



Marketing and Writing Portfolio

Scott Fenstermaker

Web Development – Copywriting – Strategy – Research Articles – Speechwriting

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SCOTT FENSTERMAKER

MARKETING STRATEGIST WITH THIRTEEN YEARS OF PROGRESSIVE EXPERIENCE, SPECIALIZING IN START-UP TECHNOLOGY COMPANIES

- **Marketing and Product Management:** Developed marketing strategy for two scientific software companies, designing integrated marketing plans that incorporate digital, promotional, social and traditional media
- **New Venture Creation:** Aided several entrepreneurs in launching new enterprises and expanding operations, including *AllInternetNow* (Internet access search), *SYSTAT* (scientific software), and *Advise Analytics* (statistical expert systems)
- **Analytics Expertise:** Six years experience in statistical software, ten years with web analytics
- **Supporting Competencies:** Database marketing, web development (Drupal / PHP / MySQL), digital and search engine marketing, copywriting, product and campaign management, strategic planning, small business management, public speaking, speaker coaching, and writing research articles on motivational psychology (<http://peopletriggers.wordpress.com>)

MANAGEMENT EXPERIENCE

ADVISE ANALYTICS, INC. – CHICAGO, IL PARTNER AND MARKETING DIRECTOR

2011-2012 (COMPANY SOLD)

- Co-founder of innovative software start-up specializing in new expert systems for statistical modeling: established infrastructure, ecommerce, fulfillment, accounting, and contact management systems
- Developed and executed strategic marketing plans: formed segmentation and positioning strategy, devised integrated campaigns, created ad concepts and copy, and represented company at trade conferences
- Created vision, mission, corporate strategy, and set budgets
- Sole developer of website and related infrastructure, using Drupal platform and custom PHP code
- Conducted primary market research including surveys and focus groups

SYSTAT SOFTWARE, INC. – CHICAGO, IL MARKETING MANAGER

2007-PRESENT

- Hired to establish a new SYSTAT sales/marketing operation in Chicago, and reinvigorate the flagging statistical software product brand among scientists and researchers in North America
- Raised single-product direct sales revenue to \$700,000 per year in under two years
- Direct all global marketing, promotional, PR, and indirect channel strategy; produce over 150 qualified sales leads per week in the target market segment of statisticians and researchers
- Re-designed company web site and related infrastructure to support improved lead generation; implemented best practices for Search Engine Optimization and effective pay-per-click marketing
- Designed and executed integrated marketing campaigns including print, online, database, tradeshow, and direct response, and wrote copy for all marketing materials; hired and trained new team members

ALLINTERNETNOW – CHICAGO, IL MARKETING AND OPERATIONS MANAGER

2003-2007

- General manager for all operations functions of this fast-growing Internet access search company, including operational, data management, CRM, database and SEM marketing, IT, and web presence
- Managed affiliate and pay-per-click campaigns that added over 100,000 qualified Internet access leads to the company's internal marketing database
- Expanded IT and CRM systems; managed development of web service for real-time lead qualification
- Created, launched, and evaluated digital campaigns for brands like AT&T, EarthLink, and Verizon, engaging targeted clients through media such as database, direct mail, search engine, affiliates and web presence

EDUCATION

BACHELOR OF FINE ARTS
Illinois Wesleyan University
Bloomington, IL

MASTER OF BUSINESS ADMINISTRATION
Lake Forest Graduate School of Management
Lake Forest, IL – GPA: 4.0
Valedictorian, Hotchkiss Scholar (Top 5%)

Web Development

www.capstonepresentations.com (HTML, hand-coded):



CAPSTONE PRESENTATIONS™
Communications Development for Professionals



Capstone Presentations is a Chicago-based consulting firm that specializes in oral communications development for professionals and upcoming managers.

We apply a wide range of techniques to help employees grow and develop their skills in public address, business presentations, Q&A sessions, interviews, meetings, and speeches.

Company Profile

Method Overview

Services

References

About Us

Contact

[Photo by dougasmorris.com](http://dougasmorris.com)

Web Development

www.adviseanalytics.com (Drupal / PHP / MYSQL – in Dreamweaver)

Features: Online store, discussion forum, custom trial license generation

AdviseAnalytics™

"A Second Opinion" is now "AdviseStat," the expert statistics advisor.

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[ADVISESTAT](#) ▾

[FREE TRIAL](#)

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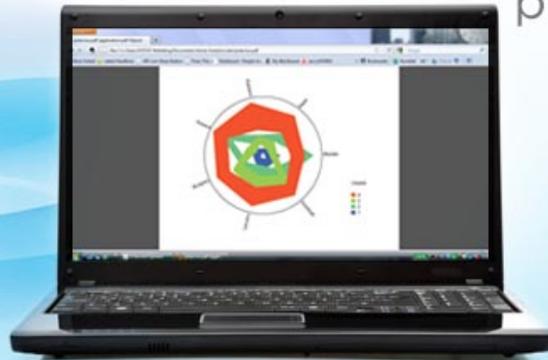
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Now you can have your own
personal analytics advisor.



[learn more](#)

AdviseStat, Your Statistics Expert-in-a-Box

AdviseStat is the first statistics software to do all the hard thinking for you. For tell it what you want to see, in plain English, and it takes care of everything else.

