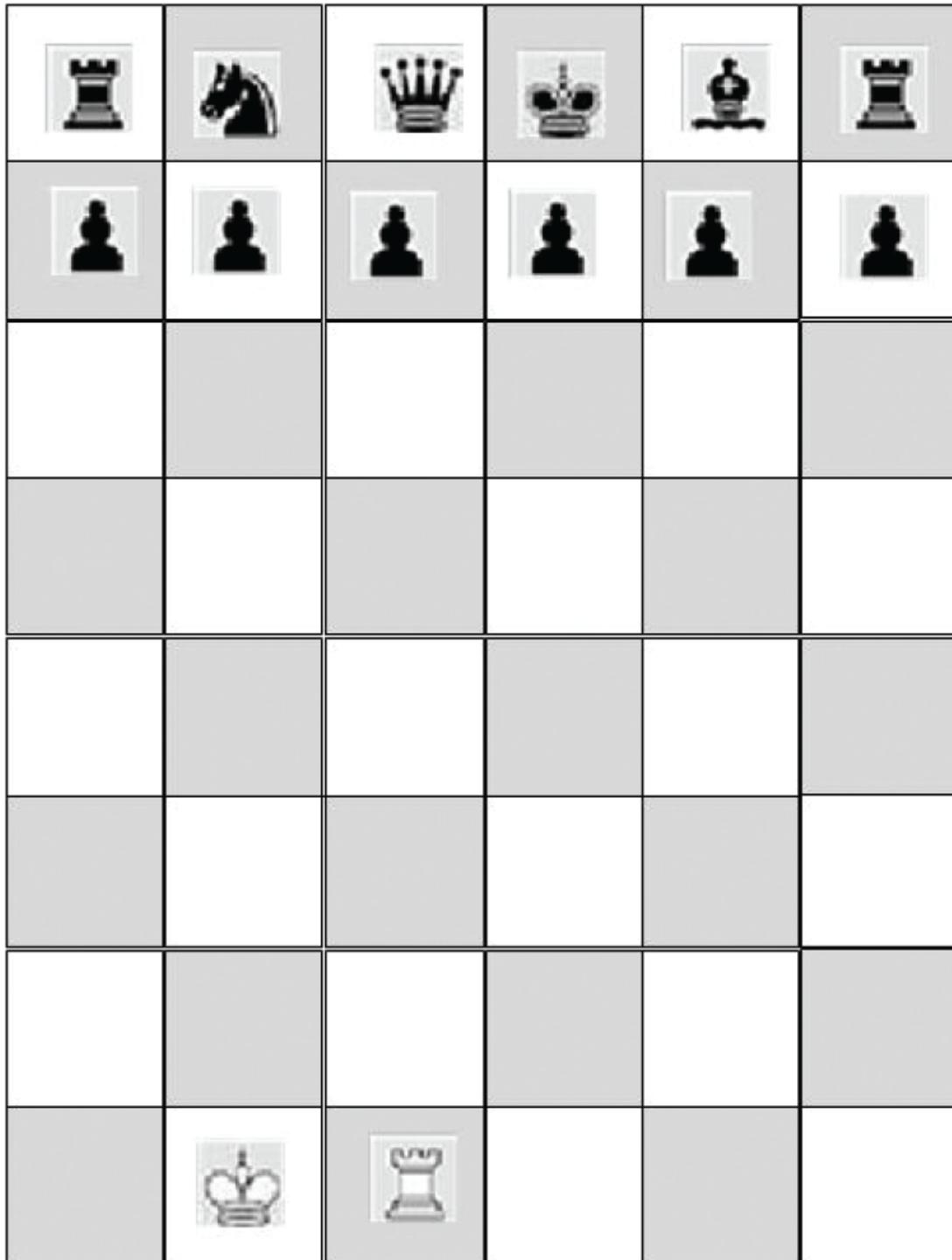


Diagram 15 – Position after White Queen Side Castle for TrimChess

Symmetric rules apply for black. This again is very similar to the standard chess rules. If either the king or the rook have already moved, castling cannot be done. Castling is prevented if the king has to cross through the scope of the opponents pieces and is in check. The line between the king and the rook must be clear to execute a castling maneuver.

