Show Notes for Podcast Eleven of seX & whY

Host: Jeannette Wolfe

Interview with Dr. Cara Tannenbaum, Professor in the Faculties of Medicine and Pharmacy at the Université de Montréal in Canada, and Scientific Director of the Institute of Gender and Health of the Canadian Institutes of Health Research

Definitions

Biological Sex- chromosomes, hormones, reproductive anatomy, usually binary

Gender- social and cultural construct- falls on a spectrum

- For a really nice summary of current use of definitions please see this excellent review.
- Excellent websites with tons of resources
  - Institute of Gender and Health- Canadian Institutes of Health Research
  - Video on how to conduct better science that considers the potential influence of sex and gender

Historical factors that limited the inclusion of women in clinical trials.

- Belief that outside of reproductive zones, males and females were the same
- Dogma that the female estrous cycle screwed up data and that male animals produced “cleaner” results
  - Two interesting facts
    - Many female rodents’ entire estrous cycle is only 4 days!
    - We now know that male animals also have significant hormonal fluxes and that overall they are actually just as variable as females- see review
  - Concern after the worldwide thalidomide nightmare* and the public backlash from the discovery of several unethical government sponsored clinical trials, that fetuses (along with prisoners and children) needed extra protection from the potential of unnecessary harm by participation in a research trial. This led to regulatory protection via the Common Rule. As any women of child-bearing age could theoretically become pregnant, they (and ultimately by cultural proxy all women) were essentially excluded from most human trials and early clinical phase drug trials from 1970’s to the mid 1990’s.

*To read and an inspiring story as to why most of American was saved from the limb-shortening horrors of
To read and an inspiring story as to why most of American was saved from the limb-shortening horrors of thalidomide, read here. (Essentially, FDA scientist Dr. Oldham Kelsey refused to sign off on its application, even amidst considerable pressure from the drug company, due to concern of inadequate evidence.)

Interesting sex and gender differences in car crashes

- **Crash dummy 101**
  - Historically crash dummy is Hybrid III which is 5'9” 170 pounds representing an average male
  - Hybrid III female model- 5’ 110 pounds
  - **Other models**: used by NHTSA

- **Why injury patterns may be different between men and women**
  - Differences in baseline anthropometric measures (like height)
  - Biomechanical differences
    - Women more prone to whiplash due to differences in neck muscular
  - Mechanical design
    - smaller adults
      - sit closer to steering wheel
        - increase risk of lower extremity injury
      - are more vulnerable to side impact (more of their head is in front of window)
  - **NASS CDS data**
    - Weight annual sample of US 5000 police reported tow away crashes
    - Collects data on
      - Occupant demographics
        - Age, sex, weight, BMI
        - Restraint use
        - Injuries obtained (via medical records and interviews)
          - Standardized into an abbreviated injury scale (AIS)
            - Examines fatality
            - Whole body and regional injuries
              - On 1-6 scale of severity
            - Vehicle properties
              - Type
              - Model year
            - Crash conditions
              - Estimated speed
              - Mechanism of impact

What we know from NHTSA data and **Insurance Institute for Highway Safety**

- Overall, males represent about 70% of overall fatalities for crashes
  - Greatest gender differences is in 20-29 age group
  - Men more likely to have alcohol involved in accident
- On average men drive about 5000-6000 miles/yr more than women
  - Women more likely to work closer to home
    - Crashes more likely to be low speed and to occur in more congested areas
  - If a man and a woman are both in car
    - Males more likely to be driver
- **Summary of Bose study** **Vulnerability of female drivers involved in motor vehicle crashes: An analysis of US population at risk.**
  - Question they asked- for a comparable crash do male and female drivers sustain similar rates of injuries.
    - Examined injury outcomes in men and women using 1998-2008 NASS CDS data set
- For a comparable crash, women had 47% percent greater chance of being severely injured than men.
- Had a higher risk of chest and spine injuries.
- Of note the researchers controlled for weight and BMI.

Other evidence that the clinical relevance of studying different sized and biomechanical models in crashes is important is shown by data obtained in 2011 after the NHTSA changed their safety star ratings to include testing of a female sized dummy in the front passenger seat. Many cars found their ratings go down, for example the 2011 Sienna minivan saw its ratings for passenger frontal crashes go from 5 star to 2 after it was shown that at 35mph that 20-40% of female dummies were killed or seriously injured compared to the industry average of 15%.

Underscoring the “literal” blind spots that can occur if you don’t consider factors associated with diversity in study design, a recent study from Georgia Tech suggested that some of the visual recognition systems used that are critical for self-driving car safety may not adequately recognize dark skinned faces showing a 5% increased chance of error in recognition compared to that of fair skinned faces. Of note, there is a significant lack of gender and racial diversity in the self-driving car technology teams and in artificial intelligence/tech research overall.

Who makes up the team influences what gets studied, click here for a recent Lancet article and here for a Nature Human Behavior one both showing that sex-related outcomes are far more likely to be reported in medical research consisting of diverse teams.

