Physics Integration Lesson 17 – What Does it Really Mean to be Balanced?

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Last semester the topic of balance came up in the context of lab eight. In that lab we tested the concept of torque by putting a bracket on a meterstick and placing it on a stand so it could pivot. Weights were added to each side of the pivot and then positioned so that the torques balanced each other. In this lab the balance is not a mechanical, but an electrical effect. Current flows through a circuit as a result of a voltage difference. If an alternate path is provided between two branches of a circuit, as in the Wheatstone bridge, current can cross over from one branch to the other. If the voltage level on each side of the bridge are equal, no current flows and the circuit operates as if the bridge were not present.

The integration lesson associated with lab eight focused on a physical balance or scale, which symbolizes justice and fairness. In this lesson I want to focus on having a "balanced perspective in life." In this context, balance means giving a fair hearing to opposing views and then making an appropriate response. This becomes challenging because people's worldview and perspective on life affects what they determine to be a balanced response. "Fair and Balanced" for Fox News is different than "Fair and Balanced" for Cable News Network (CNN). So how can fairness be resolved?

By holding to the existence of absolute truth, the standard of fairness and balance is no longer personal opinion, but rests on an objective standard. It was once thought that Hegel's dialectic provided a basis for determining the objective standard through a rational discourse between people of differing opinions. The process of proposing a thesis and declaring a contradictory position, antithesis, provided the context for converging on a synthesis, which is closer to the truth. However, this process cannot discover an objective, unchanging standard. There will always be another antithesis to the synthesis and as a result, 'truth' is always evolving.

In our society, science is held up as the objective authority upon which to base our responses. It now becomes the objective standard rather than rational discourse. However, science is inherently a human activity. Since humans cannot be everywhere at all times, there are significant gaps in knowledge. Our ability to control factors during scientific experiments is limited and, therefore, we may come to false conclusions when generalizing our observations. The process of doing science is contingent on our assumptions about how the world works and our role in the world. However, these assumptions are faith-based and influenced by our worldview. Although the discoveries of science play a valuable role in our lives, they cannot provide a basis for an objective standard for purpose, value and fairness.

This is why Scripture, revealed by the Creator, is so important. It transcends human rationality and scientific discovery because it is a communication to mankind of God's purposes that cannot be known by any other means. Scripture is truth (John 17:17) and cannot be expanded through the dialectic of thesis, antithesis and synthesis. Any synthesis between truth and other knowledge cannot be superior to the original absolute truth. This process does have the danger of synthesizing truth and error, which results not in balance, but in abandoning truth for a different form of error. If balance is desired when working with truth, it is not by changing truth, but by applying truth in a loving fashion (Ephesians 4:15).

1. An aspect of balance not yet explored is that of balancing the priorities in life. From selfimprovement books to life coaches, living a balanced life is a common theme. Is the idea of a "balanced life" a biblical concept? If so, how would you support it with Scripture? If not, what is a better way of expressing the concept of a balanced life?

2. Balance, as an object lessons, is effective if the analogy holds up across multiple disciplines and aspects of life. Depending on your answer to question 1, you might or might not feel 'balance' can be used as an object lesson to illustrate a spiritual principle. However, you should be able to generate a memorable way of illustrating 'balance' in an area of life outside the field of physics. If you were to teach 'balance' for a non-science subject, what points would you want your students to remember about balance and what would you use as an object lesson to reinforce at least one of those points?