- It figures out the nature of your variables automatically.
- It chooses the most appropriate method for you.
- It handles all the transformations in the background.
- It corrects your data for things like missing values.
- It reports back to you on all its choices and findings, with clear, detailed explanations and graphs.

Guidance like this has never before been available for statistics. Most current programs function like big scientific calculators. If you receive any help at all, it comes from restrictive, lock-step calculation wizards.

AdviseStat offers you intelligent advice, easy operation and detailed guidance. [Learn more.](#)

User login

Username or e-mail *

Password *

- [Create new account](#)
- [Request new password](#)

[Log in](#)

Whitepapers on A Second Opinion (PDF):

[Statistics with AdviseStat](#)

[Cluster Analysis with AdviseStat](#)

[Prediction with AdviseStat](#)

[Text Analysis with AdviseStat](#)

Copywriting: Case Study

Successful software OEM partnership between statistics and manufacturing



SYSTAT Helps KLA Tencor Improve Chip Fabrication

KLA Tencor is the world's leading supplier of yield – and defect – management products to the semiconductor industry. They produce electronic instruments and software for defect monitoring, measurement, metrology, and process/yield analysis. Additionally, their services to the semiconductor industry include comprehensive manufacturing process consulting. KLA Tencor supports a growing, global customer base throughout the United States, Europe and Asia, and derived approximately 76 percent of its 2007 revenues from outside the U.S.

KLA Tencor recently developed an advanced Yield Analysis and Reporting System called ***Klarity ACE XP***. This system conducts analysis on silicon chip manufacturing data to reduce the need for defect inspection, and increase chip yield.

The Klarity ACE XP product needed a way to conduct various types of mixed regression models on yield data, in order to derive predictions. Klarity's calculations use an approach called Variance Component Models, which are employed frequently in manufacturing, medical research, and the social sciences.

But this approach needs a more powerful analysis than standard regression algorithms. The algorithms for analyzing these problems are much more complex than the ones found in ordinary statistical software. These more complex models needed to be able to incorporate both fixed and random effects, so as to differentiate between random and systemic yield problems.

Rather than try and program that statistical method from scratch, KLA Tencor partnered with Systat Software. Systat provided two of its ***Custom Analytics*** modules: ready-made statistical and graphical libraries that can be plugged into enterprise solutions. KLA Tencor selected the highly-specialized SYSTAT analytics called ***MIVQUE*** (Minimum Variance Quadratic Unbiased Estimation) and REML (Restricted Maximum Likelihood). Both are statistical modules that can handle experimental designs containing so-called "random factors."

Powered in part by Systat's ***Custom Analytics***, Klarity ACE XP provides manufacturers the engineering analysis necessary to improve both efficiency and profitability. Customers of KLA Tencor can expect reduced analysis time and improved ease of use, resulting in faster time-to-market with fewer defects.

The ***Systat Custom Analytics Group*** is an international team of statisticians and developers who work with customers to provide them with on-demand statistical, analytical and graphical solutions. The analytics drivers are based upon the tried-and-true statistical functionality found in Dr. Leland Wilkinson's venerable ***SYSTAT*** statistical software product. Systat Software, Inc. is a division of Cranes Software International, located in 39 countries worldwide with a 350,000 strong global user base.

Copywriting: Sell Sheet

Collateral for Capstone Presentations, a speaking skills coaching business

IS CAPSTONE RIGHT FOR YOU?

Is your company one that...

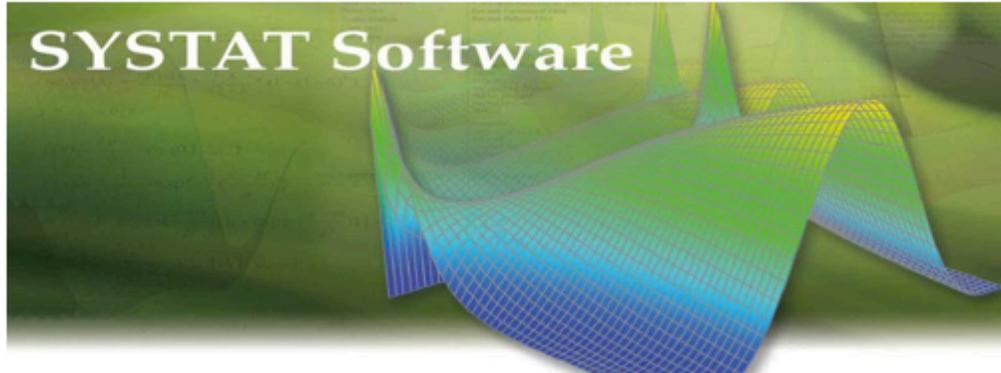
- ◆ **Constantly uses business presentations** as part of the everyday corporate culture, but frequently finds them lengthy, poorly delivered, and missing the mark?
- ◆ Hires **young professionals** as a long-term human resources investment?
- ◆ Worries that good, profitable ideas never get off the ground because of the originator's **inability** to articulate a **convincing business case**?
- ◆ Employs some people who, when evaluated, are described as needing a **little extra help** with oral communication?
- ◆ **Does not provide specific education and training in communication arts** to upcoming managers and professionals, but expects them to have new **communication-related responsibilities**?
- ◆ Often can trace back loss of time and money to some **communications breakdown**?
- ◆ Consistently engages in **verbal sales presentations, negotiations, or bids**?
- ◆ **Consults with, counsels,** or otherwise **has routine communications** with outside parties?