Take home points

- Including the variables of biological sex and gender in research results in better science and has led to the discovery of huge knowledge gaps that need to be closed if we want to optimize the care of all of our patients.
- Our historical medical research model has been predominately based on the study of male animals. There are multiple reasons for this including a true belief that: outside our reproductive zones that men and women are exactly the same; using males animal produces cleaner data; and including women of child bearing age in clinical research trials exposes women to unnecessary risks without significant benefit. We now know that all these reasons are fundamentally flawed. Every cell has a sex and the differences between men and women outside their reproductive zones are often quite clinically important.
- Studying males and females side by side helps us to optimize the care of both sexes. In women it allows us to double check that therapies that were originally developed in men actually work in women and have the same benefit/side effects profiles. And for men, in instances when it is discovered that women have more favorably outcomes, it allows us to go back to the lab, figure out why there is a difference and then to use that knowledge to develop new therapies to help men.
- To move the scientific community and its deeply ingrained culture to a new model that incorporates the variables of sex and gender will require a comprehensive multi-targeted approach. Key considerations include- engagement, education, skill building around research methodology and analysis, mentoring and funding incentivization. Of note institutional review boards, journal editors, grant reviewers and conferences directors have great power to jump start this transition by including an expectation of sex and/or gender inclusion in submission requirements.
- As we live in an ever increasingly complex world, now more than ever, it is essential that we pay attention to who is actually doing the research and developing new technologies. A diverse world requires diverse teams.

Next month we will look at the science pipeline from bench to bedside to identify opportunities to do better science.

SEX & WHY EPISODE 10: HOW TO GIVE BETTER FEEDBACK
Jeannette Wolfe / January 29, 2019 / Podcast Episodes / Leave a Comment
Show Notes for Podcast Ten of seX & whY

Host: Jeannette Wolfe

Guests: Adam Kellogg, Associate residency directory and medical education fellowship director UMMS – Baystate and Mike Gisondi, Vice-chair of education at Stanford

Topic: How to Give Better Feedback

What is bad feedback –

- Vague
- Nonactionable
- Feedback on non-malleable attributes – like gender, age
- Sandwich model
- Done in public place in front of peers

Know what role you are playing (from Thanks for the Feedback)

- Cheerleading: encouragement
- Coach: real time pointers
- Evaluator: comparison of performance to peers or expected benchmark

We are most effective giving and receiving feedback if expectation of roles match up – ie a novice putting in their first central line needs a coach not an evaluator.

Radical Candor- Develop as a Leader and Empower your Team by Kim Scott

- Caring personally
- Challenging directly

Feedback formula by Lisa Stefanar KSE leadership

- Ask permission
- State intention (be a better doctor)
- State behavior
- Describe impact
- Inquire about learner experience
- Identify desired change

General tips

- Feedback is also received best if the learner has a sense of belonging and a believe that you recognize their potential
- Is it the right time (asking them helps)
- Praise in public, give tough feedback in private
- Label it – as in “I’d like to give you feedback, is now a good time?”
- If you anticipate that you might get emotional during feedback, prepare and practice a response. For example, “I obviously have a powerful response to this information could we please take a 5 min break and regroup”
  - Emphasize your desire to hear feedback
  - If needed ask for clarification
- If you are giving feedback and the other person becomes emotional
If you are giving feedback and the other person becomes emotional:

- Consider using “Name and Tame strategy
  - “Last time I gave you feedback, I noticed that you did…….. and I have to tell you, honestly now I'm a little more hesitant. As I want you to be the best doc you can be, is there a particular way that would work best for you to receive feedback?”
- Switch-tasking: many times conversations can change
  - Recognize which conversation you are going to tackle
    - The one about a specific behavior
    - The one about an emotional tag

**Suggested books**

Thanks for the Feedback- Douglas Stone Sheila Heen

Radical Candor by Kim Scott

Articles by Mike Gisondi and Lisa Stefanac and the Feedback Formula

https://icenetblog.royalcollege.ca/2018/10/02/the-feedback-formula-part-1-giving-feedback/


Harvard Business School article on gender differences in receiving feedback: https://hbr.org/2016/04/research-vague-feedback-is-holding-women-back

Harvard Business School article with deals with managing emotional response to feedback:


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**SEX & WHY EPISODE 9: GENDER DIFFERENCES IN RESIDENT EVALUATION**

Jeannette Wolfe / December 3, 2018 / Podcast Episodes / Leave a Comment

**Show Notes for Podcast Nine of seX & whY**

Host: Jeannette Wolfe

Guests: Dr. Dan O’Connor, Dr. Anna Mueller

**Topic: Gender Differences in Resident Evaluation**

Welcome back to Sex and Why. In this episode I am joined by Dr. Dan O’Connor, a dermatology resident at Harvard and co-founder of Monte Carlo software that makes apps for medical educators, and Dr. Anna Mueller, who is a medical sociologist and Professor in the Department of Comparative Human Development at the University of Chicago. They are here to discuss their research showing gender disparities in evaluations of emergency medicine residents.
First study

Comparison of Male vs Female Resident Milestone Evaluations by Faculty During Emergency Medicine Residency Training. JAMA Internal Medicine 2017

This study examined data from a real time milestone evaluation app used on emergency medicine residents. It involved 356 residents (66% male 34% female) and 285 faculty (68% male and 32% female) at 8 different sites and included over 33,000 evaluations. They showed that although male and female residents had similar evaluations during their first year of training, by their 3rd year male residents were evaluated statistically higher across all 23 core competencies and this occurred regardless of the gender of the evaluator.

Second study

Gender Differences in Attending Physicians’ Feedback to Residents: A Qualitative Analysis. Journal of Graduate Medical Education

This follow up study was done to better understand why there are gender differences in the evaluations and focused on a qualitative analysis of comments written about third year residents at one of the above program sites. It involved analyzing and creating summaries of individual residents (who had at least 15 written evaluations) and included an analysis of over 1000 comments on more than 45 residents.

