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Darby R. Caso April 9, 2018

Crossing Thresholds & Confronting Limits: George Trakas's *Source Route* (1979)

by

Darby R. Caso

Dr. Lisa Lee
Advisor

Department of Art History

Lisa Lee
Advisor

Jean Campbell
Committee Member

Ellen Gough
Committee Member

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Abstract

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In this thesis, I examine environmental artist George Trakas's work, *Source Route* (1979), one of his first major site-specific installations in landscape. Weaving through the Peavine Creek ravine of Emory University, the work consists of two pathways of steps and beams that trace the topographic inclines and meet on either side of the stream at the bottom of the natural terrain. The structural components' narrow dimensions, slight elevations, and sloping trajectories confront the limits of the moving body. The work contains thresholds, transitions in bodily motion and shifts in consciousness, that shape an experience of site. In my analysis of the descent from the north, I draw upon concepts of biomechanics, kinesthesia, and gait theory to investigate how Trakas choreographs the body of his participant. In addition, I situate Trakas in the "expanded field of sculpture," a term art historian Rosalind Krauss uses to describe the new heterogeneity of three-dimensional works beginning in the 1960s. I argue the significance of *Source Route* arises when heightened kinesthetic awareness and strikingly *internal*, bodily experience during the descent gives way to an overwhelming awareness of the *external* environment at the work's locus: the creek at the lowermost point in the topography.

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Contents

I. Introduction: Thresholds of Consciousness

In the southwest corner of Emory University campus, behind the Michael C. Carlos Museum, and in the sloping landscape of the Peavine Creek ravine of the Woolford B. Baker Woodlands, lies artist George Trakas's installation, *Source Route* (1979). Weaving inconspicuously below the lofty trees and through the abundant underbrush, two pathways of narrow steps and elevated beams trace the topographic inclines and meet on either side of the stream located at the bottom of the ravine. Veiled by the multitudinous layers of plant life, the entirety of the work is never fully perceptible at any given point. In order to discern its full composition, the participant must traverse *Source Route* and descend beneath the stratum of active campus life. The work's slim and lengthy dimensions, its slightly elevated structural components, and its slope test the limits of the moving body and inhibit casual or intuitive motion. The participant must exert intense psychological concentration to maintain physiological control. Rather than creating a discrete object perceptible in the round, Trakas offers the mobilized participant a corporal, experiential exploration of an otherwise overlooked and inaccessible natural site.

Though Trakas (b. 1944, Quebec, Canada) is well known today for his site-specific installations and environmental art across the United States and Europe, *Source Route* marked a crucial moment in his career as it was one of his first major installations in landscape. Prior to his visit to Emory and during the early years of his artistic practice, circa the late 1960s to early 1970s, Trakas created works in the interior of galleries. In the mid-1970s, he transitioned to creating works in exterior landscapes, participating in several group exhibitions, such as *Projects in Nature* in Far Hills, NJ in 1975 and *documenta 6* in Kassel, Germany in 1977. Some of his

later site-specific environmental works also were commissioned for outdoor urban sites. *Beacon Point* (2007) was installed on the Hudson River waterfront and consists of a deck and boardwalk that draw attention to and provide access to the water.

In 1979, Emory University invited Trakas, along with a number of artists, scientists, historians, and lecturers, to participate in the 1979 symposium, "Intellect and Imagination: the Limits and Presuppositions of Intellectual Inquiry," organized on the occasion of the 50th anniversary of Phi Beta Kappa. Some of the participants in the symposium included art historian Leo Steinberg, physicist Leon Cooper, philosopher Stanley Cavell, and several notable anthropologists, political theorists, and historians. Trakas, though well-renowned as a vocal advocate for utilizing art to engage communities and to draw awareness to forgotten or endangered sites, also embodied some of the key values of the international conference, such as exploring of the limits of our intellectual consciousness, our physical interactions with sites, and our experience with works of art. In regards to the work's relation to the symposium, *Source Route* offers the opportunity to test the physical limitations of bodily movement and to overcome the trepidation of navigating an unconventional route through an unfamiliar natural terrain. After touring the campus grounds, Trakas chose the Peavine Creek ravine as the site of one of two works he would execute at Emory.[1] In a 2011 interview with Rosemary Magee, the Director of the Stuart A. Rose Manuscript, Archives, and Rare Book Library, the artist explains his attraction to the site: "I thought, well, to bring some of the scholars down to the source, the water, the