TOP 5 Reasons CAPSTONE is the right choice:

- 1) Our exciting new approach doesn't just teach **speaking theory**, but incorporates the **hands-on** training elements of **speechwriting technique, vocal production, and performing arts instruction**. Both oral and written skills are improved dramatically.
- 2) Our expert coaching fosters **enthusiasm, poise** and **confidence** from both experienced and novice presenters. These are core competencies for all **future** managers and executives whether making presentations or not.
- 3) We use a **phased, long-term approach** to develop higher proficiency and greater sustainable skills.
- 4) Experience from the engineering sector allows us to focus on **issues specific to both business speaking and business logic**.
- 5) We devote equal attention to the quality of **presentation content and delivery**, which uses systems thinking to ensure a **professional, well-balanced presentation** in both material structure and oral delivery.

Copywriting: Database Marketing

Email notification of a pricing promotion, sent to internal list
Created with Constant Contact



Announcing 15% Discount on SYSTAT 13

Save 15% on SYSTAT 13 through June 30

From now through the end of June, we are happy to extend you a 15% percent promotion on all SYSTAT licenses and upgrades. This includes not only standalone licenses, but site and network licenses as well!

Here are sample discounts you could earn if you purchase by the end of the month:

SECTOR	STANDARD PRICE	SPECIAL OFFER	SAVINGS
Academic	\$799	\$679.15	\$119.85
Gov't / Non Profit	\$1,199	\$1,019.15	\$179.85
Commercial	\$1,499	\$1,274.15	\$224.85

This offer also applies to multi-user (site and network) licenses, and **could save you hundreds or even thousands of dollars**. If you have any last questions about the software before you purchase, please **reply to this message** or **give us a call at 877-797-8280**.

We're looking forward to hearing from you!

Thank you!
-The Systat Team



The SYSTAT team of developers, representatives and support staff are dedicated to the SYSTAT community, and SYSTAT's mission to make elegant analysis and visualization accessible to all its users.

Copywriting: Banner Advertising

"SYSTAT IS..." Print and Banner Ad Campaign, 2008-2009

<p>SYSTAT IS VALUE</p> <p>No Annual Renewals.</p> <p>No Extra Modules.</p> <p>Statistics You Can Trust, a Price You Can Afford!</p> <p>www.SYSTAT.com</p>	<p>SYSTAT IS GREEN</p> <p>Over 5,000 articles in ecology journals contain graphs & analyses produced by SYSTAT.</p> <p>www.SYSTAT.com</p>
<p>SYSTAT IS SUPPORT</p> <p>We're not just going to help you out we're going to love you to death.</p> <p>www.SYSTAT.com</p>	

Copywriting: Press Release

Launch of free statistical software product to help students



Systat Software launches MYSTAT 12, a free statistical analysis program for the global academia.

~Revival of openly-downloadable MYSTAT product facilitates learning and academic research~

CHICAGO, IL 03 January, 2008. Systat Software, Inc., a leading developer and supplier of award-winning scientific software and services, today launched MYSTAT 12, a freely downloadable statistical analysis software package designed specifically for use by students and teaching community.

MYSTAT 12, which has many of the core statistical functions available in the SYSTAT 12 product, contains standard statistical and graphical functionality, as well as teaching aids such as Random Sampling and a Probability Calculator.

While it contains statistical and graphical features related to topics that are generally covered in undergraduate-level and beginning-graduate level statistics-related courses, it also includes advanced functions not normally found in introductory statistics packages, such as the Loglinear Model, as well as Logit, Probit, and Nonlinear Regression. MYSTAT can accept a maximum of 100 variables with no limit on the number of cases.

The installable files that are available at www.systat.com/products/mystat, will be of immense help to students in virtually any course that involves quantitative analysis, including psychology, social sciences, biology, economics and market research.

Speaking on the occasion, Dr. Leland Wilkinson, Executive Vice President, Systat Software and inventor of the original SYSTAT product, said, "MYSTAT includes a vast majority of the powerful statistical functionality found in the SYSTAT software package. With so many newly emerging applications for statistical analysis, there has never been a more important time to provide students and professors free access to the resources they need to promote research and prepare the next generation of the global workforce. We hope MYSTAT plays a key role in global academic achievement."

About Systat Software, Inc. (www.systat.com)

Headquartered in San Jose, California, Systat Software is a leading developer of specialized scientific software products for data analysis, technical graphing, and presentation. SYSTAT Software's global reach across 38 countries is backed by technical support centers in key geographies such as the US, UK, Germany and India. World-renowned statistician Prof. T. Krishnan heads Systat's core development team. This team comprises of key researchers and statistical analysts who continuously work towards enhancing products to provide specialized domain expertise to their customers.

Strategy Memoranda: Creative Brief *Print Ad specification for Systat Software (excerpt)*

Summary

Systat Software will engage a graphic designer to create four print ad concepts to be rendered in the form of 4c/1s 8.5" x 10 7/8" full-bleed magazine ads. Of the four concepts, two will present a general-purpose ad for the SYSTAT 12 product, and the other two will present an ad oriented towards environmental sciences (ecology, geology, conservation efforts, etc.)

