

The Glucose Model of Mediation: Physiological Bases of Willpower as Important Explanations for Common Mediation Behavior

Roy F. Baumeister, PhD¹
W. Scott Simpson²
Stephen J. Ware³
Daniel S. Weber⁴

Success in life requires the ability to resist urges and control behavior.⁵ This ability is commonly called “willpower,” the capacity to overcome impulses and engage in conscious acts of self-control.⁶ Social psychologists

1. Roy F. Baumeister, PhD is the Francis Eppes Eminent Scholar and Professor of Social

2. W. Scott Simpson is the managing member and founder of Simpson, McMahan, Glick & Burford, PLLC. He is also a certified mediator and arbitrator, and an adjunct professor at the Cumberland School of Law in Birmingham, Alabama. His experience as an advocate includes mediating roughly 100 cases in over 26 states.

3. Stephen J. Ware, Professor of Law, at the University of Kansas, is the author of *PRINCIPLES OF ALTERNATIVE DISPUTE RESOLUTION* (2d ed. 2007). He thanks Sarah Cole and Lou Mulligan for their insights and Abigail West, Tyler Holmes, and Mark Wilkins for excellent research assistance.

4. Daniel S. Weber is a practicing attorney with Simpson, McMahan, Glick & Burford, PLLC in Birmingham, Alabama.

5. ROY F. BAUMEISTER & JOHN TIERNEY, *WILLPOWER: REDISCOVERING THE GREATEST HUMAN STRENGTH* 33 (2011).

6. Matthew T. Gailliot & Roy F. Baumeister, *The Physiology of Willpower: Linking Blood Glucose to Self-Control*, 11 *PERSONALITY & SOC. PSYCHOL. REV.* 303, 303 (2007), available at <http://psr.sagepub.com.lib.pepperdine.edu/content/11/4/303.full.pdf+html>.

believe willpower is a finite resource dependent on physiological bases including glucose (from food and drink), sleep and other forms of rest, and the absence of stress.⁷ In short, people who are hungry, exhausted, or highly stressed tend to have less willpower than those who are well-fed, well rested, and relatively stress-free. In addition, a person who exerts self-control (uses willpower) tends to temporarily reduce the amount of willpower remaining, so decision making and other aspects of self-control are weakened during this depleted state. Restoring willpower (and thus, restoring decision making abilities) can often be achieved by physiological replenishment, such as: ingesting glucose, sleep (and other forms of rest), and breaks from stress.⁸

The physiological bases of willpower combine with the importance of deadlines to offer a compelling explanation for why so many mediations follow a predictable pattern.⁹ Most significantly, the physiological bases of willpower go a long way to explaining why many mediations scheduled for a single day begin with stalwart opening positions and end with a signed settlement agreement late in the day. This article will provide a physiological explanation of typical mediation behavior and show that an awareness of physiology reveals ethical issues with current mediation practice. Part I of this Article will discuss the science, specifically the Strength and Glucose Models of Self-Control and their applications across studies of medicine, morality, and negotiation. Part II will outline the course of a typical daylong mediation and will show the extent to which common mediation behavior is well explained by the physiology of willpower when people are operating under deadlines. Part III will examine the significance of the Glucose Model of Mediation by identifying ethical issues relating to willpower depletion in mediation.

7. *Id.*

8. BAUMEISTER & TIERNEY, *supra* note 5, at 184 (2011); Matthew T. Gailliot et al., *Self-Control Relies on Glucose as a Limited Energy Source: Willpower is More Than a Metaphor*, 92 J. PERSONALITY & SOC. PSYCHOL. 325, 325-36 (2007).

9. *See infra* Part II.B.

I. WILLPOWER SCHOLARSHIP

A. *Social Psychology*

1. The Strength Model of Self-Control

Although the idea that the human psyche uses energy to restrain desires was prominent in Sigmund Freud's theories, subsequent work and theory in psychology downplayed energy concepts.¹⁰ However, in the 1990s, interest began to converge on the question of how people regulate their own behavior, including resisting temptations and impulses.¹¹ Efforts to elucidate the inner mechanism of self-control gradually led to the theory that a broad assortment of very different acts of self-control all draw on the same energy source.¹² In particular, experiments began to show that after exerting self-control on a first task, research subjects did relatively poorly on a second, unrelated task.¹³ In 1998, researchers opined that, "these studies suggest that whatever is involved in choice and self-control is both an important and very limited resource. The activities of the self should perhaps be understood in general as having to make the most of a scarce and precious resource."¹⁴

The concept of willpower drawing from a finite energy source began with the ego depletion hypothesis—"the temporary reduction in the self's capacity or willingness to engage in volitional action (including controlling the environment, controlling the self, making choices, and initiating action)

10. Roy F. Baumeister et al., *Ego Depletion: Is the Active Self a Limited Resource?*, 74 J. PERSONALITY & SOC. PSYCHOL. 1252, 1253 (1998) [hereinafter *Ego Depletion*]; see also Roy F. Baumeister et al., *The Strength Model of Self-Control*, 16 CURRENT DIRECTIONS SOC. PSYCHOL. 351, 351 (2007) [hereinafter *Strength Model*].

11. *Strength Model*, supra note 10, at 351.

12. See *Ego Depletion*, supra note 10, at 1252.

13. *Id.* at 1253-56.

14. *Id.* at 1263.

caused by prior exercise of volition.”¹⁵ Basically, the ego depletion hypothesis predicted that initial acts of self-control make subsequent and unrelated acts of self-control more difficult and less likely to succeed, presumably because the initial act depleted some resource that was no longer available for subsequent acts.¹⁶ In other words, the ego depletion theory depicted willpower as an energy source susceptible to depletion rather than a constantly applicable quality like a character trait.¹⁷ The accumulated evidence of ego depletion led to the formulation of the Strength Model of Self-Control.¹⁸

Early evidence for the Strength Model of Self-Control came from an experiment where food-deprived participants were placed in a room containing raw radishes and freshly baked cookies.¹⁹ Some participants were invited to eat cookies, while others were instructed to eat only radishes.²⁰ The experiment tested whether those assigned to eat radishes would be tempted to eat the cookies instead, and would have to exert self-control to resist that temptation.²¹ After several minutes, the food was removed and both sets of participants were asked to work on unsolvable puzzles.²² This procedure, borrowed from stress research, is designed to

15. *Id.* at 1253.

16. *Id.* at 1257.

17. *Id.* at 1254 (“In this view, acts of self-regulation involve some kind of exertion that expends energy and therefore depletes the supply available. Unless the supply is very large, initial acts of self-regulation should deplete it, thereby impairing subsequent self-control.”). *But see* W. Mischel, *The Nature of Adolescent Competencies Predicted by Preschool Delay of Gratification*, 34 J. PERSONALITY & SOC. PSYCHOL. 687, 687 (1988). This 1988 study initially recorded children’s willingness to delay gratification for a larger reward. *Id.* Ten years after the study, researchers mailed questionnaires to the participants’ parents and found that children who delayed gratification possessed higher academic, social and coping competencies. *Id.* at 688. These findings indicated that self-control was a long-term, inherent personality quality. *Id.* at 690.

18. *Ego Depletion*, *supra* note 10, at 1261; *see also Strength Model*, *supra* note 10, at 352.

19. *Ego Depletion*, *supra* note 10, at 1254.

20. *Id.*

21. *Id.*

22. *Id.*

assess how long people persevere before giving up. Participants who were invited to eat cookies persevered on the puzzle for an average of nineteen minutes, but the radish eaters gave up after an average of only eight minutes.²³ The researchers concluded that, “[r]esisting temptation seems to have produced a psychic cost, in the sense that afterward participants were more inclined to give up easily in the face of frustration.”²⁴ Another experiment asked one group of participants to write down whatever thoughts came to mind, but to try not to think about a white bear, while another group wrote freely with no restrictions on thoughts.²⁵ After the writing test, both sets of participants did the same test of perseverance on a frustrating, unsolvable puzzle.²⁶ As predicted, participants who had suppressed thoughts about a white bear while writing gave up significantly faster on the unsolvable puzzle than participants invited to write freely.²⁷ Such findings point to a conclusion that willpower was depleted by the first task (resisting the cookie temptation or suppressing taboo thoughts), leaving less available willpower for perseverance on the puzzle task.²⁸

Social psychologists soon extended the Strength Model of Self-Control beyond stifling impulses and thoughts to controlling emotions, impulses, and performance of tasks.²⁹ Even more dramatically, research found that making responsible decisions depletes willpower, so that after making choices, one’s self-control is impaired.³⁰ These results confirmed that completely unrelated

23. *Id.* at 1255.

24. *Id.*

25. See Mark Muraven, et al., *Self-Control as Limited Resource: Regulatory Depletion Patterns*, 74 J. PERSONALITY & SOC. PSYCHOL. 774, 780 (1998).

26. *Id.*

27. *Id.*

28. *Id.*

29. *Strength Model*, *supra* note 10, at 353 (2007); see also Mark Muraven et al., *supra* note 25, at 776 (explaining that “[r]egulating an emotion requires overcoming one’s current emotional state and replacing it with a different one”).

30. *Ego Depletion*, *supra* note 10, at 1256-57.

acts of volition draw from the same limited resource.³¹ Consequently, initial acts of willpower make all subsequent efforts of willpower more difficult and less likely to succeed, at least for a brief period. Researchers also found that the effects of depleted willpower extended to self-presentation, kindness in response to aggression, and dealing with demanding people.³² Furthermore, willpower depletion caused lapses in aggression control, monetary responsibility, and logical decision making.³³

Under the Strength Model of Self-Control, self-control is somewhat analogous to a muscle.³⁴ The basic effects of depleting self-control in the short-term (by using self-control) resemble a muscle becoming tired through use, and therefore, not working as hard.³⁵ Also, self-control can be improved over the longer term by its frequent exercise, resembling how a muscle increases strength from exercise.³⁶ Such strengthened willpower is more resistant to depletion, so will decline at a slower rate when exerted.³⁷ Finally, people tend to conserve what remains of willpower when it has been depleted slightly.³⁸ This too resembles how athletes conserve their strength after initial exertion but before long exertion.