[1] George Trakas was initially commissioned to create two temporary works, *Source Route* and *The Quad Pine* for the symposium in 1979. *The Quad Pine* was installed in the Quadrangle, which Trakas considers the "sacred sanctuary of learning," see interview with George Trakas and Rosemary Magee, "George Trakas Creativity Conversation." Trakas later returned to Emory in 1984 to transform *Source Route* into a permanent work. As *The Quad Pine* was a more ephemeral work and poorly documented, this thesis engages solely with *Source Route.*

ravine."[2] Trakas perceived the ravine--which he characterized as "the wild, the unkept, chaotic wild"--as an opportunity to refocus attention on nature and draw awareness to the environmental issues of the site, such as pollution of the water, erosion of the soil, and accumulation of debris.[3]

Prior to the installation of *Source Route*, the only means of crossing the ravine was over Mizell Bridge, located to the east of the work. The entry points of the work are only a few feet from those of the bridge; however, the experiences of traversing them differ substantially. The bridge's level orientation, its consistent concrete composition, and the ease and passivity of its traversal contrast sharply with the varying trajectories and materials of *Source Route*. Though one is aware of the presence of nature while crossing Mizell Bridge, one is physically separated from the natural environment due to its elevation and the three-foot-high concrete wall that runs along either edge. Prior to *Source Route* drawing awareness to the site, it was difficult to access or explore the ravine by foot, allowing for debris to accumulate without much environmental action. Since its installation, there have been numerous efforts to uphold the integrity of the site, including organized trash cleanup and advanced maintenance programs.[4] Rather than impose upon the site, Trakas constructed his work to accentuate and draw awareness to its features, specifically at the lowest point in the terrain.

In the 1979 article, "Walk-In Sculpture Comes to Emory," Trakas is quoted as describing his aims: "I create spaces in which the figure of the spectator can sense the space with his own

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[2] "George Trakas Creativity Conversation," YouTube Video, 38:09, interview with George Trakas and Rosemary Magee about "Source Route" on April 8, 2011, posted by "Emory University," 8 May 2011, https://www.youtube.com/watch?v=PpIxW-ft2-c.
[3] Ibid.
[4] In November, I joined conservator and lecturer Renee Stein, who currently works at Michael C. Carlos Museum on Emory University campus, in a trash cleanup trip down into the Peavine Creek ravine. In the foliage surrounding *Source Route*, we found and collected empty bottles, food wrappers, sheets of plastic and paper, and other pieces of debris. Our expedition was part of a larger effort to maintain the site and uphold the integrity of *Source Route*.

body."[5] In emphasizing the physical body of what Trakas considers his "spectator," he locates the importance of the work apart from its material composition. However, several questions arise concerning the essence of the work. How exactly does the "spectator" sense space, and is this space that of the internal body or external terrain? What parts of the body are integral for this sense to arise? Is this experience physical or psychological, external or internal, tactile or visual? Does this experience alter at certain points along the structural components, and if so, how and to what degree? In choreographing the distinct movement of what he describes as the spectator, Trakas challenges normative patterns of gait and intuitive bodily motion to elicit a poignant encounter with the terrain. In particular, the transitions between the structural components of *Source Route* during the descent constitute thresholds in which the body's movement is forced to alter discernibly.