General findings:

- Evaluations often contained personality related comments even when the task that was being evaluated was objective or technical
- Men, compared to women, appeared to have more comments associated with praise versus criticism around these personality related comments
- Men appeared to have more concordant feedback by evaluators concerning how to improve in areas in which they struggled
- Women received more discordant feedback about ways to do things better in areas in which they struggled especially surrounding issues about autonomy and leadership
- Evaluators perceived that women were less likely than men to receive feedback appropriately.
- Evaluators were more likely to include encouraging comments concerning “a sense of belonging” to male residents

Steps moving forward

- Take a deep breath- this is difficult stuff to discuss and it can easily feel like an attack upon our character.
- Come to terms that this data is real and legit. This topic is incredibly important and we need to consciously move past our own visceral discomfort of it to find better ways to teach and evaluate the next generation of doctors.
- Do a private audit of your own evaluations
- Be more objective in suggestions for improvement
- Reinforce a sense of belief in ability and of belonging

Stay tuned for next month in which we will tackle feedback.


Additional studies we talked about

MRI study about political views—evaluated how individuals with definitive political views may process contradictory information differently than individuals with more flexible mindsets. Kaplan, J. T., Gimbel, S. I., & Harris, S. (2016). Neural correlates of maintaining one’s political beliefs in the face of counterevidence. *Scientific Reports, 6*, 39589. Retrieved from [http://dx.doi.org/10.1038/srep39589](http://dx.doi.org/10.1038/srep39589)

Thoracic surgery study that suggests that male surgical fellows may actually receive more advanced operative experience than their female matched peers


JAMA study perceiving gender differences in implicit bias in academic medicine


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**SEX & WHY EPISODE 8: INFLUENCE OF TESTOSTERONE AND CORTISOL ON DECISION MAKING**

Jeannette Wolfe / August 9, 2018 / Podcast Episodes / Leave a Comment

**Show Notes for Podcast Eight of seX & whY**

**Host:** Jeannette Wolfe

**Guest:** Dr. John Coates

**Topic: The Influence of Testosterone and Cortisol on Decision Making, With Neuroscientist Dr. John Coates**

Dr. John Coates is a neuroscientist and author of *The hour between dog and wolf- how risk taking transforms the body and mind.* He is an ex-trader and now runs Dewline Research. He studies how subtle unconscious changes in an individual’s physiology can shift their decision making and is particularly interested in the roles of testosterone and cortisol. He is specifically focused on how the fluctuation of these hormones might influence volatility in the stock market. As it appears that both successful traders and emergency medicine are required to make high impact decisions in novel and often unpredictable situations, I think there is much we can learn from his work and I am thrilled he could join us for this discussion.

Before we delve in, I’d like to remind folks that my interest in this material is to better understand how individuals and teams can optimize their performance under stress. The material we are covering in this podcast— the possible influence of sex hormones on decision making— is undoubtedly going to make some listeners uncomfortable. I truly believe, however, that this topic is important and deserves an honest and curious appraisal. To be absolutely clear, I do not believe that there is a better sex equipped with a better brain, rather that there are simply different neurobiological ways that different brains use to approach and complete similar tasks. My goal here, is for us to develop better insight into how we individually react under different high stress scenarios. Hopefully, we can then use this information to explore new ways to play up our individual strengths and mitigate...
Scenarios. Hopefully, we can then use this information to explore new ways to play up our individual strengths and mitigate potential vulnerabilities. Let’s get started.

Over the years, Dr. Coates and his team have conducted some pretty interesting “field work” studies especially his 2008 study on London short traders. In that study his team took twice daily saliva samples in 17 male traders over an 8 day period and found:

- Both cortisol and testosterone levels varied greatly throughout the study
  - Mean daily cortisol levels increased as much as 400%
  - Afternoon cortisol levels increased as much as 500% (in an unstressed individual cortisol typically peaks in the early morning.)
- Elevated AM testosterone levels correlated with afternoon profitability
- Elevated cortisol levels correlated with market volatility (but interestingly not with simple losses)

Since then he has done several additional studies and concludes that the only way to really understand the bubbles and crashes of the stock market is by better understanding the human physiology of the traders. Here are some of his take home points.

- An individual’s risk preference is probably far more dynamic than previously believed and is impacted by subtle, unconscious, shifts in physiology
- Individuals can have different risk preferences in different domains (participate in dangerous hobbies but are conservative with their finances)
- Individuals with increased interoceptive awareness may be quicker to recognize anomalous blips of data buried within piles of “expected” information. This may contribute to the phenomenon of a “gut instinct”
- Hormonal fluctuations likely contribute to risk preferences
  - Increasing testosterone levels likely shifts risk preferences to make individuals more open to riskier endeavors
    - Young males in competitive situations may be particularly vulnerable as they have significantly higher levels of baseline testosterone than women and older men
    - This risk shift is likely even more dramatic in individuals taking unnecessary testosterone supplementation (which is now a 2 billion dollar industry with 2/3 of the individuals who use testosterone not having a medically indicated reason for taking it.)
  - Increasing cortisol levels (in particular chronically increased levels) likely shifts risk preferences in the opposite direction and makes individuals act more risk adverse.
  - As these hormonal shifts are occurring unconsciously, it is difficult for individuals themselves to recognize their behavioral shift and depending upon the situation external safeguards (perceptive team members, monitoring systems) could be helpful.