31. *Id.* at 1257.

32. *Strength Model*, *supra* note 10, at 353.

33. *Id.*; see also Brandon J. Schmeichel et al., *Intellectual Performance and Ego Depletion: Role of the Self in Logical Reasoning and Other Information Processing*, 85 J. PERSONALITY & SOC. PSYCHOL. 33 (2003).

34. *Strength Model*, *supra* note 10, at 352.

35. *Id.*

36. R. F. Baumeister et al., *Self-Regulation and Personality: How Interventions Increase Regulatory Success, and How Depletion Moderates the Effects of Traits On Behavior*, 74 J. PERSONALITY 1773 (2006).

37. *Id.*

38. M. Muraven, D. Schmeichel & E. Burkley, *Conserving Self-Control Strength*, 91 J. PERSONALITY & SOC. PSYCHOL. 524, 524-37 (2006).

2. The Glucose Model of Self-Control

The Strength Model of Self-Control proposed that willpower is a variable capability dependent on fluctuating resources, instead of a stable character trait.³⁹ While the Strength Model's view of self-control as an energy source served as a convenient metaphor, it did not articulate the precise nature of the energy source itself.⁴⁰ After the development of the Strength Model, researchers sought to "flesh out that [strength] model by moving from metaphor to at least one plausible physiological process."⁴¹ Subsequent research showed that among the important physiological bases of willpower are: glucose,⁴² rest or sleep,⁴³ and the absence of stress.⁴⁴

39. Matthew T. Gailliot et al., *Self-Control Relies on Glucose as a Limited Energy Source: Willpower is More than a Metaphor*, 92 J. PERSONALITY & SOC. PSYCHOL. 325, 325 (2007).

40. *Id.* at 326.

41. *Id.* at 333.

42. *Id.* at 325-26.

43. ROY F. BAUMEISTER & JOHN TIERNEY, WILLPOWER: REDISCOVERING THE GREATEST HUMAN STRENGTH 251-52 (2011) ("Sleep is probably even more important than food: The more that researchers study sleep deprivation, the more nasty effects they keep discovering. A big mug of coffee in the morning is not an adequate substitute for sleeping until your body wakes up on its own because it has gotten enough rest. The old advice that things will seem better in the morning has nothing to do with daylight, and everything to do with depletion. A rested will is a stronger will."); *Id.* at 59 ("Adults routinely shortchange themselves on sleep, and the result is less self-control. By resting, we reduce the body's demands for glucose, and we also improve its overall ability to make use of the glucose in the bloodstream."); Rebecca Hollander-Blumoff, *Crime, Punishment, and the Psychology of Self-Control*, 61 EMORY L.J. 501, 542 (2012) ("[R]esearchers have suggested that sleep and rest, too, have a significant effect on the self-regulatory resource.") (citing Matthew T. Gailliot et al., *Self-Control Relies on Glucose as a Limited Energy Source: Willpower Is More than a Metaphor*, 92 J. PERSONALITY & SOC. PSYCHOL. 334 (2007)); Jennifer K. Robbennolt & Jean R. Sternlight, *Behavioral Legal Ethics*, 45 ARIZ. ST. L.J. 1107, 1141 (2013) ("Studies have also found that unethical decisions are more common when the decision maker suffers from a lack of sleep or is otherwise cognitively taxed[.]").

44. BAUMEISTER & TIERNEY, *supra* note 43, at 33 ("[T]here's a common misperception that stress causes [various negative] emotions. What stress really does, though, is deplete willpower, which diminishes your ability to control those emotions."); Diane M. Tice, et al., *Emotional Distress Regulation Takes Precedence Over Impulse Control: If You Feel Bad, Do It!*, 80 J. PERSONALITY &

While most non-scientists' experiences may have taught them that exhausted and highly stressed people tend not to be at their best for decision making and other acts of self-control, non-scientists may be more surprised by the importance of glucose as a basis for willpower.

Glucose is a chemical in the bloodstream and constitutes the main source of energy used by the body and brain.⁴⁵ Neurotransmitters are made from glucose, so glucose can fairly be described as brain fuel.⁴⁶ Unlike a muscle, however, the brain cannot synthesize or store glucose.⁴⁷ While most of the brain's involuntary functions (such as the regulation of the smooth muscles, heart, and glands) are not susceptible to minor decreases in glucose, controlled and effortful thought processes are.⁴⁸ Overcoming impulses by exerting willpower is a controlled and effortful thought process that depletes significant amounts of glucose.⁴⁹ Because of the significance

SOC. PSYCHOL. 53, 53 (2001) (stating that emotional distress is "detrimental to behavioral self-control"); Gary M. Lucas, Jr., *Paternalism and Psychic Taxes: The Government's Use of Negative Emotions to Save Us from Ourselves*, 22 S. CAL. INTERDISC. L.J. 227, 268 (2013) ("[T]emptation is not the only factor that can undermine willpower. Stress can also lead to unexpected lapses in self-control . . ."); Megan Oaten & Ken Cheng, *Academic Examination Stress Impairs Self-Control*, 24 J. SOC. & CLINICAL PSYCHOL. 254, 254 (2005); Walter Mischel & Aaron L. DeSmet, *Self-Regulation in the Service of Conflict Resolution*, THE HANDBOOK OF CONFLICT RESOLUTION 256, 270 (Morton Deutsch & Peter T. Coleman eds., 2000) ("Managing and reducing stress improves not only self-cooling and self-control but also one's ability to generate and assess possible solutions to the conflict. Because a high level of stress can shift the balance from cool-system dominance to hot, managing stress effectively can mean the difference between suppressing hot impulses and lashing out uncontrollably. But stress also tends to decrease one's ability to solve complex problems. So people who argue when they are stressed and fatigued often find that they lack the self-control they might otherwise have. Their problem-solving ability is also impaired, so stress doubly undermines any attempts to resolve conflicts constructively.")

45. Gailliot & Baumeister, *supra* note 6, at 306.

46. *Id.*

47. *Id.* at 304.

48. Gailliot et al., *supra* note 39, at 326.

49. *See id.* at 334 ("[R]elatively few psychological processes are as expensive as self-control in terms of requiring large amounts of glucose. There are two reasons for thinking that self-control is unusual, even if not unique. First, what it accomplishes is advanced and difficult Second,

of glucose for fueling the brain's functions, glucose was a natural place to start the search for the finite resources that fuels willpower.

To prove that glucose is among the resources that fuel willpower, researchers engaged in similar experiments that tested the Strength Model of Self-Control and measured participants' glucose levels before and after exercises of self-control. The experiments revealed two significant findings that have been confirmed by subsequent work: (1) low glucose after an initial self-control task was linked to decreased self-control on a subsequent task; and (2) replenishing glucose reduced or eliminated self-control impairments stemming from an initial self-control task.⁵⁰ The experiments also found that because willpower depends on glucose as fuel, decreased glucose causes a lack of capacity, not a lack of desire, to engage in acts of self-control.⁵¹ To be sure, it is often difficult to disentangle capacity and desire, just as in the case of physical exertions.

Currently, researchers are debating and studying the inner processes that use glucose and how those processes change after exerting self-control.⁵² Some authors contend that glucose from the bloodstream is used, whereas others argue that most brain functions use glucose from the body's stores.⁵³ Either way, the important fact is that exertion of self-control depends at least in part on glucose; so after initial exertion, less glucose is available for further self-control and decision making. As a result, initial exercises of

the widespread occurrence of self-control failures is evidence that self-control is not easy, and high metabolic cost would be one likely explanation for this.”).

50. *Id.* at 333.

51. *Id.* at 334.

52. See, e.g., D.C. Molden et al., *Motivational Versus Metabolic Effects of Carbohydrates on Self-Control*, 23 PSYCHOL. SCI. 1137-44 (2012).

53. C.J. Beedie & A.M. Lane, *The Role of Glucose in Self-Control: Another Look at the Evidence and an Alternative Conceptualization*, 16 PERSONALITY & SOC. PSYCHOL. REV. 143-53 (2012).

self-control temporarily reduce capacity for further exercises of self-control.⁵⁴

Importantly, researchers also found that ingesting new glucose can restore self-regulatory capability.⁵⁵ Allowing experiment participants to consume a glucose drink eliminated the tendency for an initial act of self-control to impair subsequent efforts of willpower.⁵⁶ In many studies, this has been done by giving participants a glass of lemonade, which has been sweetened with sugar (big dose of glucose) or a diet sweetener by random assignment.⁵⁷ The diet lemonade tastes good, but furnishes no glucose, and hence, has no restorative effect. Based on such evidence, researchers concluded that glucose was at least one physiological substance on which willpower depends.⁵⁸ The restorative effect of glucose replenishment on future acts of self-control was the most practically significant breakthrough of the Glucose Model of Self-Control. However, there is no linear relationship between glucose ingestion and willpower, such that ingesting copious amounts of glucose will increase willpower indefinitely.⁵⁹ Instead, glucose levels are either sufficient to retain willpower in a given situation or not. One author explained, “[g]etting more glucose beyond having enough will not yield further increments in self-control, whereas getting enough glucose to recover from a depleted state will yield improvements until the optimal level is reached.”⁶⁰

The Glucose Model posits that willpower is a finite resource dependent on glucose. In other words, low glucose translates to low self-control. While the Glucose Model refined the Strength Model, both models point to

54. M.S. Hagger et al., *Ego Depletion and the Strength Model of Self-Control: A Meta-Analysis*, 136 PSYCHOL. BULL., 495-525 (2010).

