The Society of Cost Estimating and Analysis

The Dayton Coster
Greater Dayton Chapter

Volume II, Issue III

April 2006

President's Message: Jeremy Mitchell

It's been an exciting year to this point and I am looking forward to what the rest of this SCEA year holds (the SCEA year runs from July – June). I thought that I would spend a few minutes recapping what we have done this year to date and preview some of the things that are on the horizon.

So far this SCEA year we have held two luncheons, released three quarterly newsletters, supported two charity events, proctored the CCE/A certification examination, held our first ever SCEA Networking Luncheon, and selected our local Greater Dayton award winners. The year has been very eventful and certainly rewarding to the active members of this organization.

We don't have much time left in the year, but we have a lot of interesting ideas to pursue before the year ends. First, you may have seen an email

(*continued on page 2)*

Upcoming Chapter Events

SCEA Luncheon ..... May/June
ASMC/SCEA Golf Outing ..... June 30

In This Issue

President's Message (continued)

soliciting nominees for the elected board positions for the 2006 – 2007 term. Three positions on the Greater Dayton SCEA Board are elected positions: Treasurer, Secretary, and President-Elect. I am sure that incoming President Linda Turner would welcome your nomination. If you are interested, please contact Charlie Kapaku (charles.kapaku@wpafb.af.mil).

We will be holding another luncheon in the near future as well. Not only will we provide the membership with a great speaker and timely topic, we will also be recognizing our local annual award winners at this event. Look for publicity in the next few weeks for all of the relevant information on the next luncheon.

The capstone event of the year is the National SCEA Conference being held from 13 – 16 June 2006 at the Sheraton Premier at Tyson's Corner, VA. This conference will provide you with the opportunity to refine your cost estimating skills, gain knowledge on current news and research, network with other members of the society, and obtain certification. More information on the National SCEA Conference can be found at http://www.sceaonline.org/.

The SCEA year will go out with a bang this year on 30 June 2006 at the Sugar Isle Golf Club. Though this year's golf outing will be held at a new location, there is no doubt that it will be the best outing yet.

So little time, so much to do. As always, I encourage you to participate in the local chapter. We have a lot of great ideas, but not always the manpower to carry those ideas through. As we begin to close out the year and focus on next year, consider running for office or volunteering for a non-elected position. Both you and the organization will benefit from your generosity.

Spotlight:

My name is Damian Gainer and I currently hold the position of Treasurer in the Greater Dayton Chapter of SCEA. I have been involved with SCEA for three years. I started as the Director of Publicity prior to my current position.

I have worked at ASC for the past four years. In my short time here I have worked in three different offices. I was first assigned to the Propulsion System Squadron as a Financial Manager for the F-15 & F-16 engines. I then rotated to the Simulator System Group to gain my first experience in cost estimating. I am currently assigned to the Special Operations Forces Systems Group as a Financial Manager on the CSAR-X program.

When I am not at work, I like spending time with my wife Danielle. We share our house with our two cats Lucy and Sophie. Danielle and I enjoy going on walks at the local parks and taking bike rides on any of the numerous bike paths in the area.

If there is anyway that the SCEA board could serve you better please don't hesitate to contact me or anyone else on the SCEA board.

LESSONS LEARNED/BEST PRACTICES

Methodological Decisions Imply Metaphysical Assumptions

By
Ross A. Jackson, Director of Education

Cost analysts may consider data to be *objective*. In addition, analysts may assume that the methodological treatment of that data, as long as the methodology is supported by practice, will lead to the generation of *objective* results. This is certainly a common construction of the nature of scientific inquiry. Further, it is not unreasonable to expect that one might view that the decisions made based on these *objective* outputs are free from undue bias. While this construction *might* be accurate, it is not so necessarily. Such a determination holds only under certain metaphysical constructions, most notably empiricism. Metaphysics may be understood as the study of that which is beyond the physical, or as the study of the essence of being (Lacey, 1976/1996, p. 205). And empiricism may be understood as the practice of relying on observation and experiments to determine understanding. Empiricism is often viewed as the school of thought in which its members subscribe to the view that it is through the collection of *objective* observational and experimental data that one may construct an understanding of the world. Kuhn (1962/1996) describes well the history of scientific revolutions and the role of "paradigms" in constructing worldviews, along with an explication of the "incommensurable" nature of different paradigms. A Kuhnian critique would acknowledge that empiricism, while ubiquitous and popular, represents only one of the competing metaphysical paradigms.