In order to understand what Trakas meant when describing his intentions, I examine his work from the perspective of my own personal experience and from what I believe to be the ideal experience Trakas foresaw in creating the work. It is important to note that there are countless ways one may engage with his work, such as sitting on its segments, descending and ascending only one side, or walking in the terrain adjacent to its components. However, I attempt to characterize a kind of "control" of the possible experiences, one in which the work is traversed in its entirety along a single trajectory from north to south. In addition, rather than using Trakas's term "spectator," I use the term "participant" to describe the individual who experiences *Source Route* according to the terms of the "control." I arrived at this decision for two main reasons. First, the individual must consciously decide to descend into the ravine and allow the work to determine the specifics of bodily movement. Second, I believe the individual's participation

[5] W.C.Burnett, "Walk-in Sculpture Comes to Emory," *The Atlanta Constitution (1946-1984),* Nov 25, 1979, 2E, ProQuest Historical Newspapers: The Atlanta Constitution (1632378359).

creates the value of *Source Route*. I argue the significance of Trakas's work rests in the moment when the participant's heightened kinesthetic awareness and strikingly *internal*, bodily experience during the descent, which arise from the precariousness of the components and the transitions between them, gives way to an overwhelming awareness of the *external* environment at the work's locus: the creek at the lowest point in the topography.[6] At this most pivotal part of *Source Route*, Trakas dramatizes the transition of cognizance from self to site in order to confound the habitualness of daily life and to reactivate our conscious engagement with landscapes.

In order to understand how this experience is achieved, this thesis draws upon an array of concepts regarding bodily motion, such as biomechanics, kinesthetic experience, and gait theory. In an analysis of the participant's experience of *Source Route*, I seek to reveal Trakas's methods and techniques for heightening *internal* awareness of bodily movement and kinesthesia. Though there is no designated "entrance" to *Source Route*, I focus on the experience of descent from the north, as it poses a more notable challenge to intuitive modes of gait. In particular, the unnerving decline on the slippery steel beams and the suspension of the steel steps above the terrain next to the creek generate a greater sense of bodily displacement and unease, which I see as central to the work's intended effect. As each component problematizes normative modes of gait, it is essential to examine each in turn, as well as the transitions from one to the next.

Prior to providing a detailed analysis of *Source Route* and drawing upon biomechanical research, I will first contextualize Trakas and his artistic practice with that of his contemporaries working in the second half of the twentieth century. This thesis will draw heavily upon the writings of art historian Rosalind Krauss, who offered an influential and illuminating conceptual

[6] Dr. Lisa Lee, e-mail correspondence with author, January 27, 2018.

framework to define the new works of art that challenged traditional conceptions of sculpture. According to Krauss, beginning in the 1960s, sculpture was a term no longer capable of describing the heterogeneity of new three-dimensional works. After considering *Source Route*'s position in what Krauss defines as the "expanded field," I will delve into the experiences induced by the work's formal and material composition. I will then compare *Source Route* to the work of artist Richard Serra in the hopes of further elucidating the specific experience of site Trakas's work generates. As there is limited scholarship on Trakas, Serra serves as an informative foil for Trakas. Though they share similar interests in manipulating bodily movement and producing provocative experiences of specific sites, they differ in how their works direct vision and shape perceptions of those sites. For example, Serra's monumental site-specific works never threaten the stability of the body by confronting intuitive movement, but their imposing presences visually disorient the participant and alter his or her internal sense of gravity. In comparison, Trakas confronts the limits of the participant's physical body by challenging normal modes of gait, such as walking, and shapes visual perception of sites with the body's movement through them. The intention of this thesis is to investigate *Source Route* as an elucidating case study of Trakas's manipulation and choreography of bodily movement to forge new, enlivened relationships between subject and sites, which are crucial to Trakas's larger artistic practice.

II. Trakas in the "Expanded Field of Sculpture"

A major theme that pervades Trakas's work is the integration of art into landscape in order to highlight the intricacies of our physical engagement with sites and to enliven our conscious reception of their contents. His departure from the limiting, isolating, and easily

accessible interior of galleries to exterior, natural terrains liberated his work from the confinement of traditional conceptions of sculpture. According to art historian and critic Rosalind Krauss, sculpture is a "historically bounded category and not a universal one," and sculpture, as a defining term, no longer accurately encapsulated the heterogeneity of three-dimensional works created beginning in the 1960s.[7] Trakas's interest in creating site-specific works that activate the participant physically is in keeping with the wave of artists working just prior to and during the development of his mature work in the 1970s.