55. Gailliot et al., *supra* note 39, at 331.

56. *Id.*

57. *Id.* at 330.

58. Gailliot & Baumeister, *supra* note 6, at 304.

59. *Id.* at 306.

60. *Id.* at 307.

the same general conclusion—every exercise of willpower makes subsequent efforts more difficult and less likely to succeed, at least in the short run. The practical significance of the Glucose Model, however, was that restoring glucose reduces the effect of willpower depletion by restoring an important energy source on which willpower relies.⁶¹

B. Endocrinology

The Glucose Model of Self-Control is supported by endocrinology, the study of hormonal production within the body.⁶² As noted above, glucose ingestion and increased willpower do not share a linear relationship.⁶³ One reason for this is the distinction between raw glucose and metabolized glucose. Ingesting food or drink only increases raw blood glucose levels, or glycemia.⁶⁴ Insulin, a hormone secreted by the pancreas, breaks down glucose (so that tissues can utilize the energy) and returns blood glucose levels to their baseline levels.⁶⁵ Therefore, the exercise of willpower at any given time depends on the body's ability to metabolize available glucose.⁶⁶ Because of the interrelationship among glucose, hormones, and human behavior, endocrinologists incorporate many of the principles behind willpower into their research regarding hormonal regulation of glucose.⁶⁷

Studying people on the margins can reveal the significance of matters generally taken for granted, such as the impact of glucose on human

61. *Id.* at 326.

62. *See id.* at 306-07.

63. *See id.* at 307.

64. *Id.*

65. *Id.* at 306. Glucose tolerance refers to the body's ability to metabolize glucose from the blood and transport it to tissues such as the brain. *See id.* at 306-07.

66. *See* Gailliot & Baumeister, *supra* note 6, at 306.

67. *See* Patrick J. Lustman et al., *Relationship of Personality Characteristics to Glucose Regulation in Adults with Diabetes*, 53 PSYCHOSOMATIC MED. 305, 305 (1991); *see also* C. Nathan DeWall et al., *Sweet Revenge: Diabetic Symptoms Predict Less Forgiveness*, 49 PERSONALITY & INDIVIDUAL DIFFERENCES 823, 823 (2010).

behavior. Accordingly, the behavioral impact of glucose regulation is best seen in diabetics.⁶⁸ Diabetes, caused by a lack of or resistance to insulin, impairs glucose metabolism and requires some diabetics to inject insulin to regulate their blood glucose levels.⁶⁹ With impaired glucose metabolism, diabetics can suffer the effects of low blood glucose despite having extremely high blood glucose levels.⁷⁰ Depending on how closely they monitor their glucose levels, diabetics can suffer from mood changes and difficulty with memory, planning, and concentration.⁷¹

A 1991 study found that diabetics who regularly engaged in poor glucose control (e.g., failure to inject insulin when needed) exhibited more impulsive and explosive personalities than diabetics who monitored their glucose closely.⁷² Searching for clinical applications, researchers correctly hypothesized that, “those diabetic individuals who have extreme personality traits would be in poorer control than those with no recognizable personality abnormalities.”⁷³ Regular lapses in self-control by diabetics with poor glucose control show the significance of glucose metabolism on the exercise of willpower. This personality study, undertaken sixteen years prior to the Glucose Model of Self-Control’s promulgation, aptly stated, “It is possible that the identified personality features lead to poor glucose control or are the result of it. It is also possible that personality and glycemia interact in a more dynamic, reciprocal fashion.”⁷⁴ Other studies found that symptoms of

68. See Gailliot & Baumeister, *supra* note 6, at 307.

69. *Id.*

70. *Id.*

71. Eelco Van Duinkerken, *Cognitive Function in Diabetes*, DIAPEDIA: THE LIVING TEXTBOOK OF DIABETES, <http://www.diapedia.org/associated-disorders/cognitive-function-in-diabetes#fn:1> (last modified Aug. 13, 2014) (citing Brian M. Frier, *Hypoglycemia*, in DIABETES AND THE BRAIN (G.J. Biessels & J.A. Luchsinger eds., 2009)).

72. See Lustman et al., *supra* note 67, at 309 (“The principal aim of this study was to explore whether a self-report measure of personality could assist in identifying factors related to glucose regulation in diabetes.”).

73. *Id.* at 306.

74. *Id.* at 310-11.

diabetes, most notably low blood sugar or hypoglycemia, predict traits of aggression,⁷⁵ violence,⁷⁶ and lack of forgiveness.⁷⁷ Therefore, the impact on glucose levels and poor self-control is magnified in diabetics.

Fluctuations in glucose metabolism, however, are not limited to diabetics. Glucose metabolism, even in non-diabetics, varies according to the time of day.⁷⁸ Failures of self-control are much more likely to occur in the evening than in the morning.⁷⁹ A study published by the Endocrine Society stated,

It has been recognized for more than two decades that, in normal subjects, the response to an oral glucose tolerance test varies according to time of day. In the afternoon and evening, blood glucose levels 1-2 h[ours] after ingestion of a 75-g oral glucose load are generally 1.7-2.8 mmol/liter (30-50 mg/dl) higher than when the test is performed in the morning. The term “afternoon diabetes” was coined to describe this phenomenon because of the increased potential of a false-positive diagnosis of diabetes in the afternoon, as compared with the morning. Well-controlled studies have demonstrated that “afternoon diabetes” does not reflect a difference in duration of prior fast but represents a true effect of time of day. . . . The insulin response to oral glucose is also affected by time of day, the increase being generally higher and of shorter duration in the morning and lower, delayed, and more prolonged in the evening.⁸⁰

This study corroborates the findings of an endocrinology study in the *British Medical Journal*, concluding that “[t]here is evidence to indicate that glucose utilization by insulin-dependent as well as non-insulin dependent

75. C. Nathan DeWall, *Sweetened Blood Cools Hot Tempers: Physiological Self-Control and Aggression*, 37 *AGGRESSIVE BEHAV.* 73, 76 (2011) (“As expected, diabetic status was positively correlated with aggressiveness. . . . Glucose is brain food for self-control, and people who have difficulty metabolizing glucose also have difficulty controlling their aggressive impulses.”).

76. *Id.*

77. DeWall et al., *supra* note 67, at 823.

78. Gailliot & Baumeister, *supra* note 6, at 318.

79. See ROY F. BAUMEISTER ET AL., *LOSING CONTROL: HOW AND WHY PEOPLE FAIL AT SELF-REGULATION* 184 & 230 (1994).

80. Eve Van Cauter et al., *Roles of Circadian Rhythmicity and Sleep in Human Glucose Regulation*, 18 *ENDOCRINE REVIEWS* 716, 717 (1997).

tissues decreases as the day progresses.”⁸¹ These endocrinology studies “demonstrated convincingly that glucose is used less effectively later in the evening than earlier during the day, and furthermore, that glucose use becomes increasingly inefficient as the night progresses.”⁸² A daily decline in the body’s ability to metabolize glucose squares the previously discovered propensity for lapses in self-control late in the day with willpower’s dependence on glucose.⁸³ In other words, “afternoon diabetes” may cause afternoon lapses in self-control, in part, because of decreased glucose metabolism.⁸⁴ In addition, another important physiological basis of willpower—rest—is typically highest in the morning and declines in the afternoon as people tire from their exertions throughout the day. This predictable decline in willpower has significant behavioral ramifications in the form of reduced self-control and susceptibility to impulses late in the day.

C. Morality

Willpower depletion can cause people to be more likely to behave immorally in the afternoon than in the morning.⁸⁵ Applying social psychology to acts of morality, a 2013 study hypothesized that people are more likely to exhibit moral behavior in the morning than in the afternoon.⁸⁶ Researchers “made the simple – yet important – prediction that if self-

81. *Id.* at 719; see also R.J. Jarrett et al., *Diurnal Variation in Oral Glucose Tolerance: Blood Sugar and Plasma Insulin Levels Morning, Afternoon, and Evening*, 1 BRIT. MED. J. 199, 200 (1972).

82. Gailliot & Baumeister, *supra* note 6, at 318.

83. *Id.*

84. *Id.*

85. See Maryam Kouchaki & Isaac H. Smith, *The Morning Morality Effect: The Influence on Time of Day on Ethical Behavior*, 25 PSYCHOL. SCI. 95, 95 (2014).

86. See *id.* (“Our research suggests that it can be important to take something as seemingly mundane as the time of day into account.”).

regulatory resources are gradually depleted throughout the day, people are more likely to behave unethically in the afternoon than in the morning – what we refer to as the *morning morality effect*.⁸⁷

In one experiment, participants were instructed to complete a visual-perception task of rapidly identifying on which side more dots appeared on a computer screen divided down the middle diagonally.⁸⁸ Participants received five cents for each response that indicated more dots were on the right side, but received half a cent for each response that indicated more dots were on the left side.⁸⁹ Of the trials in which clearly more dots appeared on one side, afternoon participants cheated on the test (chose the wrong side that provided the greater financial benefit) far more than participants in the morning session.⁹⁰ The researchers opined that, “people’s propensity to morally disengage will interact with the time of day (i.e. morning vs. afternoon) to affect ethically relevant outcomes.”⁹¹

Behaving morally requires engaging in self-control to overcome impulses. Because self-control is a finite resource on which morality depends, researchers correctly hypothesized that morally virtuous behavior would diminish throughout the day.⁹² Morality researchers understand that the “mere experience of everyday living can reduce one’s self-control as the day progresses.”⁹³ Thus, any act of willpower likely affects the next act, no matter how dissimilar. While one must be cautious not to draw broad conclusions from a single study, this one suggests the insights of social

87. *Id.* at 96.

88. *Id.* at 97.