“Winner’s Streaks”

- In the research community there is still some controversy as to whether this phenomenon even exists or if such streaks simply represent statistical outliers that are selectively remembered due to their unusualness.
- Coates strongly believes that winner’s streaks are real and are crucial to understanding behavior under certain circumstances.
- There is good data in the animal kingdom to suggest that if two male animals are in a competition and if their size, motivation (i.e. being hungry versus well fed) and baseline aggression are all controlled, that the animal who wins that encounter will be statistically more likely to go on and win their next competitive encounter.

Some theories as to why this might occur:

- Actual competition gives each opponents and idea of how they might stand in future altercations
- Winners self-perception of their strengths increases, and they become more comfortable with additional confrontation
- The initial victory may physically increase the winner's resources allowing it to go into its next encounter with an advantage (i.e. access to more food increases its size)
A potential physiological contributor to a winner’s streak may be real time fluctuations in an individuals’ testosterone levels (and possibly a change in the sensitivity of their testosterone receptors). Although many things can cause fluctuations in testosterone levels, two things that appear to consistently elevate it are competition and winning.

Over a period of time, consistently elevated testosterone levels might offer an advantage by increasing:

- muscle mass
- hemoglobin/oxygen capacity
- confidence, persistence and increased risk taking
- desire to seek out novelty

Like most hormones, however, testosterone’s effects likely plot out on an inverted U shape curve in that depending on the circumstances:

- small increases of testosterone levels might be advantageous as a slight increase in risk tolerance may lead to increased reward
- at some point, however, risk becomes excessive and becomes a disadvantage
  - in animal research this may lead to:
    - patrolling of unrealistically large areas
    - increasing exposure to dangerous situations
    - increasing fighting
    - neglecting parental duties
    - loss of energy stores
  - Research in humans shows that increasing testosterone levels
    - Increases risk preference
    - Quickens reaction time
    - Defaults to automatic thinking
  - In high levels, especially if given exogenously can lead to
    - Euphoria
    - Mania
    - Impulsivity
    - Sensation seeking

Specific research done by Coates and his team

**Tennis experiment**

Question addressed: Are “winning streaks” a real phenomenon or simply statistical outliers?

What they did- Looked at large data base of historical tennis matches in which players who were similarly ranked went into an extended tiebreaker involving more than 20 points in the first set and in which the winner was determined by only two points. (They did this to essentially try and show that on the day of their competition that not only were both players similarly ranked but that they were also playing at a similar level- i.e. both were having a “good day”)

Results- Men (N=235 matches) who won their first set were 60% more likely to win second set but no significant difference in second set victory was found amongst women (N= 140), suggesting that this might be driven by testosterone as women have about 5-10% level of men.

**Cortisol study**
In this study Coates and his team were interested in how an acute and a chronic elevation in stress hormones might affect risk preference. Using data from one of their previous studies which showed that during a period of increased market volatility that traders had a 68% increase in their daily cortisol levels, they went back to the lab to try and replicate this finding and then test decision making in a more controlled environment.

What they did: randomized double-blind placebo controlled cross over-study involving 20 men and 16 women. In treatment arm, volunteers were given weight- based hydrocortisone 3x a day for 8 days to mimic cortisol increases seen in traders. All participants played a lottery style game in which they could choose an option in which they had a lesser chance of winning but a higher payout if they did, or a less risky option in which they had an overall increased chance of winning but at a lower expected payout. The game was played after acute and chronic dosing.

Findings- they did not find a difference in risk preference amongst volunteers after they received their initial hydrocortisone (as an aside, the literature on risk preference after acute cortisol increase is somewhat inconsistent) but in this study they did find that after 8 days of taking exogenous steroids that individuals became much more risk adverse and that men were affected more so than women.

Thoughts as to why chronically elevated steroids change our decision making

- Physical changes occur in the hippocampus that impair normal functioning (neurogenesis is suppressed and dendritic spines are reduced)
- Similarly, changes also occur in the prefrontal cortex
  - Negatively affect working memory
  - Decrease attentional control
  - Impair behavioral flexibility
- The amygdala, on the other hand, revs up, causing increased dendritic connections and increase corticotropin releasing hormone gene expression
- Bundled all together this may lead to:
  - Increased focus on imagined threat
  - Increased risk of anxiety, depression, and learned helplessness
  - Shift to habitual behavior and decreased motivation to try novel action

Using this data, Coates theorizes that prolonged periods of financial uncertainty in the stock market likely cause traders’ cortisol levels to increase and stay increased leading to an aversion to risk or an “irrational pessimism” that left unchecked can lead to a bear market.

Finally, attached below is a reference to a recent review article that Dr. Coates wrote summarizing his theories as to the relationship between cortisol and testosterone on bull and bear markets and emphasizing the importance of field work in scientific discovery and refinement.

To learn about some complementary research being done at Wharton check out this interview with Gideon Nave and Amos Nadler in which they discuss their recent work evaluating decision making in men using exogenous testosterone. They found that that although certain cognitive functions appeared unaffected (like doing math problems), men who were given testosterone gel were more likely to rely on their gut instinct when answering questions. Which, again, depending upon the circumstances could be potentially helpful or harmful.