Of the four concepts, one general-purpose concept and one environmental concept will be chosen to be fully-rendered. There will be a grand total of not more than three revision cycles. The final ads should be designed to transition well into b&w format. Subsequent resizing may be necessary, and will be addressed separately from this project's scope and budget.

Strategic Objectives

- Generate leads by exciting readers about the product and inducing them to take action
- Cut through clutter with bold, visually arresting display
- Reinforce brand recognition and credibility with reach and frequency
- Call-to-action priority:
 - 1) Call the toll-free number (877-797-8280)
 - 2) Visit the website (www.systat.com)

Target Audience

The core SYSTAT target audience consists of the users and purchasers of desktop statistical software. This includes academics and researchers, professional scientists, analysts and engineers from many disciplines. The ads developed in this project will be featured in both academic journals and association and trade publications.

- Ad #1: General Purpose
 - The function of this ad is to have a broad appeal to all data analysts, no matter what discipline they pursue. As more specifically-targeted ads are developed in the future, they will be substituted-in for this general purpose version.
- Ad #2: Environmental Science
 - The function of this ad will be to target those scientists and researchers who make a specialty of the following disciplines:
 - Environmental Science
 - Biology
 - Ecology
 - Geology
 - Botany
 - Zoology

Strategic Message

- The strategic message for both ads should position SYSTAT 12 as the industry's "Mac" in contrast to the "PC" image of major competitors SAS and SPSS.
 - Portray SYSTAT as approachable, youthful, simple, and supportive

- The strategic message for both ads should have the following qualities:
 - Should focus on end users and solutions, rather than features and functions
 - Should emphasize Systat's talented and supportive team
 - Should emphasize SYSTAT's graphical capability, which is universally praised by users
 - Should emphasize product advantages of user-friendliness, price, and versatility

Tone

- The tone of both ads should be consistent:
 - Both ads should reflect the professional, articulate style of B2B advertising
 - Both ads should be designed to reach scientists and researchers, and therefore should emphasize the following:
 - Appeal to intelligence
 - Appeal to need for accurate, powerful analysis tools
 - Appeal to logical differentiators like price, support, and graphics
 - Both ads should have a youthful, almost collegiate tone, in order to contrast the brand with the enterprise-level, cumbersome competitors. The tone should be focused on the relatively young graduate student researchers and freshly-graduated professional scientists. Keywords include:
 - Approachable
 - Dynamic
 - Novel / Fresh
 - Elegant
 - Simple

Inclusions/Exclusions

- Inclusions
 - SYSTAT logo
 - Toll-free number mention (877-797-8280)
 - Website mention (www.systat.com)

Deliverables

- Concepts:
 - Four (4) ad concepts rendered as 4c/1s 8.5" x 10 7/8" full-bleed magazine ads
 - Presented in JPEG or PDF format
 - Two (2) concepts will relate to the aforementioned "general purpose" ad, and the other two (2) concepts will relate to the environmental science ad.
 - Head and subhead examples to accompany each concept
- Final Ads:
 - Two (2) print ads rendered as 4c/1s 8.5" x 10 7/8" full-bleed graphics
 - Presented in original artwork file (Quark or InDesign) AND PDFx
 - Heads and subheads provided by designer
- Three revision cycles

Strategy Memoranda: Segmentation Analysis
Segmentation of the Statistical Analyst Market

Segment Name	How much do I care about analysis?	Description
"Number Munchers"	"It's my whole life."	Research team members Methodology experts Skilled programmers Statistics professors
"Explorers"	"I think it's pretty cool."	Solo scientific researchers Interested in statistical methodology Like a mix of control and complexities
"Decision Makers"	"I have to care about it."	Professionals who use research as a means to make the best decisions Not interested in learning lots of features and complexities Could use occasional reminders and explanations
"One-Hit Wonders"	"I don't care at all."	One-time, or very occasional users of analytical tools Largely unfamiliar with, and intimidated by, analytical concepts Wants to get the analysis portion of their work over and done with (need tutoring)

The **Number Munchers** segment includes professionals such as pharmaceutical researchers and statistics professors.

The **Explorers** segment includes professionals such as environmental researchers and computer scientists. These customers need an effortless interface with the option for additional control over the processing of their data.

The **Decision Makers** segment includes professionals such as business analysts and market researchers.

The **One-Hit Wonders** segment includes students and fantasy sports fans. These customers need a tool that is free or inexpensive because they do not have a recurring need for data analysis.

Key Factors in Ranking Segments	Weight	Segments			
		Number Munchers	Explorers	Decision Makers	One-Hit Wonders
Likelihood to Repeat Purchase	3	9	9	12	6
Price Sensitivity	2	4	4	6	8
Need for Validation	2	8	8	2	2
Relative Market Size	1	2	2	3	4
Growth Potential	1	1	1	4	3
Total		24	24	27	23

Long-form: Speechwriting “Valedictorian Address”

Submitted to Lake Forest Graduate School of Management for consideration, May 10, 2013

Reprinted on the LFGSM Student Services blog on June 24, 2013:

https://my.lfgsm.edu/ICS/Blogs/Student_Services_Blog.jnz?portlet=Student_Services_Blog&screen=View+Post&screenType=next&Id=985bbdba-696c-4c6c-96d9-c5961f14b78a

Mr. President, Directors of Lake Forest, Faculty and Staff, Fellow Graduates, Family and Friends:

When Mario Cuomo spoke to Iona College in 1984, he told the story of the commencement address advice he received from Father Flynn, the Irish president of St. John’s University:

“Commencement speakers, “ said Father Flynn, “should think of themselves as the body at an old-fashioned Irish wake. They need you in order to have the party, but nobody expects you to say very much.”