89. *Id.*

90. *Id.*

91. *Id.* at 96; *see also id.* at 100 (“We further demonstrated that people who have a lower propensity to morally disengage – and who are thus generally expected to behave more ethically – were more strongly influenced by this morning morality effect.”).

92. *See* Francesca Gino et al., *Unable to Resist Temptation: How Self-Control Depletion Promotes Unethical Behavior*, 115 ORGANIZATIONAL BEHAV. & HUM. DECISION MAKING PROCESSES 191, 192 (2011).

93. Kouchaki & Smith, *supra* note 85, at 1.

psychology apply to morality studies because of the significance of self-control for diverse forms of human behavior.

D. Business and Legal Negotiation (Including Mediation)

The literature on negotiation and mediation is beginning to acknowledge the physiological bases of willpower, including glucose. For instance, law professors Jim Coben and Lela Love say of mediation: “Supplying food or breaks to keep the energy level high can be critical for the stamina needed to understand what’s going on and maintain creativity. This move is OK and even necessary.”⁹⁴ Coben and Love show appreciation for two of the most important physiological bases of willpower: glucose (“food”) and rest (“breaks”).

With respect to glucose, a negotiation coach, Dan Green, aptly opines that “eating cupcakes will make you a better negotiator.”⁹⁵ Citing experiments by one of the authors of this article, social psychologist Roy Baumeister, Green states that when one is offered a cupcake, eating it improves willpower by cutting out an act of self-control to resist the tempting offer, while simultaneously increasing blood glucose.⁹⁶ Therefore, “if you say yes to the cupcake, not only are you maintaining the glucose reserves your brain needs to negotiate well, you are getting a glucose boost from the cupcake itself, improving the way your brain functions.”⁹⁷ Another

94. Jim Coben & Lela P. Love, *Trick or Treat: The Ethics of Mediator Manipulation*, 17 DISP. RESOL. MAG. 17, 20 (2010).

95. Dan Green, *Science Proves that Eating Cupcakes Will Make You a Better Negotiator*, THE NEGOTIATION BLOG, <http://thenegotiationblog.com/2013/10/22/eating-cupcakes-will-make-better-negotiator/> (last visited Aug. 23, 2014).

96. *See id.* Putting the Glucose Model into lay terms, Green states: “[T]hink of your brain as an engine. The gas tank is filled with glucose. Unlike a car though, every time you actively decide not to fill your tank (by saying no to something sugary), that uses an immense amount of fuel. If you decide that too much you will run out of juice and your engine (brain) stops working as it should.” *Id.*

97. *Id.* (alteration in original).

negotiation expert, Phyllis Pollack, cites a scientific study confirming that hunger affects decision making, most notably the perception of risk.⁹⁸ After discussing the study examining multiple species,⁹⁹ Pollack concludes, “the moral is when making a decision, do it on a full stomach.”¹⁰⁰

While Coben, Love, Green, and Pollack expressly connect glucose and hunger to negotiation, a broader variety of literature discusses willpower in connection with “negotiation fatigue” or “deal fatigue,” a colloquial expression that describes feelings of frustration, irritation and resignation commonly experienced in the later parts of a prolonged negotiation.¹⁰¹ Chris Younger says the first cause of deal fatigue “is obvious - the parties are tired. Negotiations are emotionally charged and over time are exhausting.”¹⁰² This is key because, as noted above, exhaustion and stress deplete willpower.¹⁰³ As exhaustion and stress build during a long negotiation and gradually deplete willpower, decision making abilities can be expected to decline so parties are less able to carefully assess their own interests. As Joshua Weiss writes, negotiation fatigue “most often sets in when one’s desire for agreement is high, while simultaneously [one’s] fatigue level is also high.

98. Phyllis G. Pollack, *Mediation: I Am Too Hungry to Decide*, MEDIATE.COM (July 2013), <http://www.mediate.com/mobile/article.cfm?id=10142>.

99. Max-Planck-Gesellschaft, *Hunger Affects Decision-Making and Perception of Risk*, SCIENCE DAILY (June 24, 2013), <http://www.sciencedaily.com/releases/2013/06/130625073802.htm>.

100. Pollack, *supra* note 98; *see also* Jonathan Levav et al., *Extraneous Factors in Judicial Decisions*, 108 PROC. NAT’L ACAD. SCIENCES 6889, 6889 (2011), *available at* <http://www.pnas.org/content/108/17/6889.full.pdf+html>. A study of over 1,000 judicial decisions of Israeli parole judges found that the likelihood of a favorable decision for the parolee began around 65% at the beginning of the day and right after two regularly taken meal breaks. *Id.* at 6889-90. As each session progressed, the likelihood of a favorable ruling dropped to near zero before rising back to 65% after a meal break. *Id.* at 6890. The study concluded that, “the caricature that justice is what the judge ate for breakfast might be an appropriate caricature for human decision-making in general.” *Id.* at 6892.

101. Chris Younger, *Coping with Deal Fatigue*, COLORADO BIZ MAGAZINE (Jan. 30, 2012), <http://www.cobizmag.com/articles/powering-through-deal-fatigue1>.

102. *Id.*

103. *See supra* notes 45-48.

As these two elements converge, the interests of the party fade dangerously from the picture.”¹⁰⁴ These discussions of deal fatigue suggest that even if experienced business negotiators do not understand the physiological bases of willpower depletion, they understand on a practical level that fatigued negotiators (like diabetics who fail to inject insulin when needed) exhibit more impulsive, less controlled personalities.

While experienced negotiators may be aware of negotiation fatigue and are prepared to guard against it, this may not be true of ordinary consumers, making them susceptible to predatory sales tactics that take advantage of negotiation fatigue. For example, sellers of vacation timeshares notoriously prey on potential consumers’ declining willpower levels.¹⁰⁵ To lure potential customers, timeshare companies offer discounted or free vacation packages contingent on attending a sales presentation, usually advertised as 90 minutes long.¹⁰⁶ However, consumers frequently complain that sales presentations drag on far longer than promised and involve high-pressure personal sales pitches using coercing or hostile language.¹⁰⁷ The Timeshare Consumer Bureau, a nonprofit entity designed to combat rampant consumer fraud in the industry warns, “[a] 90 minute advertised meeting can easily run multiple hours. The purpose is to exhaust consumers into blindly signing the misrepresented timeshare contract after the lengthy presentation.”¹⁰⁸ Marylyn Carlyle, a consumer timeshare consultant, claims that salespeople

104. Joshua N. Weiss, *Negotiation Fatigue Syndrome: A Significant Barrier to Reaching “Good” Agreements*, MEDIATE.COM (Feb. 2005), <http://mediate.com/articles/weissj4.cfm#2>.

105. *Timeshare Reviews Show Massive Problems in Industry*, TIMESHARE CONSUMER BUREAU (Nov. 16, 2012), <http://www.timeshareconsumerbureau.com/news/timeshare-reviews-show-massive-problems-in-industry>.

106. Christy Rakoczy, *Attending a Timeshare Presentation for a Free Vacation—Good Idea?*, MONEY CRASHERS, <http://www.moneycrashers.com/attending-timeshare-presentation-free-vacation/> (last visited Feb. 9, 2015).

107. *Id.*

108. *Timeshare Misrepresentation: The Timeshare Presentation*, TIMESHARE CONSUMER BUREAU (March 11, 2012), <http://www.timeshareconsumerbureau.com/blog/timeshare-misrepresentation-the-timeshare-presentation>.

at a New York timeshare presentation would not allow her to retrieve her grandchild from a room in which she was being watched until the end of a sales presentation.¹⁰⁹ Timeshare companies also frequently funnel consumers to more experienced salespeople upon the consumer refusing a deal with the initial salesperson.¹¹⁰ These tactics deplete willpower by increasing the consumer's exhaustion and hunger (through the sheer length of the experience) and by increasing the consumer's stress (by hostile language or perhaps even by kidnapping grandchildren). These presentations typically do not make it easy for consumers to replenish their willpower by taking a break from the stress to nap, get some fresh air, take a walk, or relax with a snack and drink. In addition, high-pressure sales tactics are notorious for creating deadlines ("Buy Now While Supplies Last!" or "Today Only!") because deadlines weaken consumers' efforts to hold out for a better deal.

II. THE GLUCOSE MODEL OF MEDIATION

A. Introduction and the Importance of Scheduling and Deadlines

Mediations of high dollar civil cases in the United States tend to follow a typical course regardless of subject matter and no matter who the mediator, parties, or lawyers are. The physiological bases of willpower combine with the importance of deadlines to offer a compelling explanation for why so many mediations follow this pattern. Most significantly, this combination explains why many mediations scheduled for a single day begin with a combative morning session and settle near the end of the scheduled mediation period.

109. Lee Davidson, *Timeshare Traps: Tactics: High-Pressure sales and deception still common*, DESERET NEWS (Nov. 19, 2006), <http://www.deseretnews.com/article/650208032/Tactics-High-pressure-sales-and-deception-still-common.html?pg=all>.

110. *Id.*

Customarily, in high-dollar civil cases (as opposed to small claims or family cases) most party-funded mediations are scheduled for daylong sessions.¹¹¹ This is tremendously important because it tends to set a deadline

111. This impression is based on W. Scott Simpson's experience as an advocate mediating roughly 100 cases in over 26 states and the following. Donna Ballman, *Marathon Mediations Aren't Good for Employees*, LEXISNEXIS LEGAL NEWSROOM LABOR AND EMPLOYMENT LAW (Jan. 27, 2012), <http://www.lexisnexis.com/legalnewsroom/labor-employment/b/labor-employment-top-blogs/archive/2012/01/27/marathon-meditations-aren-t-good-for-employees.aspx> ("I find that mediations these days seem to be expected to last 6 - 8 hours or more."); Andrew J. Lehrman, *Fees for Services as Mediator*, ANDREW LEHRMAN MEDIATION/ARBITRATION SERVICES, http://www.lehrman-mediation.com/schedule_charges.aspx (last visited Aug. 23, 2014) ("From experience, it is generally found that a full day mediation should be scheduled for all parties so that the process can have the necessary time to be effective. . . . Generally, we will begin at 9:30 a.m., with a working lunch and continue until completed. While most sessions conclude by 5:30 p.m., a session may extend into the evening if necessary.")