SEX & WHY EPISODE 7 PART 2: CONCUSSIONS

Jeannette Wolfe / June 13, 2018 / Podcast Episodes / Leave a Comment

Show Notes for Podcast Seven of seX & whY, Part 2

Host: Jeannette Wolfe

Guests:

Dr. Neha Raukar, Emergency and Sports Medicine Physician

Katherine Snedaker, Executive Director of Pink Concussions

Topic: Sex and Gender Differences in Concussions

This is part II of our discussion about concussion with Katherine Snedaker and Neha Rauker.

Today’s podcast focuses on recovery and prevention.

Here are the take home points:

- Concussion research is rapidly changing, and it is important to stay up to date on the literature
  - There is a large NCAA study whose results should be released soon
- Concussion treatment has to be individualized as symptoms can vary tremendously both within and between the sexes. Overall, however, women appear to be at greater risk for having an increased clustering of symptoms and a prolonged recovery
- Cocoon therapy (being isolated in a dark room with no stimulation) is out and has been replaced by the concept of “relative rest” which is the idea that you can do activities that don’t exacerbate symptoms
- Screen time has pros and cons
  - Cons
    - the contrast of light between the screen and the environment and scrolling can lead to vestibular irritation
    - Much of the activities associated with “screen time” also increase cognitive demands
  - Pros
    - It often helps people stay connected with their social circles which can decrease feelings of isolation and depression
    - The new FDA blood test does not test whether or not someone has a concussion, it tests for specific proteins (UCH-L1 and GFAP) that are released by the brain into the blood after a severe injury and correlates with the likelihood of finding an intracranial bleed on CT
- Prevention research and intervention targets multiple different levels including:
Overall awareness
- Equipment - both in design and in proper fit
- Training of coaches/trainers
- Rule Enforcement
- Locker room culture

- Although sports related concussions get the most press, traumatic brain injuries lead to more than 2.8 million (2013 CDC data) emergency visits per year with car accidents, physical assaults and falls being big contributors.
- There is currently a large gap in treatment access and ownership for non-sports related TBI.

Thank you again to my guest!

Show Notes for Podcast Seven of seX & whY, Part 1

Thank you for Alyson McGregor for correctly pointing out that although the NIH, as of January 2016, does require its basic scientists to include both males and female animals in their grant proposals it is not called the “Research for All Act”. The Research for All Act of 2014 is actually a bill sponsored by Congressman Jim Cooper of Tennessee that would require, among other things, that the FDA have access to subgroup analysis of data by sex prior to granting expedited approval of a new product. As of now, this bill has not passed.

Host: Jeannette Wolfe

Guests:

Dr. Neha Raukar, Emergency and Sports Medicine Physician
Katherine Snedaker, Executive Director of Pink Concussions

Topic: Sex and Gender Differences in Concussions

Take home points

- The research behind traumatic brain injury is rapidly evolving as technology advances are allowing us to better understand how the human brain works and the nuances between male and female brains.
- We still have a long way to go because most of the basic science surrounding traumatic brain injury has been conducted on male animals.
  - In 2015 the NIH passed The Research for All Act that requires NIH funded basic science to include both male and female animals or be able to justify their exclusion.
- Men, compared to women, have an overall greater incidence of traumatic brain injury and this is likely associated with differences in risk tolerance and exposure to activities associated with potential injury.
- In situations in which risk exposure is the same - like playing basketball or soccer - after sustaining the same impact, women appear to have a lower neurobiological threshold to obtain a traumatic brain injury than men.
- Definitive/proportionate reasons for these differences are not fully understood, however possible factors include:
  - Weaker neck muscles.
Decreased neurobiological threshold for injury
Hormonal differences
Reporting bias - this theory is quite controversial and it was emphasized throughout the podcast that many athletes, especially at elite levels - will underreport symptoms regardless of their biological sex
Hormonal influences - it appears that a woman's vulnerability to traumatic brain injury may vary depending upon where she is within her menstrual cycle (with injury during the luteal phase leading to increased concussive symptoms) or whether or not she is on oral contraceptives (with some evidence that women on OCPs having decreased symptoms).
Symptoms of concussion can be broken down into different categories:
- Cognitive- issues with memory/concentration/fogginess
- Emotional- anxiety, irritability/sadness
- Somatic- headaches/ light noise sensitivity/nausea and vomiting
- Vestibular/Ocular- balance, eye tracking
- Sleep

References:

http://www.pinkconcussions.com/science/concussion-info/


MY TALK AT FEMINEM LECTURE SERIES, ON WORKING BETTER WITH OTHER WOMEN IN THE WORKPLACE

Jeannette Wolfe / March 22, 2018 / News / Leave a Comment

I was honored to give a talk at the 2017 FemInEM Lecture Series. FemInEm has posted the content of my talk on their site, along with a video.

You can read and watch “X” the Skid-marks – Why women put other women under the bus and how to stop it – on FemInEm’s site.

SEX & WHY EPISODE 6: NEW RULES FOR WOMEN

Jeannette Wolfe / February 21, 2018 / Podcast Episodes / Leave a Comment
Show Notes for Podcast Six of Sex & Why

Hosts: Jeannette Wolfe and Dr. Anne Litwin PhD

**Topic: New Rules for Women**

In this episode, Dr. Anne Litwin PhD joined me to discuss the findings of her book *New Rules for Women*. This book highlights the results of her extensive research on the challenges women can face when working with other women in a professional environment. Dr. Litwin, through her in-depth interviews of women across the globe and working in different industries, began to notice a pattern of expectations or so called “friendship rules” that women often carry into the workplace and innocently set them up for inevitable conflict.