Just as some analysts assume the *objective* nature of their approach, many analysts eschew the theoretical aspects of cost analysis. Fewer analysts still embark on a study of the philosophical underpinnings of their discipline. Without an understanding of the philosophical basis of the material, one is really only playing number-games (e.g., sudoku), similar in both nature and consequence to Wittengstein's (1972) language-games. Cost analysis, as typically practiced, is based on the metaphysical assumption of empiricism. And while empiricism has had a very robust history, it is not the only metaphysical construction available. Phenomenology (Heideggar, 1926/1962) provides another, largely competing, worldview. One of the main positions associated with phenomenology is that it is *subjective* experience and one's awareness of abstraction that provides an understanding of the world.

One of the central questions in cost estimating is whether one is dealing with *objective* or *subjective* inputs. The bifurcation of data into *objective* and *subjective* categories, with the corresponding, conventional societal-valuations of *good* and *bad* respectively, is a potential consequence of metaphysical assumptions and is perhaps of little pragmatic (Rorty, 1982/1996) utility in cost estimating. A central metaphysical issue, of which this particular example is merely a pale manifestation, deals with the basis of human knowledge and understanding. The issue is not whether one can avoid metaphysical determinations in cost analysis, for the metaphysical assumptions are implied by one's methodological decisions. Instead, the question becomes whether or not cost analysts will make their metaphysical decisions consciously or not.

While the empirical tradition is certainly well respected, the term *objective* may, as typically used, be little more than a synonym for *good*. In contradistinction, the term *subjective* tends to evoke a negative response. Both terms are meant here to convey a value-neutral sense. While *objective* inputs are typically held as the ideal, the existence of *objective* inputs is not universally accepted. According to the Greek sophist Protagoras (Columbia World of Quotations, 1996), "man is the measure of all things…" That this statement has a valid figurative meaning requires only passing comment. However, documentation supports a potential literal interpretation of this quote as well, at least from a historical perspective. Early measurements of length were based on the foot, forearm, hand, thumb, etc. As standardization became more important, measures were based on the measurements of the king. This method of *standardization* resulted in different systems of measures from reign to reign, and from kingdom to kingdom. As the *standardization* has become more complete, it is perhaps all too easy to lose sight of the *subjective* origin associated with the nature of the generation of the system itself. One might do well to note that humans

(*continued on page 4)*

Methodological Decisions Imply Metaphysical Assumptions (continued)

create both the system and the method that is then used to measure phenomena. In the words of Piet Hein, as cited by Weick (1979), man is such that he "…himself draws the lines that he himself stumbles over" (p. v).

To further complicate our brief analysis of measuring, it is perhaps the case that one can never obtain a measurement of some thing, *in-and-of-itself*. Instead, one might only obtain a measurement of some thing, *as-it-is-being-measured*. These two types of *being* may not be the same. The physicists Niels Bohr and Werner Heisenberg described portions of this phenomenon in the principles of complementarity and uncertainty. The interrelationship between the person measuring and the measurement is further explored in the field of General Semantics. The founder of General Semantics, Alfred Korzybski (1933/2000) explains, "…there *is no* such thing as an object in absolute isolation…if there *is no* such thing as an absolutely isolated object, then, at least, we have two objects, and we *always* discover some relation between them…" (*emphasis in original*, p. 61). As a result of this interrelationship between the object being measured and the person measuring, one cannot know if the measurement reflects anything more *real* than the *object-being-measured-as-it-is-being-measured*. As illustrated by the Hawthorne Effect, the act of measuring something may have profound impacts on the nature of that which is being measured.

Notwithstanding the argument above, if *objective* measures are accepted *a priori* as theoretically possible, the completeness of *objective* measures is seriously questioned. According to Geyh (2003), "Lyotard writes: 'A layman's version of the de facto impossibility of ever achieving a complete measure of any given state of the system is provided in a note by Borges ['Del Rigor en la ciencia']. An emperor wishes to have a perfectly accurate map of the empire made. The project leads the country to ruin - the entire population devoted all its energy to cartography' (1984, 55). Borges's fable is an allegory of a new (and, according to Lyotard's view, post-modernist) paradigm of twentieth-century knowledge…" (p. 22). One lesson from this fable is that there are costs associated with every measurement, and costs associated with increasing the accuracy for any given measure. It is cost prohibitive to obtain perfectly accurate measurements; it *leads the country to ruin*. As a result, measurements tend to be only approximations and are therefore inherently incomplete. How, and where, one decides that the measurements are appropriately sufficient for one's purpose is a *subjective* decision.