In "Sculpture in the Expanded Field," Krauss asserts that a "historical rupture" took place in the 1960s as artists created three-dimensional works consisting of a vast range of materials, compositions, and sites of installation. The rigid categorization of works by medium and style, idealization of self-referential and autonomous forms, and sanctification of the interior space of galleries that epitomized Modernist art, which broadly defines Western artistic production from the 1860s to 1960s, no longer appealed to a younger generation of artists.[8] The diversification of three-dimensional works challenged Modernist considerations of sculpture and necessitated a reevaluation of the term, as well as the contrivance of more specific and elaborate terminology.

Krauss's mapping of the determinant structure of what she describes as "the expanded field of postmodernism" is useful in order to understand the transformations in artistic production that began in the 1960s. She describes the category of sculpture as one suspended between *not-landscape* and *not-architecture*, a finite definition that circumscribes sculpture in terms of exclusion. In this historical moment, this set of binaries was problematized as artists created works of plurality, temporality, and spatiality. What resulted was an expansion of the

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[7] Rosalind Krauss, "Sculpture in the Expanded Field" *October* 8 (1979): 33. doi:10.2307/778224.
[8] Douglas Crimp, "Richard Serra: Sculpture Exceeded," *October* 18 (Autumn, 1981): 69. doi:10.2307/778411.

analytical frame. According to Krauss, two new terms arose to create a quaternary field that accounts for the heterogeneity of new works rather than agglutinate them under a single and increasingly obscured term, sculpture. In this new determinant structure, works are mapped between the original opposition, *not-landscape* and *not-architecture*, and their inversions, *landscape* and *architecture*. Sculpture is, thus, one of four terms on the periphery of these sets of oppositions. The three new categories consist of *marked sites* (between *landscape* and *not-landscape*), *site construction* (between *landscape* and *architecture*), and *axiomatic structures* (between *architecture* and *not-architecture*).[9]

Krauss's expanded diagram reveals the new modes for artists working in the 1960s to 1970s and is useful in order to orient them in relation to one another. In regards to Trakas, Krauss would most likely designate his work as *site construction*. Suspended between *landscape* and *architecture*, his works arise from and complement the natural terrain and consist of constructed materials that dictate movement through the site similar to architectural structures. Trakas employs quotidian, industrial materials, such as wood, steel, and concrete, and derives his composition from the most basic structures of passage. In manipulating the archetypal forms of stairs and ramps and, further, in incorporating them in nature, Trakas constructs an experience in nature that both relates to the cycles of movement in daily life and also exposes the overlooked intricacies of our bodily motion and our environments.

In accordance with his contemporaries working in the "expanded field," Trakas creates works that serve as "a relay between site and subject that (re)defines the topology of a place through the motivation of a viewer."[10] *Source Route* embodies this form of relay, generating a

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[9] Krauss, "Sculpture in the Expanded Field," 38.
[10] Hal Foster, "The Un/making of Sculpture," *Richard Serra: October Files*, ed. Hal Foster and Gordon Hughes (Cambridge: The MIT Press, 2000): 178.

"sculptural experience" reliant on both the topology of the ravine and the active body and mind of its participant. According to Trakas, once the initial threshold, the entrance to the work, is crossed, *Source Route* " puts your body in touch with your mind, your mind in touch with your body."[11] Trakas reveals the intimacy of the relationships between the participant, site, and work by stimulating in the participant a heightened awareness of the living, moving body and a enlivened percipience of the exterior landscape. Rather than subscribe to Modernist notions of sculpture, Trakas followed his near predecessors of the early 1970s in their shift away from the self-contained art object, the idealized "embodiment of plastic form," and towards a "new expanded notion of viewing." Art historian Alex Potts describes this process as one "involving the viewer spatially...kinaesthetically...intellectually, as well as visually."[12] In analyzing the participant's experience of *Source Route*, this thesis might also inform future research aimed at extrapolating Trakas's particular methods of expanding the possibilities and conceptions of sculpture that were insuperable prior to the 1960s.