In contrast, mediation sessions may tend to be shorter where the mediator is unpaid or publicly funded and in family and small claims cases. See Roselle L. Wissler, *Court-Connected Settlement Procedures: Mediation and Judicial Settlement Conferences*, 26 OHIO ST. J. ON DISP. RESOL. 271, 282 (2011) (With "volunteer mediators" in one federal district court's court-connected mediation program, "[m]ediation sessions are typically held in the courthouse. The initial mediation session usually is scheduled for ninety minutes, although the mediator and the parties often agree to extend the session or schedule an additional session if they think it will be productive."); Roselle Wissler, *The Effectiveness of Court-Connected Dispute Resolution in Civil Cases*, 22 CONFLICT RESOL. Q. 55, 62-64 (2004) ("[M]ost programs offered mediation at no cost;" most last for one session of two to three hours, but in some programs they lasted for four to eight hours); STEVENS H. CLARKE ET AL., COURT-ORDERED CIVIL CASE MEDIATION IN NORTH CAROLINA: AN EVALUATION OF ITS EFFECTS 18 (1995), available at <http://ncsc.contentdm.oclc.org/cdm/ref/collection/civil/id/99> (describing the typical court-ordered civil case mediation as lasting three and a half hours); Roselle Wissler, *Court-Connected Mediation in General Civil Cases: What We Know from Empirical Research*, 17 OHIO ST. J. ON DISP. RESOL. 641, 651-52 (2002) ("A single initial mediation session generally was scheduled for two or more hours in the pilot courts and for one hour in the Settlement Week courts. In the pilot courts, most of the sessions (77%) lasted between thirty-one minutes and three hours; 20% were longer and only 3% were shorter. In the Settlement Week courts, most of the sessions (85%) also lasted from thirty-one minutes to three hours, but only 2% were longer and 13% were shorter."). The same may be true of mediation sessions in family cases. Joan B. Kelly, *Family Mediation Research: Is There Empirical Support for the Field?*, 22 CONFLICT RESOL. Q. 10, 11, 13, 16 (2004) (reporting family mediation sessions in varied programs ranging from one to three hours on average); ROSELLE L. WISSLER, "TRAPPING THE DATA": AN ASSESSMENT OF DOMESTIC

for settlement: 5 p.m. or whatever time that evening an essential participant in mediation must leave. Settlement of litigation, of course, requires the consent of the parties (plaintiff and defendant), so they are essential participants in mediation. To the extent parties will not consent to settlement terms their lawyers have not seen, each party's lawyer is an essential participant in mediation. The mediator may also be essential to settlement, which means that at least five people are essential participants in settlement mediation. If any of them have to leave for the day, the mediation session is over and the opportunity for settlement has passed.

Of course mediation is not necessarily a "one and done" event. Some cases have several mediation sessions, sometimes months apart.¹¹² Yet each mediation session often takes the feel of "today is the day to settle."¹¹³ That is understandable and rational because scheduling a mediation session generally requires finding a day and time that is available on at least five people's schedules: two parties, two lawyers, and the mediator.¹¹⁴

RELATIONS MEDIATION IN MAINE AND OHIO COURTS 10, 66 (1999) (reporting mediation sessions ranging from one to three hours in court-connected divorce mediation in two states).

112. Melanie A. Vaughn, *Mediation Tips*, MD. B.J., July/Aug. 2003, at 46, 50-51 ("In some cases, several mediation sessions are necessary to reach a resolution. Between meetings, participants have the opportunity to acquire additional information and consider alternative strategies. Typically, divorce mediation is a multi-session process with a resultant memorandum of understanding that the parties take to their attorneys for conversion into a legally binding contract."); see also Charles E. Clawson, *The Use of Mediation in the 20th District*, ARK. LAW., Spring 2005, at 27, 28 (analyzing a survey of Arkansas judicial district showing 15% of mediated cases had more than one mediation session); David A. Hoffman & Richard N. Wolman, *The Psychology of Mediation*, 14 CARDOZO J. CONFLICT RESOL. 759, 760 (2013) ("After several mediation sessions, the [disputing parties] were getting nowhere.").

113. See V. James Mann, *The Mediation Paradox: Collaborative Combat*, JAMS (Nov. 2011), <http://www.jamsadr.com/files/Uploads/Documents/Articles/Mann-Mediation-Paradox-2011.pdf> (stating that because of the high rate of settlement in mediation, lawyers should prepare for mediation sessions as if they were the last major event in the dispute).

114. This challenge is even greater when two mediators are co-mediating. Beth M. Erickson, *Therapeutic Mediation: A Saner Way of Disputing*, 14 J. AM. ACAD. MATRIMONIAL LAW. 233, 255 (1997) ("Co-mediation poses scheduling difficulties by having to coordinate the calendars of two busy professionals and two parties . . .").

Sometimes more than five people need to be involved. It is often hard to find times that work for five or more people, particularly if they are busy professionals, as is usually true of at least some of the participants. The difficulty of scheduling a future mediation session means that if parties do not settle in this mediation session, they may not be able to schedule another mediation session before trial.¹¹⁵ So strong settlement pressure can be brought on a party at 4:30 p.m. by saying something along the lines of: “We’ve only got the mediator until 5:00 and then we go to trial in two weeks. I doubt we would be able to schedule another mediation session during those two weeks because the mediator is going to Aruba tomorrow and the day he returns is the day opposing counsel is scheduled to start a trial in another case. So you will have to settle in the next thirty minutes or go to trial, unless we can figure a way to settle without the mediator’s help.”¹¹⁶ This is a real threat because, although many cases settle without mediator help, the fact that these parties incurred the expense of hiring a mediator suggests they were probably not able to settle this case without one. So there is a lot of power in the reality that “you will have to settle in the next thirty minutes or go to trial unless we can figure a way to settle without the mediator’s help,” and this powerful reality derives from simple scheduling, which creates an evening deadline. Just as lawyers have long observed that

115. See, e.g., David W. Henry, *Mediation as a Dark Art: A Mediator’s Message to Parties Seeking to Settle the Difficult Case*, BUS. L. TODAY, Mar. 2014, at 1, 2 (“It is surprising how many attorneys schedule mediation with little forethought and find themselves mediating on the eve of trial when there is little opportunity to react to new information or positions.”); see also Robert E. Ferencik Jr., *Litigating Construction Defect Cases: Key Considerations for Attorneys and Clients*, ASPATORE, Nov. 2013, at 1, 6. available at 2013 WL 5755153 (“[M]ediations are often scheduled shortly before trial”); see also Robert A. Creo, *Looking My Way: Thinking Fast and Slow . . . and Mediator Sense*, 32 ALTERNATIVES TO HIGH COST LITIG. 94 (2014) (telling a story about a case “scheduled for trial a short time after the mediation session” and referring to “the late hour”).

116. Just as “[l]itigators are calendar-driven animals,” so are busy mediators. Henry, *supra* note 115, at 2; Kenneth Kressel, *How Do Mediators Decide What to Do? Implicit Schemas of Practice and Mediator Decisionmaking*, 28 OHIO ST. J. ON DISP. RESOL. 709, 734 (2013) (“Mediators are busy people”); Joe Epstein & Susan Epstein, *Co-Mediation*, 35 COLO. LAW. 21, 23 (2006) (“Most highly regarded mediators are busy”).

settlements occur “on the courthouse steps” right before trial,¹¹⁷ similarly settlements occur right before the mediator’s availability ends.¹¹⁸ It is a rational response to a deadline. Parties are rational to hang tough with few concessions until the deadline nears, and then to make concessions to reach a deal right before the deadline expires.¹¹⁹ Perhaps it is no coincidence that the customary deadline time of settlement mediation—early evening—is precisely when, for physiological reasons, each party’s willpower is likely to have declined to the “sweet spot for settlement.” By 5:00 p.m. after a full day of mediation, parties are likely to be sufficiently hungry, exhausted, and

117. Russell Korobkin & Chris Guthrie, *Psychological Barriers to Litigation Settlement: An Experimental Approach*, 93 MICH. L. REV. 107, 128 (1994) (“Many cases in the real world, in fact, do not settle until just before trial or even during trial.”); Andrew J. Wistrich & Jeffrey J. Rachlinski, *How Lawyers’ Intuitions Prolong Litigation*, 86 S. CAL. L. REV. 571, 576 (2013) (“[A] significant percentage of cases settle after most or all discovery has been completed, on the eve of trial, or on the courthouse steps”) (citing Stephen G. Bullock & Linda Rose Gallagher, *Surveying the State of the Meditative Art: A Guide to Institutionalizing Mediation in Louisiana*, 57 LA. L. REV. 885, 897 (1997); Malinda M. Sanders, *Settlement on the Courthouse Steps*, 61 BENCH & BAR MINN. Sept. 2004, at 16, 16; Stewart J. Schwab & Michael Heise, *Splitting Logs: An Empirical Perspective on Employment Discrimination Settlements*, 96 CORNELL L. REV. 931, 948 (2011); Kathryn E. Spier, “Tied to the Mast”: *Most-Favored-Nation Clauses in Settlement Contracts*, 32 J. LEGAL STUD. 91, 93 (2003)).