8. The king is “in check” if an opposing player's piece attacks it. No piece can be moved that will expose the king of the same color to check or leave that king in check. This is the same as standard chess rules.
9. The remaining rules are all identical to standard chess rules in regards to checkmate, draws, resignations and stalemates. Wherever a rule is not explicitly stated, the rules from standard chess are meant to be applied to TrimChess.
10. Each move must be made with one hand only.
11. A player may adjust a piece if he/she expresses his/her intention of doing so. An example would be by announcing “I'm going to adjust”.
12. Except for clause 11, if the player having the move touches one or more of his/her own pieces he/she must move the first piece touched which can be moved.
13. Except for clause 11, if the player having the move touches one or more of the opponent's pieces, he/she must capture the first piece that can be captured.
14. All other rules are as in standard chess.

Appendix 2

Rules of StrongChess

“Of course, errors are not good for a chess game, but errors are unavoidable and in any case, a game without any errors, or as they say ‘flawless game’ is colorless.” Mikhail Tal, World Champion (widely regarded as one of the top tactical geniuses the game has ever seen).

1. PREFACE

The rules of StrongChess attempt to cover every situation on the board, but where there is doubt, a study of the rules and the spirit should be achievable. Any situation which cannot be resolved should be referred to the inventor of the game, the author.

2. BASIC RULES OF PLAY

There are two opponents in StrongChess who move alternately on a rectangular board which has 8 rows (ranks) and 10 columns (files). The board consists of white and black pieces. This initial position of the pieces will be described in the next section. The play alternates between the white player and the black player until the game is concluded. The game can end in a draw or with one or the other king checkmated. A player may also resign on his/her turn or offer a draw. A threefold repetition of positions automatically results in a draw. If neither player can possibly checkmate, the game is a draw.

3. Initial Position of the Pieces on the board.

A StrongChess game is played on a board consisting of 8 rows (ranks) and 10 columns (files). The squares alternate between light and dark. At the beginning of the game each player has 20 pieces. The white player has light colored pieces and the black player has dark colored pieces. These pieces are as follows for the white player:

The structure of the board is as follows, with algebraic notation for the squares:

a8	b8	c8	d8	e8	f8	g8	h8	i8	j8
a7	b7	c7	d7	e7	f7	g7	h7	i7	j7
a6	b6	c6	d6	e6	f6	g6	h6	i6	j6
a5	b5	c5	d5	e5	f5	g5	h5	i5	j5
a4	b4	c4	d4	e4	f4	g4	h4	i4	j4
a3	b3	c3	d3	e3	f3	g3	h3	i3	j3
a2	b2	c2	d2	e2	f2	g2	h2	i2	j2
a1	b1	c1	d1	e1	f1	g1	h1	i1	j1

Diagram 16 – Algebraic notation for StrongChess

The 10 vertical columns of squares are called files. The eight horizontal rows are called ranks. A straight line running from one edge of the board to an adjacent edge is called a diagonal. The files are designated from left to right as a,b,c,d,e,f,g,h,i,j, The ranks are labeled 1-8. The initial position can be summarized as follows:

White: rook on a1, knight on b1, knight on c1, bishop on d1, queen on e1, king on f1, bishop on g1, bishop on h1, knight on i1 and rook on j1.

Pawns on a2, b2, c2, d2, e2, f2, g2, h2, i2 and j2.

Black: rook on a8, knight on b8, knight on c8, bishop on d8, queen on e8, king on f8, bishop on g8, bishop on h8, knight on i8 and rook on j8.

Diagram 6 in Chapter 6 shows the initial placement of pieces for StrongChess.

- No square can be doubly occupied by pieces of the same color. If a piece captures a piece of the opposite color, the captured piece is removed. The bishop moves diagonally but cannot leap over any other piece. The rooks move vertically and horizontally on ranks and files but cannot jump over any existing piece. The queen can move along any diagonal and also vertically and horizontally. It too cannot jump over pieces. The knight moves in an “L” shape in any direction, and can jump over other pieces. These rules for StrongChess are identical to normal chess rules.

The presence of the extra pieces adds a lot of complexity to the game and increases the number of possible moves considerably.