III. *Source Route* (1979)

Though neither the north nor the south access point is designated the "entrance," the following analysis of the participant's experience along *Source Route* begins at the top of the northern slope. The experience of descending from the north is slightly more precarious in nature due to the higher sense of bodily displacement down its sculptural components. The incline, narrowness, material, elevation, and irregularity of its structural components negate normative

[11] "George Trakas Creativity Conversation," YouTube Video, 38:09.
[12] Alex Potts, *The Sculptural Imagination: Figurative, Modernist, Minimalist* (New Haven: Yale University Press, 2000): 4.

patterns of gait and draw awareness to the inner-workings of the perambulating body. As the participant's experience of *Source Route* is neither uniform nor straightforward, this analysis also draws upon biomechanical research and scientific case studies concerning patterns of gait, which is more thoroughly investigated in the subsequent chapter, to provide crucial information on the dynamics of human locomotion. Though the work conforms to the landscape of the ravine, the structural components separate the body of the participant from the terrain and are responsible for choreographing a temporal, kinesthetic experience of magnified internal consciousness.

In an interview with the author, Trakas described the participant's movement along *Source Route* as a form of dance, a performance that draws cognizance internally to the body. According to Trakas, the transition between each segment of *Source Route* constitutes a "threshold" the body crosses and responds to physically.[13] As a theoretical tool for understanding *Source Route*, it is important to consider the various possible meanings of the term. In regards for architecture, renowned Swiss architect Le Corbusier, who worked in the early to mid-twentieth-century, produced extensive notes and drawings that reflect his interests in spatial boundaries and limits between interiors and exteriors of architecture, such as doors, staircases, and corridors.[14] One can perceive these forms, which differentiate spaces by distinct boundaries, as kinds of thresholds. Another definition of threshold is "the beginning of a state or action, outset, opening"; in technical language, it is also defined as "the magnitude or intensity of a stimulus which has to be exceeded for it to produce a certain response."[15] As for the points of alteration

[13] George Trakas, telephone conversation with author, February 12, 2018.
[14] Maria Pia Fontana, Miguel Mayorga, and Margarita Roa, "Le Corbusier: Urban Visions through Thresholds," *Journal of Architecture and Urbanism* 40, no. 2 (2016): 88. doi:10.3846/20297955.2016.1196541.
[15] *Oxford English Dictionary, s.v.* "Threshold," accessed February 23, 2018, http://www.oed.com.proxy.library.emory.edu/view/Entry/201234?rskey=lYQef7&result=1&isAdvanced=false#eid.

between the structural components of *Source Route*, points of both exit and entrance, the participant must adjust his or her bodily movement to compensate for the requirements of the new component. In addition to this physical traversal, the transition between segments stimulates the mind, demarcating a kind of threshold of cognizance. In order to properly adjust bodily motion, the participant must mentally explore and physical overcome the requirements of these transitions, heightening conscious perception of how certain structures determine our movement through sites. In order to understand this choreographed experience and the nature of each threshold, it is crucial to consider each segment of the work individually and inclusively.

Source Route's northern access point begins with a bumpy steel platform roughly in the shape of a triangle (Fig. 1). The participant steps from Mizell road, which runs from Emory Village to the back entrance of the Carlos Museum, onto the platform that is firmly set into the soil and that has the dimensions of approximately eleven by nine by eight feet. A narrow rectangular concrete slab extends out from the center of the triangle platform approximately four feet, inviting the participant to transition from the concrete road of Mizell Drive to the natural terrain. At this overlook, the participant is positioned above the contents of the sloping terrain with an eye-level approximately halfway up the height of the lofty trees. Mizell Bridge is visible to the left, as well as the academic buildings on the other side of the ravine. However, the density of the woods conceals the distinct features of the ravine. In order to reach the other side, the participant must cross this initial threshold and depart from the built landscape to venture along *Source Route* into the depths of nature.

After progressing onto the narrow concrete slab and taking one step down, the participant is confronted with an abrupt change in trajectory. Set perpendicular to the first step, a series of narrow concrete steps cuts diagonally across the steep hillside, which descends to the

participant's left (Fig. 2). The higher terrain to the right of the steps was planted with ground covering to limit the impact of soil erosion on the stairs.[16] The terrain to the immediate left remains in its original condition, consisting of several feet of dead leaves between the steps and the dense foliage of the woods. The shift in direction prompts a moment of pause in order to assess the landscape and to consider the means of maneuvering down the narrow set of steps without the advantage of a handrail. From the perspective at top of the concrete stairs, a series of narrow steel beams connected to the last concrete step is perceptible in the distance. Though the dark brownish-black color of the beams slightly camouflages them in the terrain, the sheen of their smooth metal surface sets the material apart from the texture of the brown soil and green foliage, as well as from the flat grey concrete. However, once the participant overcomes the initial apprehension of beginning the descent, the narrow steps dominate his or her consciousness and visual perception rather than the consecutive structural components of *Source Route* and the surrounding terrain.