After we’re done here, I, like most of us, am going to enjoy the beautiful day, have lunch with some friends and family, find a fun way to wind down the evening...and then get up and go to work tomorrow. And life tomorrow, after we’re all conferred our MBAs, will not look drastically different than it did last Friday. So it’s helpful to pause right now to appreciate a milestone accomplishment and reflect on the immense amount of time we’ve all devoted to it.

It’s also fitting that we acknowledge the time that was put into us. Perhaps Lake Forest’s greatest strength lies in the experience and skill of its faculty practitioners, who all give us more value in their time than we can ever show in gratitude.

One of the people who most embodied the spirit and mission of this school was faculty member Mike Muldoon. Mike passed away this past summer. He was an insightful and demanding instructor, with an irrepressible sense of humor and a true love of people. He famously talked through a set of clenched teeth about the things that “fashinated” him. His students performed loving imitations of his mannerisms. At his wake, the receiving line went out the door and clear around the building, which tells you that when he taught emotional intelligence he knew a thing or two about it.

Mike thought that it was important to create wiser, more capable professionals and leaders within this business community. He thought it important enough to give twenty-three years of his life to it. The fact that he had fewer years with us than we could imagine, reminds us of the precious nature of time, and makes us better appreciate the time we’ve invested in one another.

Of the many ways that these excellent faculty and staff members could have spent their time – with family, at their professions, on self-improvement, or relaxing after what I imagine are very stressful days –they chose to give that time here. They invested that time with us here because they wanted to pass some little wisdom to us and to help bolster this business community of ours.

Likewise, our friends and families sacrificed a lot of time with us so that we could pursue a degree. And hopefully most of them will still be glad to have us back, now that we're done.

And finally we acknowledge our own investment of time. We dedicated two, three, or in many cases four years of lives to a great undertaking. In some cases, it was for more money. In some cases, faster advancement. In some cases, better job prospects. Maybe some people have a graduate-degree history in their family. Or, in that most underrated of cases, maybe one or two of us actually wanted to learn more about the management of business.

Recognizing for a small second the amount of time – our time, our faculty's time, our family's time – was invested into this process, and knowing as we do that our time may be shorter and more precious than we realize, we become aware of a certain standard and a certain responsibility we feel compelled to live up to.

In our time there is a lot of arrogance both in the practice of business and in its education. The best selling corporate memoirs are written by gamblers and job-slashers with huge, cult-inspiring personalities. Hiring managers today worship at the alter of school prestige and pedigree. Investment bankers clamor over one another to see who can most effectively co-opt characters like Gordon Gecko. And through all this noise, through all this Machiavellian crap, teachers like Mike and like those present here spend their limited and precious time teaching us to consider for a second how we might actually engage and embrace those around us.

It reminds me of a line from *The Merchant of Venice*:“ How far that little candle throws his beams. / So shines a good deed in a naughty world.”

What we may have first envisioned as a career-boosting detour, we now realize is a wealth of critical thinking and leadership skill that someone saw fit to pass to us with what limited time they could spare. With that knowledge, they also passed us an understanding: that without making a worthy contribution to something bigger than themselves, without giving back *something* of what was given to us, all the accolades and security that come from an MBA won't ultimately make our lives any more meaningful.

We could, if we wanted to, now choose to fall back on our heels and relax. There's nothing stopping us. We could frame our diplomas and hang them somewhere nice, and have that be it. And we could chose to give no further thought to our own professionalism or development. The job done, the degree in hand, we could place the credential on our resume and have that be that.

Or, we could use this as an opportunity springboard into anew way of dealing with the world. We could honor the gifts of time that so many invested in us through a strenuous commitment to improve our surroundings, to keep developing as professionals and to mentor those around us. And through this commitment we would hope to say thank you in some small way for the time we have devoted to one another.

I for one believe that all who are with us today truly gave what they gave for something more than a piece of paper in a frame.

Thank you, and congratulations.

Long-form: Researched Blog Article ***“How Pressure and Stress are Affecting Your Performance”***

Published on the *People-triggers* blog:

<http://peopletriggers.wordpress.com/2011/04/19/how-pressure-and-stress-affect-our-performance/>

Selected by the Wordpress editorial staff to be featured on the front page of wordpress.com, April 24, 2011

Some years ago, a Princeton psychologist named Sam Glucksberg brought a group of test subjects into a room. In the room was a table positioned against a wall. On the table was a book of matches, a box of thumbtacks, and a candle. “Your job,” Glucksberg told his subjects, “is to attach the candle to the wall in such a way that when it’s lit, the wax will not drip onto the table. I will be timing you, and I will use your results to establish averages and benchmarks.”