Understanding the metaphysical nature of the situation, it becomes questionable why an analyst would assume the stronger claim of *objective* data, when it is unclear what such a claim actually provides an analyst, apart from the obvious rhetorical significance of the claim itself. In essence, an analyst *subjectively* determines a methodology and a data source. The analyst then makes some determination in regards to the *objective* nature of the data (likely assuming that the data one is using are *objective*--and defending the data in reference to its *objectivity*). Lastly, the analyst makes a *subjective* determination as to what the results of one's analysis *means* within the given context. Metaphorically, it is as if one assumes that there is a layer of *objectivity* in one's *subjective* sandwich. If the process begins and ends with *subjectivity*, what utility is derived from the assumption that the middle is *objective*? It is possible that given such a situation, one might be well served to assume the lesser claim of *subjective* data. This is especially relevant given that there are competing metaphysical paradigms that disagree on the very existence of *objective* data.

From a practical perspective, this could mean that the *objective*/*subjective* argument in regards to inputs may not be the best way to frame an understanding of the issue. Using the term *objective* may imply a validity that is more misleading than helpful, or may presuppose the desirable characteristics that are sought. Instead, it might be better to define specifically what types of data collection characteristics are desired. As an example, one might want to avoid inputs that rely on expert opinion. This type of data source should be avoided, not because it is *subjective*, but because it is theoretically possible for two individuals to ask the same *expert*, the same question, and receive two different responses. In its place one may want to use a data set that can be obtained from a given database. This does not necessarily mean that the data contained in the given database are inherently *objective*, *accurate*, or *complete*. Such an approach should tend to increase the probability that the same data source will provide the same data set, and that by using the same procedure, the results generated in the initial estimate can be replicated in

(*continued on page 5)*

Methodological Decisions Imply Metaphysical Assumptions (continued)

subsequent reviews. Thus the data used are defendable, not on the *objective*/*subjective* nature of the data, but on the consistency and verifiability of the data.

It is not uncommon to hear analysts say, "Let's see what the numbers say." Anthropomorphism aside, numbers don't--nor can they--speak. Quite literally, the numbers simply exist (anthropomorphically, numbers exist in a state of perpetual silence). It is only humans, with their capacity to create meaning, whom can interpret what a given result might *mean* within a given context. However, it should be well understood that these *meanings* do not follow directly from the data or the results. Further, there is no unique solution when it comes to *meaning-creation*. Instead, the conclusions one generates vis-à-vis data and results are more like the results of a Rorschach test; an individual reveals more about oneself by what one concludes rather than making an *objective* assessment of *reality* (whatever those two terms mean). Perhaps by being more aware of the metaphysical assumptions implied by one's methodological decisions, one can develop more nuanced conclusions that appreciate the multifinality (Bertalanaffy, 1969/2003; Hanson, 1995) of *meanings* as it relates to the interpretation of the results associated with cost estimates.

Ross Jackson is the Director of Education for the Greater Dayton Chapter of the Society Cost Estimating and Analysis and the Economics and Statistics Area Chair for the University of Phoenix, Cincinnati/Dayton campus. He is a cost analyst for the Aeronautical Systems Center, Acquisition Cost Division. Ross is currently working on his dissertation in Applied Management and Decision Sciences through Walden University.

REFERENCES:

von Bertalanffy, L. (1969/2003). *General systems theory: foundations, development, applications* (revised ed.). New York: George Braziller, Inc.

Columbia World of Quotations. (1996). Columbia University Press. Obtained online at the following website: http://www.bartleby.com/66/29/45329.html

Geyh, P. E. (2003). Assembling postmodernism: Experience, meaning, and the space in-between." *College Literature*. Spring, 1-29.

Hanson, B. G. (1995). *General systems theory beginning with wholes*. Washington, D.C.: Taylor & Francis.

Heidegger, M. (1926/1962). *Being and time* (J. Macquarrie & E. Robinson, Trans.). New York: Harper Collins Publishers.

Korzybski, A. (1933/2000). *Science and sanity: An introduction to non-Aristotelian systems and general semantics* (5th ed.). Brooklyn, NY: Institute of General Semantics.

Kuhn, T. S. (1962/1996). *The structure of scientific revolutions* (3rd ed.). Chicago: The University of Chicago Press.

Lacey, A. R. (1976/1996). *A dictionary of philosophy* (3rd revised ed.). New York: Barnes & Nobles Books.

Rorty, R. (1982/1996). *Consequences of pragmatism*. Minneapolis, MN: University of Minnesota Press.

Weick, K. E. (1979). *The social psychology of organizing* (2nd ed.). Reading, MA: Addison-Wesley Publishers.

Wittgenstein, L. (1972). *On certainty* (D. Paul & G. E. M. Anscombe, Trans.). New York: Harper Torchbooks.

COMMITTEE UPDATES

Greater Dayton SCEA Welcomes Dr. Edward White
By
Kevin Leverson

On March 14th the Dayton Chapter of SCEA held a professional luncheon at the Wright-Patt O'Club. Our speaker was Dr. Edward White, an Associate Professor of Statistics from AFIT. He delivered a presentation entitled, "A Multi-disciplinary Research Approach to Cost Estimating."

