

Challenges of Consulting: Experiences of Real Biostatisticians

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Outline

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Introduction

- Purpose
- What is a statistical consultant?
 - Informed Advisor
 - Relationship Builder
 - Attentive Listener
 - Feedback Provider for the Field of Application
- Who is the expert?

Methodology

- Interviewed 6 Vanderbilt Departmental Biostatisticians
- Transcribed and Verified
- 2 Staff and 4 Faculty
- 2 English as Second Language Speakers
- Experience as a Biostatistician Varies between 4 and 30⁺ Years
- Anyonymity

Consultant/Client Relationship Ego States (Boen & Fryd, 1978)

- Critical Parent – Enforces rules, criticizes, punishes, and scolds
- Nurturing Parent – Comforts and helps “needy” and “vulnerable”
- Adult – Rational and objective
- Adapted Child – Pleases, placates, conforms, and obeys authority
- Free Child – Freely expresses delight or disappointment
- Rebellious Child – Feels hurt and anger and seeks retribution

Consultant/Client Relationship: Consultant as a Parent (Boen & Fryd, 1978)

- Most clients expect an Adult – Adult state
- Adapted Child
 - They apologize for their “ignorance;” helpless; need rescuing.
 - They cooperate with a Nurturing State parent.
 - A Critical Parent may cause withdrawal or failure to come back, the Rebellious Child.
- Rebellious Child
 - Withhold key information
 - Do not want to come to a consultant
 - May want an Adapted Child or Nurturing Parent
 - Critical Parents dissuade them from discussing study weaknesses; nurturing parent helps them cooperate.

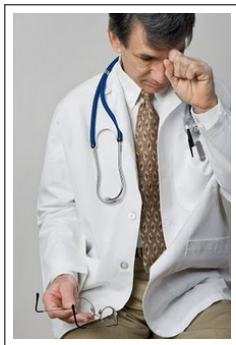
Consultant/Client Relationship

“Many clients have a powerful preconceived image of statisticians as Parents. They fear being belittled to their faces or gossiped about for not being good at logical reasoning.” (*Boen & Fryd, 1978*)



Consultant/Client Relationship

“The research worker has labored arduously, long, and often imaginatively to synthesize his product. His work. . . magically represents an extension of his personal value.” Naturally, he is sensitive and pained. (*Hyams 1971*)



Consultant/Client Relationship: Consultant as a Child (Boen & Fryd, 1978)

- Clients who see the consultant as a child fail to understand what the consultant does.
- They expect the consultant to be an Adapted Child
- Being placed in this role may cause the consultant to become a rebellious child
- Rebellious Child
 - Lacks time for the client
 - Recommends complex statistics books
 - Suggest taking a statistics course

Consultant/Client Relationship: Consultant as a Rebellious Child (Boen & Fryd, 1978)

- What causes a consultant to become a Rebellious Child?
 - Asking them to be a clerk/technician
 - Unreasonable deadlines
 - Sending a messenger with a poorly designed study
 - Requests inappropriate statistics

Scenarios 1: Plead the 5th

- Early in Bill's career, a senior faculty member notoriously known for degrading and embarrassing residents approached him with a statistical question.
- Bill did not know the answer.
- After meeting a few additional times, the client began to harass and disrespect Bill irately asking, "Are you going to find out (how to solve my problem)!?"

Scenarios 1: Plead the 5th

- How do you deal with an obnoxious client?
- Discuss the Parent-Child relationship.
 - Critical Parent
 - Nurturing Parent
 - Adult
 - Adapted Child
 - Free Child
 - Rebellious Child
- Describe a time where you had to deal with an obnoxious client.

Brainstorming Ideas: Plead the 5th

- Drop them.
- Talk to your supervisor or boss.
- Breathe and bite your tongue.
- Be patient. Have someone read your emails for tone and quality.
- Tell the client that you will get back with them or that you are researching the problem.
- Have your supervisor talk to their supervisor.
- Teach people how to treat you.
- Keep your boss in the loop.

Bill's Response: Plead the 5th

- Bill answered, “No.” He decided that he was not going to work with the client.
- Because there was such a demand for biostatisticians, Bill was able to refuse the work.
- Admittedly so, had the client been more pleasant, he would have tried to find the answer.
- Bill says, he handled the matter somewhat childish.

Plead the 5th: What does this mean if you cannot refuse?

- Refusing is not very likely with today's collaboration plans.
- Try and cultivate people whom you like to work with and arrange funding in such a way that those who value you are provided your services.
- "One of the luxuries we have in biostatistics is we never have to give an instantaneous answer. One can get out of all sorts of trouble by admitting ignorance and taking a little time to try and figure out what the answer is."

Plead the 5th: What does this mean if you cannot refuse?

- “Use your PhD mentors to run interference. . . . It’s really not up to a Master’s level person to have to deal with turkeys.”
- “It IS the responsibility of faculty to protect the people who work under them.”
- “Faculty are less viable to attack.”