The key components of the rules are as follows:

- Equality
- Loyalty
- Listening
- Sharing Confidences

The real kicker, however, is that it is actually considered **taboo** to talk about them. Litwin claims that as these rules are so deeply ingrained into females as young girls, that by the time they enter the workplace they are simply assumed truths.

These rules set up a catch 22 as the very nature of most work environments is competitive and hierarchical. As such, women may often find themselves in positions in which they are not “equal” and not able to unconditionally back each other up. The result is that the friendship rules will predictably get broken and if unchecked, potentially leave women feeling unsupported, backstabbed or disillusioned with other women.

Fortunately, there are a few suggestions to better manage these relationships.

- Break the taboo and actual **talk** about the inevitable catch 22 of women working together.
- Make a commitment to resist the temptation of indirect aggression and agree to handle conflict in a direct fashion.

Some suggested wordsmithing:

“you are a strong woman and I want to support you, there are going to be times when due to our different job descriptions that we will inevitably face conflict, I ask that when this happens that we agree to work through them in a professional respectful manner so that we can continue to support each other and do our jobs to the best of our abilities.”

“as we have different roles, there are going to be times in which I am going to have to put on my “professional” hat to do my expected job. To avoid confusion or misunderstanding, I will try and be as transparent as possible when I need to adopt that role.”

- Pre-empt anticipated conflict such as:
  - competition for promotion
  - predicted disagreement during meeting
  - hierarchical roles on a team under stress

Try to discuss expectations up front and identify new ways, understanding the above constraints, in which you can continue to support each other.

- Recognize and address blooming dysfunction early on (though it is usually helpful to wait until the emotional sting of a
This helps to avoid the “stockpiling” of perceived wrongs and to hopefully realign the relationship.

- Double check perceptions, it is possible that a woman may be acting in a way that is constrained by an organizational system and not necessarily their preferred choice.
- In teams, be clear about the shared goals of the team and delineate specific ways in which members of the team are expected to behave and communicate to fulfill these goals.

Resources
Anne Litwin’s New Rules for Women
Joyce Benenson’s Warriors and Worriers
Douglas Stone’s Thanks for the Feedback

Check out my “X- the Skidmark Talk” from the archives of the 2017 Feminem Fm national meeting.

Show Notes for Podcast Five of Sex & Why

Host: Jeannette Wolfe
Guest Host: Justin Morgenstern

Topic: Stress Response – Part 3

Tricks for optimizing performance under stress

Preloading

- Over train and begin to focus on how to recover from mistakes
- Invest in mindfulness
  - Meditate
    - Increases your awareness of your own physiological stress response
    - Can help you train to go back and forth from narrow to broad focus
  - Be Awed
    - Have gratitude for what is going right
  - Use a transition mantra as you walk into work and move from your personal to your professional life
- Appreciate the power of emotional contagion
  - Your mood influences your team’s performance
  - Acknowledge and celebrate team’s saves and successes
- Create safe communities in which you can talk and walk through difficult cases without shame or judgement
- Maximize environmental advantages
  - Have the right equipment and know where it is

In the moment

- When you are becoming aware of stress- acknowledge its presence and recognize that you can face it as a threat or a
When you are becoming aware of stress—acknowledge its presence and recognize that you can face it as a threat or a challenge and then deliberately and emphatically **choose challenge**

- Chunk down overwhelming situations into immediate next actions, when in doubt go to the head of the bed and check oxygen connections and monitor leads
- Access mental crutches—simple pneumonics, resource cards, or a favorite app to jumpstart your thinking until your frontal lobe comes back on line
- Consider cognitive reframing and brief emotional detachment
- Keep a talisman in your pocket—use for either spiritual strength or physical distraction
- Use Mike Lauria's pneumonic BTSF (Beat The Stress Fool)
  - **Breath**
    - Tactical breathing and controlling the breath
  - **Talk**
    - Positive self-talk
  - **See**
    - Visualize successful completion of the task
  - **Focus**
    - Use a trigger word
  - **Tips for breathing**
    - Consciously slow your exhalation
    - Belly breath in which your abdomen expands with inhalation
  - **Armor for negative thoughts**
    - Thank your brain for trying to keep you safe
    - "Thank you brain for trying to watch my back, but I've got this"
    - Recognize your thoughts as being "just thoughts"
    - Change "I can't do this" to "I'm having a thought that I can't do this and fortunately most of my thoughts don't equate actual reality"
    - Identify and label your patterns
      - "oh yay, I do this sometimes when I get stuck, but I can choose to do X, Y or Z instead" (repeating if needed.)
    - Internally shout at yourself (to snap out of an internal loop) and then remind yourself that you are trained and capable
    - Repeat a repetitive negative thought in a strange accent
    - Sing a repetitive negative thought
    - Refer to yourself as a third person
    - Touch something in front of you and describe its shape/temperature and texture
    - Acknowledge that you are stressed but decide to **just do it anyways**
  - **Tricks for focus words**
    - Consider single word describing next critical action ("drape", "needle")
  - **After the stressful event**
    - Anticipate parasympathetic backlash
    - Consider cognitive offloading
      - Have a check list
      - Use time outs
        - Creates a shared mental model of critical actions
        - Allows for information exchange
        - Reinforces value of team
        - Appreciate that cortisol spiking may subtly shift your tolerance for risk and could potentially impact clinical decision making
      - Take a break
        - Eat and drink something (preferably without caffeine)
        - Emotionally recharge
      - After the shift
Selected Resources