5. The pawn can move forward one spot vertically if the spot is unoccupied. On the first move it may move 2 spaces if the space is unoccupied. For captures, the pawn can move diagonally across one space. A pawn crossing two squares which crosses the opponents pawn on the way can be captured as if it only moved one space (en passant capture as in regular chess).
6. When a pawn reaches the eighth rank in the opposition territory, it can be exchanged for a bishop, knight, queen or rook (promotion as in regular chess).
7. The king can move to any adjoining square not attacked by an opponent's piece or pieces. The king can also castle as shown in the diagrams below:

E. Position before White king side castle

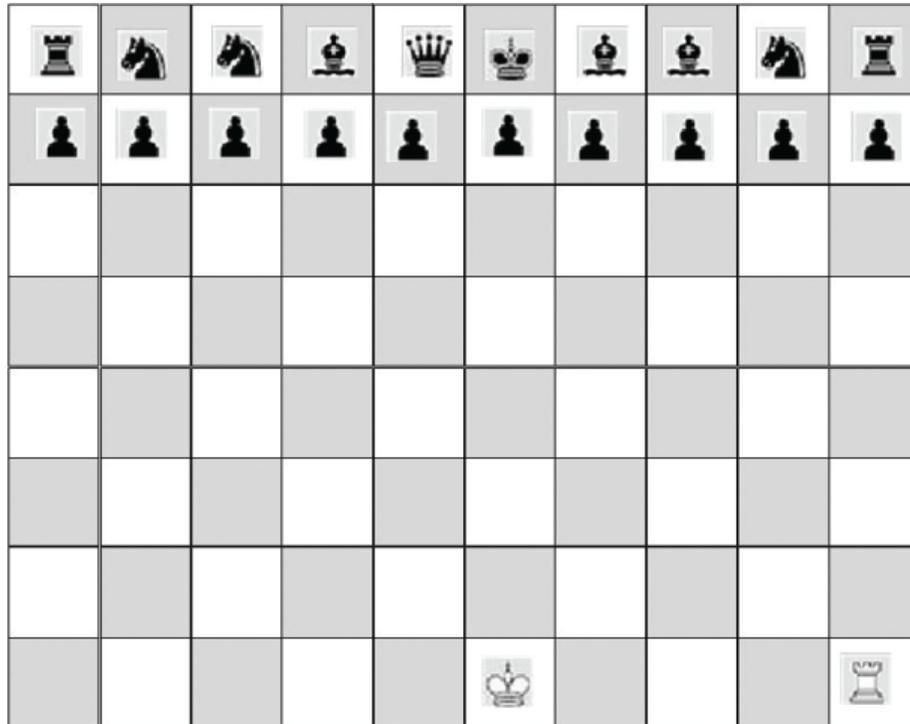


Diagram 17 – Position before White king side castle

F. Position after king side castle



Diagram 18 – Position after White king side castle

G. Position before white queen side castle

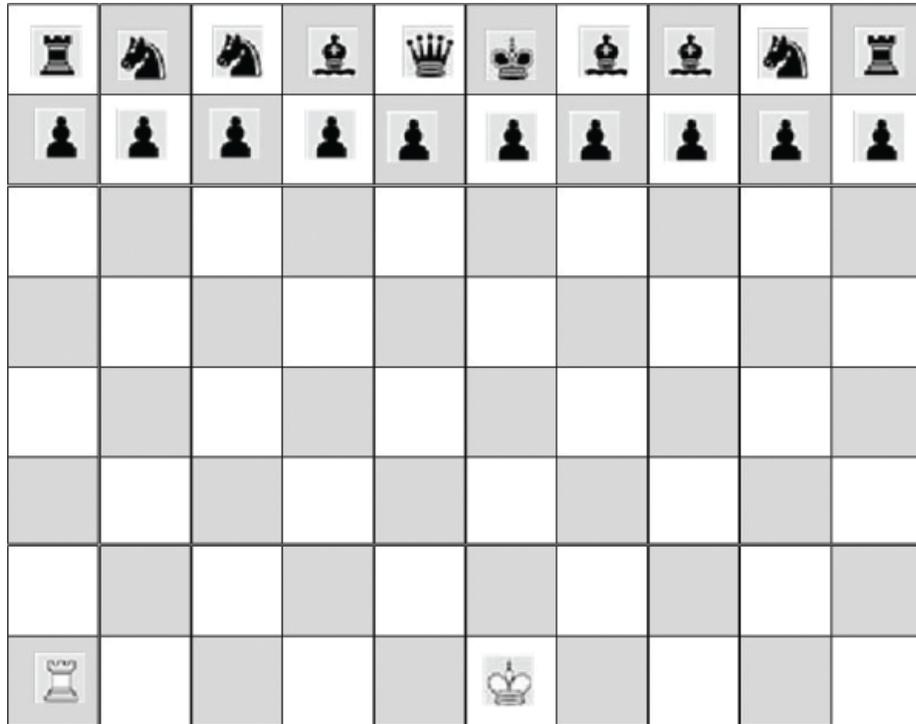


Diagram 19 – Position before Queen Side castle

H. Position after white queen side castle

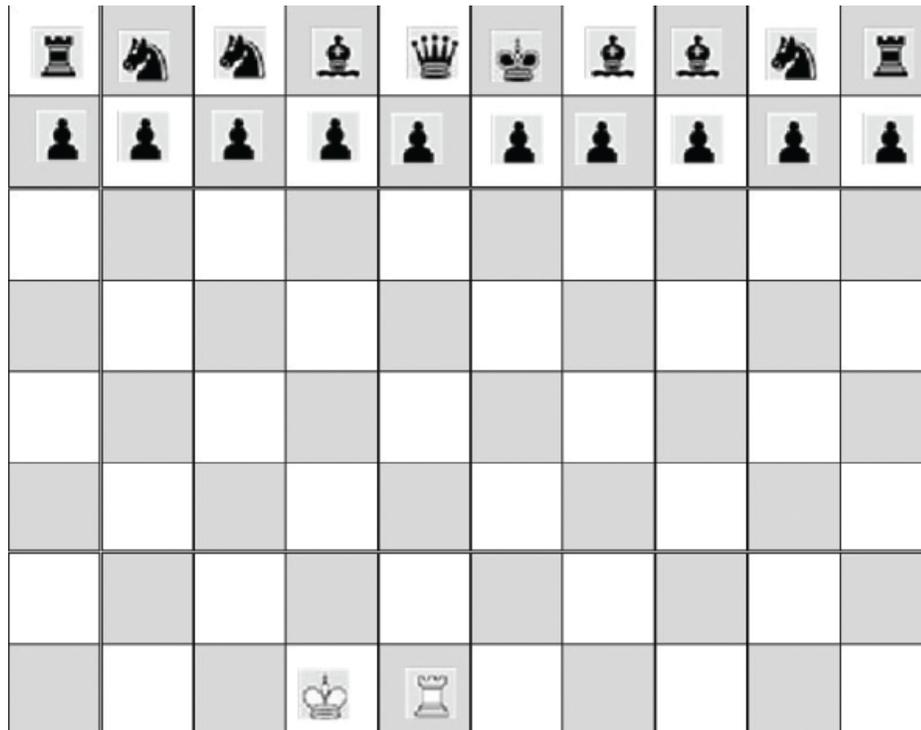


Diagram 20 – Position after Queen Side castle

Symmetric rules apply for black. This again is very similar to the standard chess rules. If either the king or the rook have already moved, castling cannot be done. Castling is prevented if the king has to cross through the scope of the opponents pieces and is in check. The line between the king and the rook must be clear to execute a castling maneuver

8. The king is “in check” if an opposing players piece attacks it. No piece can be moved that will expose the king of the same color to check or leave that king in check. This is the same as standard chess rules.
9. The remaining rules are all identical to standard chess rules in regards to checkmate, draws, resignations and stalemates. Wherever a rule is not explicitly stated, the rules from standard chess are meant to be applied to StrongChess.
10. Each move must be made with one hand only.
11. A player may adjust a piece if he/she expresses his/her intention of doing so. An example would be by announcing “I’m going to adjust”.
12. Except for clause 11, if the player having the move touches one or more of his/her own pieces he/she must move the first piece touched which can be moved.
13. Except for clause 11, if the player having the move touches one or more of the opponent’s pieces, he/she must capture the first piece that can be captured.
14. All other rules are as in standard chess.

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