118. See Arden B. Levy, *Mediation of Coverage Disputes: Best Practices and Trends*, 23 COVERAGE 33, 33 (2013) (“Parties sometimes view the end of the mediation day as the time limit for settling.”); Mann, *supra* note 113 (stating that much like the prospect of impending litigation, the mediation process provides the necessary focus for parties to finally settle disputes); see also CHRISTOPHER W. MOORE, *THE MEDIATION PROCESS: PRACTICAL STRATEGIES FOR RESOLVING CONFLICT* 503 (4th ed. 2014) (“Deadlines imposed by the mediator may encourage the parties to negotiate more expeditiously; for example, some commercial mediators structure a limited number of sessions within which the parties must agree or cease mediation.”).

119. Gary Mendelsohn, Note, *Lawyers As Negotiators*, 1 HARV. NEGOT. L. REV. 139, 162 (1996) (“Negotiations frequently drag on until the deadline approaches, at which point the parties express a greater willingness to make concessions so that they can reach an agreement.”); H. Lee Hetherington, *Negotiating Lessons from Iran: Synthesizing Langdell & Macerate*, 44 CATH. U. L. REV. 675, 684 (1995) (“Mutual self-interest coupled with intense deadline pressure inevitably increases the probability of late-stage resolution.”).

stressed that their willpower has declined enough to make concessions they would have rejected earlier in the day.

*B. Common Mediation Behavior*¹²⁰

Before a typical daylong mediation begins, mediation hosts typically offer parties coffee, tea, and water.¹²¹ High volume mediation offices frequently have kitchens containing cookies, candies, and other snacks available for negotiators whenever they would like.¹²² The mediator then usually gathers all participants for an opening caucus where he or she explains the mediation process, establishes rapport, and sets the tone for

120. This section draws from a combination of scholarship and W. Scott Simpson's experience as an advocate mediating roughly 100 cases in over 26 states. The authors also consulted with full-time mediator Mike Walls of Upchurch, Watson, White & Max, one of the highest volume mediation offices in the Southeastern United States. Mike Walls has mediated roughly 2,500 cases.

121. See MARY KENDALL HOPE, *THE GUIDED METHOD OF MEDIATION: A RETURN TO ORIGINAL IDEAS OF ADR* 135 (2009) (urging mediators to "[m]ake sure you have coffee, tea, water, drinks, and juices readily available in either a snack machine or brought into the room"); see also Paula Young, *The Where of Mediation: Choosing the Right Location for a Mediated Settlement*, *MEDIATE.COM* (March 2007), <http://www.mediate.com/articles/young19.cfm> ("Coffee service invites people to mingle and engage in small talk and 'sets up a strong kinesthetic, visual, and auditory welcome message for many parties.'"); see also Coben & Love, *supra* note 94, at 17 ("Having read a study that warm drinks inspire warm thoughts, a mediator serves coffee and tea so that participants will regularly be feeling the heat of their cups.").

122. Upchurch, Watson, White, & Max allowed the authors to view the firm's kitchen in the Birmingham, Alabama office. With four mediators, the office holds three mediations per day on average. In 2012, the firm renovated their office to expand the kitchen, which is roughly 15 x 15 feet. It contains large, clear jars of peanut M & M's, pretzel sticks, Cheez-Its, peanut butter crackers, granola bars, jelly beans, and peppermints. It provides six different types of soft drinks, bottled water, tea, hot chocolate and coffee. The firm also utilizes an Otis Spunkmeyer cookie oven to provide chocolate chip cookies with lunch and at 2:30 every afternoon. See also Coben & Love, *supra* note 94, at 20 ("Supplying food or breaks to keep the energy level high can be critical for the stamina needed to understand what's going on and maintain creativity. This move is OK and even necessary."); see also HOPE, *supra* note 121, at 135 (advising mediators to "[h]ave several healthy snack options and a few 'cookie' options. You do not want disputants to feel guilty about too much indulgence. . . . Food and drink brings people together.").

negotiation.¹²³ At this point, the mediator often allows each side of the case to present its views.¹²⁴ Usually, the party's attorney acts as spokesperson on behalf of the party. The mediator then frames the negotiable issues in neutral terms and separates the sides in private conference rooms so that he or she can engage in shuttle diplomacy.¹²⁵

The morning session of a daylong mediation tends to make little progress if the parties exchange exaggerated initial demands and offers.¹²⁶ Generally, initial exchanges of demands and offers show that parties are using an adversarial/competitive approach to bargaining, in which each party shows its commitment to settlement terms favorable to it by refusing to make concessions and projecting confidence about its prospects at trial if the other side does not cave and accept one-sided settlement terms.¹²⁷ The

123. See SARAH R. COLE ET AL., *MEDIATION: LAW, POLICY, AND PRACTICE* § 3:2 *Prototypical Mediation Session* (2012); STEPHEN J. WARE, *PRINCIPLES OF ALTERNATIVE DISPUTE RESOLUTION* § 4.10 (2d ed. 2007).

124. See COLE ET AL., *supra* note 123, at § 3:2.

125. See *id.*; see also WARE, *supra* note 123, at § 4.10(C); BETTE J. ROTH ET AL., *ALTERNATIVE DISPUTE RESOLUTION PRACTICE GUIDE*, § 23:5 (2013).

126. This perception is based on the experiences of W. Scott Simpson.

127. WARE, *supra* note 123, at 192 ("The adversarial/competitive approach often involves . . . an extreme opening offer, few and small concessions . . . posturing about the strength of one's case and one's lack of interest in settling, and psychological warfare."); *id.* at 193 ("Extreme opening offers have important advantages. In fact, empirical research shows a significant correlation between opening offers and the terms of an eventual deal. An extreme opening offer allows the offeror room to later grant concessions, while still reaching a favorable settlement."); JAY FOLBERG ET AL., *RESOLVING DISPUTES: THEORY, PRACTICE, AND LAW* 118-19 (excerpt from GERALD R. WILLIAMS & CHARLES CRAVER, *LEGAL NEGOTIATION* 79) (2007) ("Maximalist positioning has several advantages. These position statements effectively hide the bargainer's real or minimum expectations, they eliminate the danger of committing to an overly modest case evaluation, they provide covers for them while they seek to learn real opponent positions, and will very likely induce opponents to reduce their expectations. They also provide negotiators with something to give up, with concessions they can make, to come to terms with opponents The potential benefits of the maximalist position need to be weighed against its potential demerits, which are those associated with competitive adversarial strategies The most important weakness is the increased risk of stalemates.").

parties are playing a game of chicken in which each side shows it has the courage to walk away from mediation without a settlement. Attempting to break the impasse, the mediator explores the issues with each party in private caucus by challenging their positions and asking them to consider the strengths of the other party's interests and arguments.¹²⁸ Mediations generally hit a low point of productivity right before lunchtime when the parties appear to have receded into immovable positions.

At lunchtime, mediators commonly provide lunch at the mediator's office.¹²⁹ During the lunch break, the mediator often eats with negotiators in order to "break bread" and get closer to them on a personal level.¹³⁰ After lunch, parties can become lethargic and assert less strident stances than in the morning sessions.¹³¹ Once the lethargy from digesting food passes, the

128. COLE ET AL., *supra* note 123, at § 3:2.

129. Upchurch, Watson, White, & Max serves lunch ordered from local restaurants in the office kitchen every day at 11:30 am Central Time. Unless a lawyer or participant requests a specific type of food, the food alternates from items such as deli platters, pizza, spaghetti, Mediterranean, and barbeque. The firm chooses to serve lunch at 11:30 a.m. Central Time to accommodate for people who travel from the Eastern Time Zone and may get hungry earlier than others. The office serves lunch in the kitchen, as opposed to the conference rooms, to encourage people to socialize while they eat. See HOPE, *supra* note 121, at 136 (urging mediators to "[o]rder food to be brought in, but allow disputants to take long breaks . . . select a couple of good 'order in' restaurants and have quick menus on hand."); see also Paula Young, *The Where of Mediation: Choosing the Right Location for a Facilitated Negotiation*, MEDIATE.COM (March 2007), <http://www.mediate.com/articles/young19.cfm> (discussing student exam answers in her Alternative Dispute Resolution class, "[s]tudents suggested that the mediator offer menu service or pre-ordered lunch with sandwiches, finger foods, fruit . . . , cheeses, a vege tray, juices, bottle water, candies, and mints.").

130. See David A. Hoffman, *Mediation, Multiple Minds, and the Negotiation Within*, 16 HARV. NEGOT. L. REV. 297, 308-09 (2011) ("Ingestion of food triggers oxytocin [the chemical responsible for creating empathy and trust] release . . . [M]any mediators make a point of serving food, or at least having it available in the room. 'Breaking bread' together may turn out to be a ritual that has not only social significance but also biochemical benefits.").

131. See Pranati Kapadia, *Why Do I Get a Slump in Mental Energy After Eating a Meal*, SCI. AM. (Dec. 23, 2010), <http://www.scientificamerican.com/article.cfm?id=why-do-i-get-a-slump-in-mental-energy> ("Medically known as postprandial somnolence, a food coma isn't an actual coma but

parties are somewhat more receptive to the issues and to settlement.¹³² This receptiveness usually leads to another round of settlement offers in the early afternoon; however, the parties' early afternoon offers often remain far apart.¹³³

As the afternoon wears on, the impending deadline of the end of the mediation session takes hold, and pressure increases to reach a settlement.¹³⁴ The pace of negotiation begins to accelerate because the parties' focus tends to shift to the consequences of not settling—a costly trial with uncertain results. Therefore, negotiators exchange and consider settlement options they previously declared unacceptable.¹³⁵ At this time, parties often shift from adversarial/competitive to cooperative/accommodative bargaining. Struggling to stay focused and energized late in the afternoon, many negotiators drink coffee or eat snacks;¹³⁶ however, the temporary boost from doing so does not entirely restore their previously intransigent attitudes. With parties not wanting to lose the deal by allowing the mediation session

rather a lack of mental energy that people often experience after eating a large meal . . . Luckily, this sleepy sensation does not last long – it usually passes after an hour or so.”).