Meditation App- Insight Timer

Justin Morgenstern’s Performance Under Pressure blog: https://first10em.com/2017/03/13/performance-under-pressure/

Adrian Plunkett’s SMACC talk https://www.smacc.net.au/2017/02/learning-from-excellence/


Markway B, Stop Fighting your Negative Thoughts, Psychology Today May 7 2013 https://www.psychologytoday.com/blog/shyness-is-nice/201305/stop-fighting-your-negative-thoughts

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**SEX & WHY EPISODE 5 PART 2: STRESS RESPONSE**

Jeannette Wolfe / November 9, 2017 / Podcast Episodes / Leave a Comment

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Show Notes for Podcast Five of Sex & Why

Host: Jeannette Wolfe

**Topic: Stress Response**

*For Acute Care Medicine and Introduction to Sex and Gender Based Medicine CME Cruise Opportunity* [click here]

Part 2 on biological sex differences in the stress response with special guest Justin Morgenstern

We started out with a discussion on different ways to frame potential sex and gender based research using a method described by Dr. M McCarthy

A full discussion of this framework can also be found on my [website](#)

There appears to be a significant amount of individual variation in how some individuals respond to and recover from similar stresses. Some of these differences may be influenced by our biological sex. Understanding how we react and respond to stress and how this may perhaps differ from other individuals around us may help us better communicate and lead under stressful...
Study #1

This was a follow up study to an infamous study the same team did three years before in which they looked at sex differences in reward collection on a computer balloon game (Balloon Analogue Risk Task or BART). In this game, players got 30 balloons and the farther they pumped them up the more points they got however, each balloon was also set to randomly pop somewhere between 1-128 pumps and if the player popped their balloon before they cashed it in they lost points for that balloon. Study participants were randomized to control vs stress condition (placing hand in neutral versus ice water for 3 min) and then played the game. They found that in neutral conditions there was no significant difference in risk taking (number of pumps 39 for women versus 42 for men, but under stress women decreased their pumping to 32 while men increased to 48).

In this 2012 study, Lighthall’s group adjusted its protocol so that BART could now be played in an MRI scanner. Unfortunately, the new BART design subtly changed the game because now instead of going through 30 balloons, participants played the game for a set amount of time with unlimited balloons. This inadvertently added a second strategy to get lots of points as the new design allowed participants to get points by either pumping additional air into an individual balloon or rapidly moving through a greater number of balloons while pumping only a few pumps per balloon. Stress intervention was again either a cold or neutral temperature water bath and after submersion the researchers collected cortisol samples and scanned participants while they played the game.

Results- no difference in control conditions (room temp water) between men and women in number of balloon pumps or points earned

But under stress men acted more quickly and got increased rewards while women appeared to slow down their reaction time and decrease their rewards.

Men had higher baseline and stimulated cortisol but there was no difference b/w men and women in the amount of cortisol change between baseline and stressed condition.

Under basic non stress conditions- during the control testing it appeared that overall men and women utilized the same brain regions to complete the balloon task (i.e. suggesting that males and females approach the task by using similar neural strategies), however once stressed men and women seemed to use different areas of their brain. Men used their dorsal striatum and anterior insula more. Anterior insula has been associated with switching tasks from a riskier to a safer option (and in both sexes higher activity in this region correlated with higher collection rate) and the dorsal striatum is believed to be associated with obtaining predictable rewards and with integrating sensory, motor, cognitive and emotional signals.

Did not find that men had increased risk taking in this study but it may have been masked in that there was now a lower risk strategy available to them that still was associated with an increased reward (pumping balloon a small amount and quickly cashing in to get to next balloon).

Concept discussed is that under stress men may possible go into type one systemic thinking (automatic) while women may favor type 2 (deliberate cognitive inquiry).


Study #2:

Goal to determine if:

- Under equal subjective sensations of stress (i.e. men and women objectively rate their subjective level of stress the same on a 1-10 point scale) do men and women use the same brain circuitry to process stress or do they use different circuitries.

What they did:

- Collect cognitive, psychiatric, and drug use assessments on 55 men and 41 women aged 19-50
  - Exclusions TBI, psychoactive meds, history of substance abuse, preg, DSM-IV mental health disorder and currently menstruating or oral contraceptive use (to try and mitigate additional hormonal influences)
- Over course of 2-3 sessions put them into a MRI scanner and asked them to visualize neutral or stress inducing images (this technique has previously been validated and involved the subjects own audiotaped accounts of stressful –rated as greater than 8 on 1-10 Likert scale- or neutral experience) which was later played back to them in MRI scanner
- Asked them to rank their level of stress
- Looked to see which areas of the brain lit up under different conditions

Results

Men and women appeared to have different strategies for guided visual tasks in general regardless of whether listening to neutral or stressful recordings:

Men:

More likely to light up areas associated with motor processing and action.

Caudate, midbrain, thalamus, and cingulate gyrus and cerebellum

Women:

More likely to light up areas associated with visual processing, verbal expression and emotional experience

Right temporal gyrus, insula and occipital lobe

Women were also more likely to increase their HR regardless of condition (likely from having increased autonomic arousal- though other studies suggest that women have increased HR at baseline compared to men in general)

**Under stress men and women had firing in opposite directions:**

Men dampened while women increased firing in:

Dorsal Medial pre-frontal cortex, parietal lobes (including inferior parietal lobe and precuneus region) left temporal lobe, occipital area and cerebellum.