After performing statistical analysis in other disciplines for several years, Dr. White became interested in applying some of the unique, discipline-specific techniques to cost estimation and schedule analysis. Using a combination of logistic regression from the medical sciences and multiple regression from cost estimation, he was able to develop models with favorable regression results. His analysis is based upon readily available Selected Acquisition Report (SAR) data. Once he normalizes the various financial and schedule data, he will be able to develop more accurate and useful results. Even though his research is ongoing, he has written a white paper on the topic and plans to release his findings after several peer reviews. Stay tuned for more research on this topic and please join us for our next SCEA luncheon!

Dr. Edward White discussing modeling techniques used to assess cost and schedule growth.

Greater Dayton SCEA 2006 Award Winners
By
Bob Novak

The Greater Dayton Chapter of SCEA is proud to announce our 2006 award winners:

Technical Achievement: Ms. Candace Hendrickson
Education: Mr. Ross Jackson
Management: Capt Kyle Martin

Our winners will be formally recognized at our next SCEA luncheon. In addition, their award packages have been forwarded to the National Office of SCEA to compete at that level. Winners at the National level will be announced at the 2006 SCEA Conference, 13-16 June at Tyson's Corner.

Congratulations to all nominated. We had some great nomination packages. In you can, take a moment to congratulate our local winners. Thanks to all who took the time to nominate. And a special thanks to our past presidents that participated on our awards committee.

Best of luck to Ms. Hendrickson, Mr. Jackson, and Capt Martin as they compete at the National level!

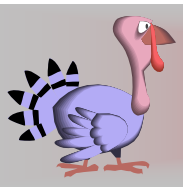
Please congratulate our most recent GS-13 promotee. Carrie Leber was selected to fill the GS-13 technical position in the C17 Systems Group. Congratulations Carrie!

SCEA Dayton Board Upcoming Elections

Nominations for the SCEA Greater Dayton Chapter Vice President/President Elect, Secretary, and Treasurer for the 2006-2007 term are open now through COB 15 May 2005. Self nominations are allowed. Nominations need only include the name of the nominee and the position the person is nominated for.

Please submit nominations via e-mail to charles.kapaku@wpafb.af.mil or ckapaku@mcri.com.

Elections are tentatively scheduled for 19 - 31 May.



Bowl for Kids Sake 2006
By
Janet Marshall

If you were at the Big Brothers Big Sisters (BBBS) of the Greater Miami Valley's Annual Bowl for Kids' Sake Fundraising Campaign on 11 March 2006, you would have seen lots of Turkeys (these are strikes, not people J) plastered on all the SCEA bowling teams' screens!

Anyways, 7 teams bowled to raise money for BBBS. At 14:00 on Saturday, 11 March 2006, at Poelking Lanes South, the following bowlers came out and supported a great cause. Thank you all for participating!

1 - Jeremy & Sara Mitchell, Damian Gainer, and Kayla Marshall
2 - Sharon Johnson, Monica Anders, Linda Turner, Jim Shaw, and Deborah Matulka
3 – Ron Vorhis, John Allen, Rich Williams, and Paul & Theresa Grissom
4 – Shirley Ark, Jeff & Linda Schwartz, and Jan Shaw
5 – Kortney Taylor, Kim Sanner, Rich Prim, Bill Reiley, and Brian
6 – Charles Kapaku, Liene Kapaku, Arnette Long, Anthony Long, and Allen Carlson
7 – Earl Kessinger, Sharon Jenkins, Kerrie Schieman, and Craig Shanske

High scorers included Anthony Long, Kerrie Schieman, and Rich Williams!! CONGRATS!

Great prizes were given out throughout the event. There were several BIG winners. One team won the 50/50 raffle and walked away with a group win of over $250. Others won big as well—a Van Dyne Crotty winter vest, a remote control car, and coupons for free games.

Lots of fun was had by all! Mark your calendars now for next year's BBBS scheduled for 10 March 2007!!!

Wanted:

Ways and Means Focal Point

Greater Dayton Chapter of SCEA

Duties: Lead the effort of identifying and coordinating fundraising activities for the Greater Dayton Chapter of the Society of Cost Estimating and Analysis.

Contact: Jeremy Mitchell

656-5500

jeremy.mitchell@wpafb.af.mil

The Society of Cost Estimating and Analysis

The Dayton Coster
Greater Dayton Chapter

If you have comments, ideas, or are interested in contributing an article to "The Dayton Coster", please direct them to Amy Balsamo at Amy.Balsamo@wpafb.af.mil.