Some time later, he brought another group of subjects into the room. He showed them an identical set-up: table, matches, box of thumbtacks, and candle. He gave them the identical instructions, but added a twist: “I will be timing you, and you will be rewarded with money based on your times. If you finish in the top 25% of all times, you will receive X dollars. If you’re the fastest of all times, we will give you double that amount.”

All of Glucksberg’s groups were timed against one another. And what do you think happened as a result?

The groups who received the money as a reward were, on average, three-and-a-half minutes slower at coming up with the right answer. How could this happen?

Pressure and Choking

My fascination on this subject began when I wrote an entry on Malcolm Gladwell’s New Yorker article, “The Art of Failure,” in which he talks about the difference between “choking” and “panicking.” Gladwell cites research from Dr. Daniel Willingham at the University of Virginia, talking about how the brain has two distinct, physically separated learning centers that record information in different ways. “Explicit learning” is learning that happens by conscious attention to lots of details, like learning how to spell certain words. “Implicit learning” is a largely subconscious process that’s trained through repetition, like learning to play the piano.

The implicit learning centers are far more capable of nuance and “touch” than the explicit learning centers, and so any activities that are performance-related – acting, playing tennis, playing music – are best handled by implicit processes. Gladwell notes that there is a certain specific type of performance failure, “choking,” that happens under high-pressure situations. Choking is a stress reaction wherein the explicit parts of the brain take over implicit processes, and the performer/athlete/speaker becomes self-conscious and over-thinks their actions. Because the explicit, conscious centers of the brain work much more slowly than the implicit, subconscious centers, the performance will start to fall apart. The performer is “in his head.”

So, from this, we understand that certain advanced processes of the brain – processes that are mostly subconscious – will tend to shut down under stress. We know from Gladwell that implicitly learned motor skills like tennis serves are vulnerable to this phenomenon. This makes sense in the scope of human evolution: thousands of years ago, acute stress usually represented a life-threatening situation. At that moment, you probably did not care a great deal about nuance. You just wanted to be as alert and reactive as possible.

But Gladwell's article opens the door to more questions. Does this stress reaction affect us in other ways besides making us over-think what we're doing? Also, what constitutes a stressful situation, and does that definition ever change?

Pressure and Problem-solving

Daniel Pink is a former White House staffer, and author of the phenomenally popular business book, Drive: The Surprising Truth About What Motivates Us. In it, he asserts that "extrinsic motivators" like rewarding with money do not motivate employees in the way we think they do. To illustrate this, he cites Sam Glucksberg's study based on a famous cognitive problem called The Candle Problem.

The Candle Problem is a famous test wherein a subject sees a candle, a box of matches and a box of thumbtacks sitting on a table, and told to fix the candle to the wall in such a way that the candle will not drip wax on the table below it. The correct solution is to empty the box of thumbtacks, tack the empty box itself to the wall, and use that box as a platform to hold the candle. Arriving at the right solution requires enough creative problem solving to overcome a tendency called "functional fixedness": the tendency to see the thumbtack box only as a container for thumbtacks simply because that's how it was presented to the subject.

As we mentioned, Glucksberg gave this old problem a new twist by offering a financial incentive to complete the task faster than the average. Glucksberg discovered to his amazement that the teams with the financial incentive took significantly longer than the group with no incentive at all. In this case, the incentive did the exact opposite of what it was supposed to do: instead of sharpening creative thinking, the incentive dulled it.

Extrinsic motivators like cash rewards focus our mind, but also narrow it. When we want to win an incentive, that narrow focus helps us accomplish certain straightforward tasks very efficiently. But this same tunnel vision cuts out most of our high-level problem-solving skills.

These extrinsic motivators are another form of pressure. The moment a person decides to change their behavior based on a stick-and-carrot, he presses himself unusually hard to achieve his goal. The outcome, which was of lesser consequence before the incentives were introduced, is now a bigger deal. When the subjects push themselves towards a target, they trade their creative problem-solving abilities for mechanical efficiency.

So now we have seen pressure situation rob us of two sets of higher processes, performance abilities and creative problem solving. It's no coincidence that both these

processes are affiliated largely with the subconscious mind. Pressure seems to focus our conscious mind at the expense of subconscious processes.

Pressure and Emotional Receptivity

The list of subconscious processes dulled under pressure does not stop here. The emotive processes in the brain are also heavily subconscious. Emotional responses are also affected by acute pressure. I have some good anecdotal evidence to this effect from my friends in the acting community. Stage acting is an interesting and unique performance process. The actor must not only perform using implicit learning the way a sports player would, but must also be emotionally vulnerable to his or her scene partner. They do this by suspending disbelief, allowing themselves to partially go through the same emotions as someone in their character's situation.

From those actors whom I've spoken to, most all report that it's much easier for them to access their emotions freely – to “get into” the scene – when they do not feel themselves in an especially high-pressure performance situation. For example, An actor might feel pressure if they know that a certain family member will be in the audience that night. Or perhaps, if they know a certain critic will be watching. Anything that makes one particular performance “a big deal” will also make it potentially harder for actors to experience honest emotional reactions in the moment.

So what is it about certain situations that make us react in this way? Why is it that some of us may feel this reaction in some situations, like giving a speech, but not in other situations, like meeting a deadline? Also, are we doomed to feel that knot in our stomach every single time we're about to give a speech, or will it someday go away?