Believed functions of these different regions

**Dorsal medial frontal cortex** – executive functioning of cognitive control, self-awareness of emotional discomfort, strategic reasoning, and regulation

**Precuneus**– part of the parietal lobe associated with self-referential and self-consciousness
Inferior parietal lobe – cognitive appraisal and consideration of response strategies (also area often associated with mirror imaging)

Left temporal gyrus – processes verbal information

Occipital area – processes visual information

Cerebellum – besides coordinating motor movement also is involved in emotional and cognitive processing

“Taken together, the observed differences in these regions suggest that men and women may differ in the extent to which they engage in verbal processing, visualization, self-referential thinking, and cognitive processing during the experience of stress and anxiety.”

They also suggest that under stress men may feel anxious due to “hypoactivity” while women may feel stress due to “hyperactivity” in above noted regions.

Conclusion:

- Men and women use different neural strategies under stress even with similarly reported stress levels

This research is still clearly in its infancy but suggests that under stress some men, may turn down activity in areas of their brains involved in executive functioning and that this might increase their vulnerability to impulsivity. Conversely, under stress some women may actually turn up activity in these regions that could lead to excessive rumination and possibly depression. The authors then extrapolate their data to suggest that men and women might possibly benefit from different stress reduction techniques in that some men might benefit more from cognitive behavioral therapy which enhances frontal lobe firing and some women from mindful meditation which dampens it.


Study #3

This study literally looks at what conditions men and women might seek out increased physical interaction with their dog after an agility competition. The background here is that in 2000 Dr. SE Taylor questioned whether the flight of fight response which has classically been described as a “universal” stress response, was actually applicable to both males and females. She questioned how realistic it was for a female who might be physically smaller and less muscular than her male peer to successfully fight or run away from a potential attacker. She suggested an alternative response of “tend and befriend” which suggests that under stress that women may naturally migrate towards their children as well as others within their intimate circle with the belief that a larger group may offer protection and a pooling of resources. Additional support for this theory is the idea that oxytocin, which has receptors throughout the brain and is usually found in higher amounts in women, may be released during this affiliative behavior and help to dampen the physiological cortisol stress response.

This study was done to see if men and women seek out physical contact with another being (in this case their dog) in similar fashion when they are stressed. They chose to study human contact with a dog versus an interaction with another human to try and mitigate the influence of any “gender expectation” violations. Which in English means that if Rob would normally seek out Carol when he is stressed, he might decide not to do so in public (and in this case being videotaped) because he doesn’t want to appear “less masculine”. As public affection with one’s dog is considered less gender biased, the authors chose this interaction as a marker for affiliative behavior.

What they did: Videotaped and took cortisol saliva levels from 93 men and 91 women after they had run their dog through a competitive agility course. Recording and samples were taken as participants waited for their official score (although subjectively most participants pretty much already knew whether or not their dog had scored high enough to move on.) The researchers
Cara Delevingne is reportedly involved in a secret relationship with singer Halsey while their exes, Ashley Benson and G-Eazy are officially dating. G-Eazy was previously in a relationship with Cara's new rumoured love interest Halsey, 25, until they parted ways in 2018. According to The Sun, Cara - who currently resides in Los Angeles - has been enjoying a new romance with Halsey after separating from her actress beau a few months ago.

Results:

- 36 of results excluded because dogs did not finish course and were disqualified
- Overall there was no sex difference in total affiliative behavior
  - Of first 180 seconds of video tape women petted dog on average 27 seconds and men 25 seconds
- When men and women perceived they lost, their cortisol level increased more than those who perceived they had advanced.
  - Differences occurred however as to when men and women were more likely to pet their dogs
    - Women petted them more when they sensed defeat – an additional 12 seconds compared to women who had won
    - Men petted them more when they sensed victory – an additional 7 seconds when compared to men who had lost

Conclusions: women sought out affiliative behavior when they lost, men sought it out when they won.

Justin and I use this paper as a discussion point as to understanding how two people may get exposed to the same stressor and respond quite differently and importantly how they sort of bounce back from a stressful situation may also differ. This paper suggests that emotional debriefing after stressful experiences may be more helpful to some individuals than others.

For more on the stress response please see Justin’s new post on First10EM

Open relationship. The same-sex couple have apparently kissed in front of their friends but aren't in an exclusive relationship and are both free to date other people. Read more: Cara Delevingne is secretly hooking up with pop star Halsey three months after their exes got together. Sex plays an important part in everyone’s life and in relationships. It is just the excessive thought about it which make it troublesome. Hope this answer helps. Why am I telling you this is because, when I was in the hospital for 7 days, I did not think about sex; not even for one second. Because I was trying to survive from the disease. Now you know that why you can’t stop thinking about some things. In the episode before this Dr. Cox I’d named chief of medicine and in episode 11 Kelso is still chief in the princess episode. Are you interested in what everyone thinks of Season 9 or why the music is different on Netflix? These questions have been asked a ton of times. DO use your own discretion with spoilers, especially with titles. If a user says they're still watching the show for the first time then please use spoiler tags when necessary: [X Kills Y] (/spoiler), ex: X Kills Y. DO NOT Post your personal text, facebook, DM, etc conversations. They will be removed. DO NOT use hate speech/slurs or use personal attacks.