Consultant Difficulties

- Many consultant/client difficulties arise from a failure to establish common goals.
- Successful consultations had clear ideas of the purpose, their limitations, and communicated well.
- The greatest barrier to effective consulting stems from the consultant's attitude, expectations, and goals as opposed to client or project deficiencies.

(McCulloch, Boroto, et al. 1985)

Aligning Expectations (*Derr, 2000*)

- What is your role?
- What are the roles of others on the project?
- How will communications be maintained?
- What are the “deliverables?”
- What are the deadlines?
- How will you be compensated for your participation?
- What are acceptable statistical practices?
- What are the ownership rights?
- What stipulations are there for security and confidentiality?
- When is your participation finished?

Diffusing Negative Consultations

- Let Angry Client know that (*Boen & Zahn, 1982*):
 - You are not trying to talk them out of their anger
 - You want to understand their anger
 - You are going to accept their anger and agree that his anger makes sense from their point of view
- Improving Negative Consultations Depend on Lots of Factors (*Hyams, 1971*)
 - Acceptance of Early Negative Experiences
 - Awareness of Ones Motivation and Expectations
 - Better Understanding of the Client
 - The client has a need for the consultant to understand special qualities of his research

Scenario 2: “Specialists are people who always repeat the same mistakes.” Walter Gropious

- Theresa had a client who always wanted to mimic a published paper’s methodology.
- The client was typically interested in getting the same published statistical results.
- Once he presented published significant results with a binary outcome and 2-3 people per group. There were two groups.
- He could not understand why Theresa was unable to reproduce the published results with a larger data set.

Scenario 2: “Specialists are people who always repeat the same mistakes.”

- What is the best way to convince someone that the published way is not necessarily the best way?

Brainstorming: “Specialists are people who always repeat the same mistakes.”

- Check published paper for mistakes.
- Show why it's wrong.
- Recognize that sometimes the paper does NOT have a statistician.
- Stress modern methods to win the competition to publish.
- Stress that you want to publish in high impact factor journals.

Scenario 2: “Specialists are people who always repeat the same mistakes.”

- Initially he did not accept Theresa’s explanation of limitations of the study, flaws, and sample size.
- He believed if it were published, it must have been right.
- Theresa’s boss intervened.
- Given a second chance, she would have replicated a dummy data set giving conflicting results. She also would have communicated in non-statistical jargon and lead him through proper questioning.

Scenario 2: “Specialists are people who always repeat the same mistakes.”

- Discuss the Parent-Child relationship
 - Critical Parent
 - Nurturing Parent
 - Adult
 - Adapted Child
 - Free Child
 - Rebellious Child

- Discussion of Our Role of Educators

Educators: “Specialists are people who always repeat the same mistakes.”

- At minimum, consultants must be subtle educators (*Hyams, 1971*)
 - Simple Logic and Clarity of Statistical Methods
 - Do not Present too Much, too Soon
 - No Solutions too Complex for Client



Educators: “Specialists are people who always repeat the same mistakes.”

- A person's preference for learning is the same as their preference for communicating (*Derr, 2000*)
 - What has your client brought?
 - Outlines, graphs, study objects?
 - What resources does he/she use in interacting?
 - Diagrams, computer?
 - How does he/she use language
 - Abstractions, concrete examples, analogies?

Scenario 3: It's My Statistics and I Want it NOW!

- Melissa(alias) had a demanding client who ran a clinical trial.
- The client would yell and have tirades when things were not done WHEN he wanted and HOW he wanted them done.
- The client sent emails directly to Melissa's supervisee requesting tasks (i.e. He did not inform Melissa of these requests.).
- Melissa requested the client not contact her supervisee.
- Melissa would tell the client her time frame which many times was unacceptable. Unfortunately she once missed a deadline which resulted in the client criticizing her to her boss and others.
- What advice would you give Melissa?

It's My Statistics and I Want it NOW! What Actually Happened

- Melissa sent emails demonstrating the completed work and requests.
- The client was never happy. He would constantly ask for new analysis. It was not until the boss intervened that there was some resolution.

It's My Statistics and I Want it NOW! Given a 2nd Chance

- Melissa would not have accepted the project.
- If she had accepted, she would have told her supervisee to be nice to the client and be patient.
- If you must support the client, be noncommittal regarding deadlines. Mention that completion depends on a lot of things such as clean data and clear direction.
- Do not make emails personal.
- Outline specific goals and deadlines.
- Melissa says that you have to have an understanding boss. If the client is too upset, you have to be willing to allow them to complain.

The 12 Attributes of an Effective Industrial Statistician (*Snee et al.*)

- 1 Well trained in the theory and practice of statistics.
- 2 An effective problem solver
- 3 Good oral and written communication skills
- 4 Work within the constraints of the real world
- 5 Ability to use computers to solve problems
- 6 Familiar with the statistical literature
- 7 Understands the realities of statistical practice
- 8 Pleasing personality and is able to work with others
- 9 Highly involved in the solution of company problems
- 10 Able to extend and develop statistical methodology
- 11 Adapt quickly to new problems and challenges
- 12 Produces high-quality work in a timely fashion

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