Toughening

When you perceive distress – pressure or stress in excess of what you believe you can handle – your brain reacts by putting your body into a defensive mode. The hypothalamus, located at the base of the brain, sends signals for your body's endocrine system to release certain hormones. The fight-or-flight hormone we're most familiar with is adrenaline*. Adrenaline elevates our heart rate and focuses our alertness.

But along with adrenaline, the body releases a second hormone called cortisol. Cortisol serves a number of functions, one of which is to shut down those systems that are nonessential. Cortisol shuts down the immune system, which is why those people under prolonged periods of stress are more likely to catch colds and the flu. It also shuts down the sexual response system, which is why chronic stress has been related to sexual dysfunction. Cortisol is the culprit that shuts down all the creative, emotional, implicit, and high-functioning processes in the brain. It turns us all – just as evolution would have it – into explicit, inartistic executors. Danger. Run. Now.

Even though the body releases both adrenaline and cortisol as a reaction to stress, it releases them based on two separate triggering mechanisms, and one is not as desirable as the other. Adrenaline speeds the heart, increases the blood pressure, and thereby delivers more oxygen and sugar to the brain and muscles. The body releases it when it's gearing up for anything that requires effort, from parachute jumping to math tests.

Cortisol, however, is different. It is released into the body only when the brain perceives distress, – that is, a situation that’s out of control, or beyond one’s ability to cope. Cortisol, not adrenaline, causes that pit-of-your-stomach anxious feeling when you know you’re in trouble. Though it serves to concentrate brain function on the here-and-now, its presence is negatively correlated with peak performance. If adrenaline is the “here we go” trigger, cortisol is the “uh-oh” trigger.

Dr. Richard Dienstbier, a psychology professor at the University of Nebraska Lincoln, studies the effects of repeated stresses on animals and humans. According to his research, peak performance at demanding tasks, as well as long-term emotional stability, correlate with four distinct qualities of the body’s stress response:

1. Adrenal endurance – the tendency to resist total depletion of adrenaline, which otherwise results in exhaustion
2. Adrenal responsiveness – Low adrenal base rates, but a fast and strong adrenal response to stress, followed by a quick decline once the stress has passed.
3. Increased receptivity to the effects of adrenaline – attuned beta-receptor responsiveness. This is the opposite of the effect caused by “beta-blockers” in heart patients, where you’d want to minimize the effects of adrenaline on weak hearts.
4. Cortisol suppression – During times of stress, cortisol release is not triggered, and therefore does not climb above base levels.

Poor task performance is correlated to the opposite stress reaction: high base levels of stress hormones already in the system, quickly depleted adrenaline reserves, and a large and long-lasting release of cortisol into the bloodstream.

There are plenty of personality-based and genetic factors that effect stress hormone base rates and stress release rates, but Dienstbier’s research reveals a very interesting finding. When ordinary, untrained subjects are suddenly exposed to acute stress, their bodies panic and dump lots of stress hormones into the bloodstream. This tends to bring about only mediocre performance.

However, when subjects are exposed to similar stressors over and over, with non-stressed recovery periods, the body starts to respond differently. It uses less cortisol, and uses up adrenaline reserves less rapidly. In short, the body starts to resemble the ideal response outlined in the four points above, and the subject’s performance improves as a result.

Cortisol and Stress

These conditioning results seem to make sense. The first time you encounter a stress situation – like, say, moving to a new house – your primitive brain knows 1) that it has to gear up for something (adrenaline), and 2) that it has never coped with anything like this before, and that the situation might be cause for dread (cortisol). But if someone moves frequently, the primitive brain adapts to the stressor. While the event is still stressful, the brain understands more clearly how to cope with the process. Less cortisol is required. Also, the adrenal responses are more “in-shape”, and less likely to deplete quickly.

Conventional wisdom in psychology used to believe that stress responses were 100% negative, and people should work to expel stress from their lives. But when we

understand stress at a more granular level, we see that it might only be certain types of stress reactions that are negative. A certain amount of stress, on a limited and intermittent basis, might be necessary to keep our responses in shape. Dienstbier's research supports the idea of "toughening up," and gives a physiological definition for what it means to be tough. Toughness, we now see, has mostly to do with how our bodies physically respond to stress. What's more, that response can be conditioned and improved.

Optimizing Our Performance

All these findings taken together suggest that there are ways we can actively improve our performance.

1) Expose yourself to repeated, productive stressors just beyond your comfort zone, with non-stressed recovery periods

Dienstbier's article suggests that toughening in one area of stress will carry over into other areas. He offers aerobic exercise as an example of a productive stress activity that can help condition the body's stress responses. When those responses become conditioned, they will affect the body's response to many different kinds of stressors.

I've seen anecdotal evidence of conditioning carry-over from one type of stressor to another. For about ten years, I coached high school-aged actors in competitive speaking events. These students would compete at weekly tournaments, and undergo coaching sessions once or twice a week. This activity is a good example of intermittent exposure to a major stressor with non-stressed recovery.