132. This perception is based on W. Scott Simpson's experience.

133. This perception is based on W. Scott Simpson's experience.

134. See HOPE, *supra* note 121, at 197 (“The financial consequences of not reaching resolution appear to be the most motivating reason for disputants to find options that will work. Reminding disputants of these factors can often wake up individuals who ‘dig in’ to the same positions. They come into the process aware of these negative consequences, so a brief reminder of what could happen if they do not reach resolution – seems to stimulate disputants to open up to other options.”).

135. *Id.* at 197-98.

136. See *supra* notes 95-111 and accompanying text. By far the most heavily consumed snack food at Upchurch, Watson, White, & Max is Peanut M&M's; see also HOPE, *supra* note 121 (telling mediators to “assure that if the mediation goes both morning and afternoon, that fresh coffee and beverages are available for the afternoon. Bring enough snacks to last the entire day and just place them out. . . . Disputants will appreciate every single thing of this nature that you do for them (whether they tell you or not) so assure that you do bring these things (as well as napkins, toothpicks for fruit) and you will see happier individuals in the room.”).

to end,¹³⁷ many full-day mediations conclude with the parties reaching a settlement in the late afternoon or early evening.¹³⁸ After reaching an oral agreement, mediators typically insist that parties draft and sign a settlement agreement prior to adjourning the mediation.¹³⁹

Experienced mediation participants (mediators, lawyers, and parties) generally accept these behaviors as commonplace, but few question their causation and significance. These behaviors beg certain questions. Why are parties ordinarily stubborn in the morning and receptive in the afternoon? Why do mediators strongly encourage parties to eat lunch in the mediation office instead of encouraging them to leave for lunch and then return to mediation? Why do mediation offices offer sugary drinks and snacks to negotiators? Why do mediators try to get parties who have reached an oral agreement to reduce it to a signed writing before adjourning the mediation session? Most importantly, why do parties often reach settlement agreements when the mediation session nears the end of its scheduled time?

137. See *supra* note 119 for the proposition that the looming deadline of a mediation session increases the pace of settlement negotiations.

138. This perception is based on W. Scott Simpson's experience.

139. Bette J. Roth et al., *Keys to a Successful Mediation*, ALTERNATIVE DISPUTE RESOLUTION GUIDE § 26:4 (2008) ("Hanging on to Settlement – If an agreement is reached in the mediation, do not leave until the salient terms have been written down and all parties have signed an agreement If you wait, these issues can come back to haunt and even scuttle what appeared to be a successful settlement. No matter what the hour, resist the temptation to eat or sleep until the job is truly done."). The settlement agreement reached in mediation usually contemplates a more formalized agreement later, where parties articulate additional details of the settlement, such as the precise terms of a release, confidentiality clauses, etc. See WARE, *supra* note 123, at 300 ("[T]he parties may write a short memo or outline of their deal at the end of the mediation and give that to their lawyers who will convert it into a formal, signed contract. Unfortunately, sometimes no later document is signed and there is litigation over whether the document written at the end of mediation is a binding settlement") (citing cases).

*C. The Glucose Model of Mediation: Physiological Bases of Willpower as
Important Explanations for Common Mediation Behavior*

As noted above, the literature on negotiation and mediation is only beginning to acknowledge the physiological bases of willpower.¹⁴⁰ However, the science of willpower provides an important physiological explanation for why mediations of disputes in civil litigation tend to follow

140. See *supra* notes 95-98 and accompanying text. Indeed, negotiation and mediation literature only occasionally address physiology at all, and then usually in connection with moods and emotions, especially anger. See, e.g., Kenneth F. Dunham, *I Hate You, But We Can Work It Out: Dealing with Anger Issues in Mediation*, 12 APPALACHIAN J.L. 191, 193 (2013) (discussing “The Physiological Effects of Anger”); Don Ellinghausen Jr., *Venting or Vipassana? Mindfulness Meditation’s Potential for Reducing Anger’s Role in Mediation*, 8 CARDOZO J. CONFLICT RESOL. 63, 65 (2006) (“Christopher Moore’s highly-influential text, *The Mediation Process*, characterizes the venting rationale as reflecting mediator concerns that (1) ‘the party needs a physiological release for unexpressed feelings’ that will otherwise thwart ‘focus on substantive issues until this discharge of feelings has occurred’”); see also Lauren A. Newell, *Happiness at the House of Mouse: How Disney Negotiates to Create the “Happiest Place on Earth”*, 12 PEPP. DISP. RESOL. L.J. 415, 430 (2012) (“Body language is an important aspect of negotiation, in part because emotions can have a strong physiological impact upon the body, such that body language communicates emotions.”); Tricia S. Jones & Andrea Bodtker, *Mediating with Heart in Mind: Addressing Emotion in Mediation Practice*, 2001 NEGOTIATION J. 217, 218 (2001) (“Exploring the implications of physiologic elements of emotion--how the body responds to emotion--enables us to discuss the impact of emotional flooding and emotional contagion on mediation process.”); Peter Reilly, *Resistance Is Not Futile: Harnessing the Power of Counter-Offensive Tactics in Legal Persuasion*, 64 HASTINGS L.J. 1171, 1218-19 (2013) (“Research consistently shows that groups of negotiators in a positive mood obtain significantly larger ‘joint gains’ than do negotiators either in a neutral or negative mood. Researchers have also found that people negotiating in a positive mood behave less competitively, are more willing to use integrative strategies, and tend to formulate more optimistic, cooperative, and integrative action plans The research indicates that positive mood increases ‘cognitive flexibility’ and improves ‘creative problem solving across a broad range of settings.’ It also influences the way people make judgments, remember, and process social information-- processes that are ‘all implicated during the course of a typical negotiation.’”).

Beyond physiology, “economics, psychology, and cultivated self-awareness have all contributed mightily to understanding negotiation” with or without a mediator. Richard Birke, *Neuroscience and Settlement: An Examination of Scientific Innovations and Practical Applications*, 25 OHIO ST. J. ON DISP. RESOL. 477, 478 (2010).

similar patterns nationwide, regardless of subject matter or who the participants are. Specifically, the science of willpower combines with the importance of deadlines to explain why most mediations make little progress toward settlement in the morning but often result in settlement late in the afternoon.

Mediations make little progress in the morning, in part, because parties are able to exert more willpower than they will be able to exert later in the day. During the morning of a mediation, parties (and their lawyers) exert the first few acts of willpower to manage emotions, focus attention, refuse settlement offers, and rebut opposing arguments. However, these first few acts of willpower generally come easily to the parties because they are relatively well-fed, well rested, and not yet facing the stress of “you will have to settle in the next thirty minutes or go to trial unless we can figure a way to settle without the mediator’s help.” With the parties’ strong willpower and a distant deadline, the parties have no incentive to soften their positions by making concessions.¹⁴¹ Instead, they compete with one another to seek the best possible outcome for themselves. Unbeknownst to most parties, however, these initial acts of willpower make their subsequent efforts of willpower more difficult and less likely to succeed.¹⁴²

Mediations generally hit a low point of productivity right before lunch because parties have spent substantial amounts of willpower without replenishing willpower by taking a break from the stressful topic of the mediation to get some fresh air, take a walk, or relax with food and drink, and thus replenish glucose. After working in stressful conditions all morning with typically little or no progress toward agreement to show for it, parties generally have less optimism about reaching a settlement. Into this low point comes lunch, which is both an art and a science for some skilled mediators.

141. See *supra* note 127 and accompanying text.

142. See *Ego Depletion*, *supra* note 10, at 1257 (proposing that initial acts of willpower make subsequent efforts more difficult and less likely to succeed).

The mediator's goal of facilitating settlement typically leads the mediator to have lunch delivered to the mediation office.¹⁴³ This benefits the mediator in two ways. First, it helps ensure that parties do not leave the mediation facility due to hunger and then refuse to return to the facility due to their frustration with the lack of progress toward settlement. Second, good mediators use lunch as an opportunity to "break bread" with one or both of the parties to establish greater credibility and better understand the parties' interests.¹⁴⁴

After lunch, parties typically become more receptive to settlement as the afternoon wears on, partly because declining willpower leaves them less able to withstand the mediator's pressure to make concessions and thus end the stresses of mediating and litigating by settling the case, albeit on less favorable terms than the party originally advocated. Carrying over from the morning session, parties continue to deplete willpower to focus attention, manage emotions, rebut opposing arguments, and make choices.¹⁴⁵ Fatigue and stress take their toll in depleting willpower as the afternoon wears on. While lunch replenished raw glucose levels, decreased afternoon glucose utilization, or "afternoon diabetes,"¹⁴⁶ can mean that parties may not be able to replenish willpower as efficiently as they could have earlier in the day. After substantial exercises of willpower, parties are less likely to challenge opposing arguments or refuse reasonable settlement offers in the afternoon. Like the unsolvable-puzzle solvers in the willpower experiments,¹⁴⁷ parties have less resolve to persevere after numerous exertions of willpower. Thus,

143. See HOPE, *supra* note 121, at 136 (urging mediators to "[o]rder food to be brought in, but allow disputants to take long breaks . . . Select a couple of good 'order in' restaurants and have quick menus on hand.").

144. See Hoffman, *supra* note 130, at 308-09 (proposing that eating food with a person releases oxytocin, the chemical responsible for creating trust).

145. *Strength Model*, *supra* note 10, at 353 (2007); see also Mark Muraven et al., *supra* note 25, at 776 (explaining that "[r]egulating an emotion requires overcoming one's current emotional state and replacing it with a different one").