Many students who began as freshmen with fears about public speaking or introverted personalities have credited this activity with increasing their confidence. Many stated they felt more confident not only about public speaking, but about themselves and their general abilities. I can also testify that these same students exhibited much more emotional maturity by the time they were seniors, though whether that was from the activity or from their natural development I cannot say. After seeing these results in total, however, I am convinced that stress conditioning in one area – like exercise or confidence-building activities – leads to better results in other performance-related areas.

2) Separate creative and complex processes from performance pressures

Let Your Mind Ruminates David Brooks, a commentator for the New York Times and a respected social science voice, appeared on the Charlie Rose Show in 2010 and commented on creative decision-making. He said that while straight-forward decisions are best left to traditional pros and cons, the best way to make a creative or cognitively complex decision is to "distract yourself with something else, and then come back to the problem." Creativity and complex decisions are the realm of the subconscious mind. "While we have been distracted," Brooks tells us, "your unconscious [mind] has been filtering it all, and will come to the right decision."

My wife is in the creative industry, and she tells me that she can see a difference in the caliber of creative work that has a five-week deadline as opposed to a one-week deadline. This is not due to four additional weeks worth of conscious attention, because

in that five-week span, creative artists are working on many different projects for other clients. The only impressive difference between the five-week work and the one-week work is that with the former, the creatives have been given time for their unconscious minds to ruminate on the problem.

Rather than introducing incentives, pressures or deadlines, we need a non-stressed, pleasantly distracted environment to give our subconscious minds room to work on more complex and creative problems. Therefore, when one receives a project, it's best to think about it immediately and deeply, so as to give the subconscious mind time to ruminate before deadlines come due.

If you are a manager of people whose job it is to think creatively, you need to set an environment conducive to that type of thinking. Daniel Pink, discussed earlier, talks about the intrinsic motivators that produce better creative results than simple, extrinsic motivators like money or promotion.

3) Manage your own expectations

Conventional wisdom tells us that high expectations yield high results, and certainly we want our work to be excellent. There's an old adage, however, which tells us that the perfect may be the enemy of the good.

Peter Bregman is a management consultant and blogger for the Harvard Business Review. He wrote a blog article recently on his experiences preparing to address the TED audience in Flint, Michigan. He parceled out weeks of time to work on his speech, but due to the high stakes involved he kept throwing out his drafts and starting over. Facing a deadline a few days away, he still had no material to work with. This is what he says happened next:

One morning, a few days before the speech, I found a note on my computer, left by Eleanor. She told me the speech might not end up being that great. But in the big picture, it wouldn't make a huge difference. Surely it would be good. And if not that, then at least OK. Which, ultimately, would be just fine. Once I read that, something shifted in me. I stopped trying so hard. I stopped trying to be funny, smart, clever, or creative. I stopped trying to talk about the three most important things. I stopped trying to make this my best talk ever. Instead, I set a goal I knew I could achieve: talk about one thing — not necessarily the thing, just something that was meaningful to me — and talk about it simply and passionately.

We must set our expectations so that they do not tie us up in knots. Most of the pressure that inhibits us is self-pressure, and if we think about it, only a small fraction of that self-pressure is justified in order to motivate the results we want. The rest just gets in our way. Which brings me to:

4) Ease up on the melodrama and the over-analyzing

Melodramatic thinking and mental chatter form a feedback loop with stress triggers. If you're psyched out about something, your body will release stress hormones. When you feel the effect of the stress hormones, you have a constant, nagging reminder that you don't feel right, which further psyches you out. These types of loops, over the long term, correlate with neurotic and depressive tendencies.

Toughening-up only happens when the body has periods of non-stress in which to recover. During those periods, the primitive brain re-appraises situations, and moderates its future reactions. If you – like me – are susceptible to a lot of mental chatter and melodramatic thinking, your body will receive a constant stream of stress hormones, and experience a long-term, weakened state as a result.

Dr. Mark Leary, a social psychologist from Duke University, talks about the importance of quieting anxious self-chatter in his book, *The Curse of the Self*:

Contrary to how it may seem, most of people's inner self-talk does not help them to anticipate problems, cope with difficulties, or improve the quality of their lives. True, the chatter deals mostly with problems of past and future, but rarely does this kind of rumination actually help people improve their lives. Think of all the times you have replayed upsetting past events in your head – a conflict with another person, a humiliating experience, a stupid mistake, a traumatic event. In how many of those times did rehashing the experience actually help you to understand or cope with it? And, in those rare cases where self-reflection was actually helpful, or did you analyze and agonize more than necessary.

5) Now that you've learned all these details, forget them

It's a little dangerous to know exactly what goes on in our bodies when we get nervous, because it might make us hyper self-conscious about it. Knowing what's causing that sensation in the pit of our stomach tends to increase our risk of over-analyzing it as it's happening, or of psyching us out that it's happening at all.

This information is helpful only because it demonstrates that our responses can be trained over time, and our confidence, performance level and quality of life will improve as a result. Now that you know about stress hormones and the subconscious processes of the mind, forget it all and never think of it again.

Instead, train yourself up with hard challenges and periods of non-stress. And figure out which situations and motivators will give you the best, most creative results.

** A note to medical practitioners: I use the word "adrenaline" in this context for simplicity and recognition. Wherever I mention "adrenaline" in talking about the SNS response, I am referring to all the peripheral catecholamines, particularly epinephrine and norepinephrine.*