146. See Cauter et al., *supra* note 80, at 823.

147. See *Ego Depletion*, *supra* note 10, at 1255.

declining willpower leads parties to retreat from their previous positions. The afternoon decline in willpower coincides with the deadline pressure to reach a settlement before an essential participant of mediation must leave, ending the mediation session. Thus, willpower diminishes as deadline pressure increases. Accordingly, the temptation to settle the case has a stronger impact on the parties in the afternoon because they have less willpower to resist that temptation. When the impulse to settle the case becomes stronger, the parties are more likely to facilitate the urge by making settlement offers. Therefore, decreased willpower can cause parties in the afternoon to retreat from their previously strident stances and use a less competitive negotiation style than they used earlier in the mediation.

Believing it will keep negotiators focused and happy, mediators frequently provide negotiators a wide variety of afternoon snacks and drinks.¹⁴⁸ However, this mediator method is effective beyond raising the negotiators' moods. As discussed previously, eating a sugary snack (like a cupcake) offered by the mediator cuts out one act of willpower—resisting the tempting cupcake—while simultaneously replenishing glucose.¹⁴⁹ As seen with lunch, the custom of mediators providing afternoon snacks may help facilitate settlements by keeping hungry negotiators from leaving the building, and as professors Coben and Love pointed out above, “[s]upplying food or breaks to keep the energy level high can be critical for the stamina needed to understand what’s going on and maintain creativity.”¹⁵⁰ A snack’s temporary glucose boost seems to help keep negotiators engaged late in the afternoon when settlements are often reached. Moreover, the “afternoon diabetes” phenomenon shows that the temporary glucose boost caused by snacks may not raise willpower levels as much as earlier meals would. This is compounded by the fact that negotiators have undergone substantial exertions of willpower by the afternoon hours. Thus, while the Glucose

148. See *supra* note 122.

149. See Green, *supra* note 95.

150. Coben & Love, *supra* note 94, at 20.

Model explains the efficacy of providing snacks, it also warns that they are not an automatic fix for depleted afternoon willpower.

Mediations tend to settle late in the day partly because countless exertions of willpower deplete the body to the point where parties are unable to muster the energy to resist a new offer. As social psychologists make clear, willpower depletion reflects a deficit in fuel and weakens resistance to impulses.¹⁵¹ Moreover, as Joshua Weiss opined in his scholarship on negotiation fatigue, the interests of the parties tend to fade in importance when fatigue and desire for agreement are both high.¹⁵² Negotiation fatigue and desire for agreement¹⁵³ correlate with the decline in willpower and result in an increasing urge to resolve the case. As willpower diminishes and settlement offers approach a party's acceptable range, parties can reach a point where the desire to end the stress of mediating and litigating by accepting an offer outweighs the desire to squeeze an extra few dollars out of the deal by holding firm against further concessions.

While the exact time a party reaches this point will vary from case to case, the physiological bases of willpower combine with the importance of deadlines to explain why it is much more likely to occur late in the day than in the morning or midday.¹⁵⁴ The scientific research teaches that even minor and unremarkable self-regulatory activities deplete willpower throughout the day.¹⁵⁵ In mediations, willpower depletion is accelerated by substantial exertion of willpower (in a stressful, high-stakes environment) on top of the

151. See Gailliot et al., *supra* note 39, at 334.

152. See Weiss, *supra* note 104.

153. See HOPE, *supra* note 121 (noting that the desire to resolve the dispute is a key motivation for mediation parties).

154. Under the Glucose Model, a litigant's number of impulses that require overcoming and his individual glucose metabolism determine the rate at which his willpower depletes. Therefore, the term "deal fatigue" is overly broad and does not fully explain why parties are more likely to accept a deal at the end of a daylong mediation.

155. See Kouchaki & Smith, *supra* note 85, at 1 (discussing how researchers testing the morning morality effect opined, "that the mere experience of everyday living can reduce one's self-control as the day progresses").

self-regulatory activities of everyday life. Studies in endocrinology show that the body metabolizes glucose, a resource on which willpower relies, less effectively in the afternoon.¹⁵⁶ Therefore, midday and afternoon food tends to replenish glucose less than morning food. In addition, parties in daylong mediations tend to be more fatigued and stressed in the afternoon than in the morning. Thus, it is predictable that the parties lose willpower in the afternoon, after focusing attention, making choices and refusing settlement offers throughout the day. Like participants exhibiting the “morning morality effect” and becoming morally lax in the afternoon,¹⁵⁷ parties are much less likely to have the willpower to stick to their original positions and goals after exercising willpower throughout the day. Therefore, the physiological bases of willpower combine with the importance of deadlines to explain why mediations typically settle late in the day.

If parties reach oral agreements to settle, mediators almost universally insist that parties memorialize their settlement agreements in a signed writing before adjourning the mediation session.¹⁵⁸ The practice of making the agreement legally binding is a rational response to the second thoughts and regrets that can sometimes set in after a deal is struck. This is consistent with physiology. After a full night’s rest and a meal, willpower is restored (along with assertive willingness to fight for one’s initial goals and terms), and a party may evaluate the prior evening’s deal in a fresh and critical light. A written settlement agreement signed before adjourning a mediation session effectively prevents these second thoughts from causing either side to rescind the agreement. Thus, the science helps explain the intuitive reasoning behind the practice of urging participants to sign a settlement agreement before leaving the mediation session late in the day.

156. See *supra* Part I(B).

157. See Kouchaki & Smith, *supra* note 85, at 2, 6.

158. See *supra* note 139; see also WARE, *supra* note 123, at 302-03 (“Negotiated settlements may have to be in writing to be enforceable. Oral settlements are even less likely to be enforceable if they arise out of mediation. Some statutes and courts expressly state that mediated settlements are enforceable only if written”) (citing authorities).

III. ETHICAL IMPLICATIONS OF THE GLUCOSE MODEL OF MEDIATION

The Model Standards of Conduct for Mediators (“Model Standards”) require mediators to “conduct a mediation based on the principle of party self-determination.”¹⁵⁹ These guidelines define self-determination as “the act of coming to a voluntary, uncoerced decision in which each party makes free and informed choices as to process and outcome.”¹⁶⁰ To ensure the quality of the mediation process, the Model Standards advise mediators to postpone or terminate the mediation when a party cannot “meaningfully participate” in mediation.¹⁶¹ Evaluations of self-determination and meaningful participation are left entirely to the discretion of the mediator.¹⁶² How should mediators exercise this discretion in light of the physiological bases of willpower, especially when combined with the importance of deadlines? Does declining willpower over the course of a daylong mediation—combined with the power of “you will have to settle in the next thirty minutes or go to trial unless we can figure a way to settle without the mediator’s help”—raise ethical concerns for mediators? For example, how long is “too long” for a mediation session to be conducted? Should mediators be required to warn parties about the inherent risks of prolonged mediation sessions? And, should mediator training include education on the

159. See MODEL STANDARDS OF CONDUCT OF MEDIATORS I(A) (2005).

160. *Id.* This standard is so general that it “leave[s] room for substantial disagreement.” WARE, *supra* note 123, at 298 (contrasting libertarian and egalitarian views about the extent to which the mediator should try to prevent inequalities in the parties’ power—including their “psychological resources”—from being reflected in the terms of settlement).

161. See MODEL STANDARDS OF CONDUCT FOR MEDIATORS Standard VI(A)(10) (“If a party appears to have difficulty comprehending the process, issues, or settlement options, or participating in a mediation, the mediator should explore the circumstances and potential accommodations, modifications or adjustments that would make possible the party’s capacity to comprehend, participate and exercise self-determination.”); *id.* at VI(C) (“If a mediator believes that participant conduct, including that of the mediator, jeopardizes conducting a mediation consistent with these Standards, a mediator shall take appropriate steps including, if necessary, postponing, withdrawing from or terminating the mediation.”).

162. *Id.*

gradual decline of willpower over the course of full day mediations and its physiological effect on party self-determination?

Or should mediators aware of the physiological bases of willpower use that awareness to facilitate settlement? Perhaps parties are generally best served by a system in which mediators seek settlement (including through exploitation of changes in willpower) while lawyers, who are already ethically obligated to protect their clients' interests regarding the terms of settlement, guard against willpower-deprived clients making agreements they will soon regret. If a hungry, tired, and stressed party is making concessions at 4:30 p.m. that he or she refused to make that morning, is the party making a huge mistake or doing the right thing to avoid trial? Is not the party's lawyer in the best position to know and make that judgment?

The physiological bases of willpower highlight the real concern that parties are entering legally binding, and sometimes life altering, settlements when their willpower, and thus their decision making ability, is depleted. Lawyers sometimes need to remove their clients from mediation to give them time for a good night's sleep, or at least a break to drink a Coke or walk around the block. In other cases though, lawyers may need to keep silent while the client's declining willpower eases concessions out of the client—concessions needed for the client to reach a settlement agreement that is better for the client than the alternative of no settlement that day, which may well mean no settlement at all.

IV. CONCLUSION

Willpower matters for negotiation—with or without a mediator. Therefore, the science of willpower matters for negotiation and mediation. This article summarizes that science and shows that willpower, rather than being a stable character trait, is a variable trait dependent on fluctuating physiological resources. Among these resources, along with rest and the absence of stress, is glucose. The Glucose Model of Mediation proposed in this article shows that these physiological bases of willpower combine with

the importance of deadlines to offer a compelling explanation for why so many mediations follow a predictable pattern: stalwart opening positions, a low point before lunch, progress toward settlement accelerating in the afternoon, and a signed settlement agreement near the end-of-day deadline. These insights about the importance of glucose and other physiological bases of willpower raise ethical issues for mediators and lawyers and this article prompts discussion of those issues. However those ethical issues are resolved, every participant in mediation (mediator, lawyer, or party) can be aware of the physiological bases of willpower and use that awareness to better achieve his or her goals.