Each concrete step is approximately twenty inches long, six inches high, and ten inches wide (Fig. 3). While the concrete is set firmly in the ground and the distance between the natural and built surfaces is only a few inches, each step forces the body to oscillate precariously back and forth. After descending several of the steps, the participant slowly gains a sense of bodily rhythm. However, this is rendered moot as the participant approaches the last of the steps. The

[16] Due to excessive soil erosion, ground covering was planted in order to diminish the impact on *Source Route*. As the work is situated in nature, it is highly subject to the altering conditions of the site. After it was made permanent in 1984, *Source Route* has undergone past projects of restoration in 1991, 1997, and 2011. One of the most dramatic alterations that took place was when Trakas returned to Emory in 2011 to install the wood steps on the southern bank. Prior to this alteration, the series of wood beams extended to the stepping stone path in the creek. However, the flow of the water created a large gap, approximately three to four feet between the last beam and the creek bed, over the course of years, making it difficult to transition between the structural components. Trakas installed the wood steps to permit his participants to once again traverse the work in its entirety (see note 13 above).

series of steel beams, projecting from the last concrete step at approximately forty-five degrees to the left, contrasts with the steps in their slope, material, and elevation. Though the beam's width remains ten inches, they are elevated between six inches and two feet above the ground (Fig. 4). Twelve vertical steel rods support the beams at intervals of approximately four and a half feet.

After physically crossing the threshold to the first steel beam, the participant perceives its material underfoot. While movement along the sloping steel beams feels smoother compared to that down the steps, their elevation above the ground, their slight concavity (which problematizes secure foot placement), and their slick material elicit a disconcerting and even somewhat threatening sensation. In order to continue along the work, the participant must mentally overcome this disquietude and adjust his or her bodily movement in accordance with the new requirements of the steel beams. Other features of the natural terrain, such as low-hanging foliage, enter the immediate space of the work and impact the participant's fluid progression. At several points along *Source Route*, the participant must suddenly maneuver around branches projecting through the vertical space above the beams. As vision and focus was drawn primarily to the lower half of his or her body, these features are unanticipated until the moment of encounter.

Though questions arise concerning the surrounding environment, they are primarily focused on the body's relation to the most immediate terrain. How far is the beam from the ground? If balance is suddenly lost, what twigs, leaves, or rocks would break one's fall? Are there nearby trees to potentially lend support? Are there additional obstacles to the course, such as low-hanging branches, fallen leaves on the sloping beam, or overgrown bushes that might catch on one's clothing? During the descent, the structural components choreograph the body's

physical traversal through the sloping terrain and focus the mind's perception of the landscape on only the most proximate features. It is not until the participant approaches the end of the series of steel beams that awareness of the greater external environment enters his or her consciousness (Fig. 5). Due to the slightly denser foliage of the northern slope, the lowermost point of the terrain--the source of *Source Route*--is concealed visually from the participant. Though he or she might momentarily discern the flowing creek while descending the steel beams, the participant dedicates conscious attention primarily to his or her direct engagement with the structural components of the work rather than the distant topography. Until the very end of the series of steel beams, only faint sounds of the creek are perceptible and momentary glances possible. At this point, a new threshold confronts the participant.

Suspended above a dramatic four-foot drop in the earth, a series of thin, narrow steel steps connect the last steel beam on the plateau to the lower bed of the creek (Fig. 6). Though measuring the same width as the concrete steps and steel beams, the steel steps contain an additional element of precariousness due to their elevation above the landscape. While descending the previous components of *Source Route*, the body of the participant relates to the surrounding trees in their mutual verticality; however, he or she is cast out from and above the terrain on the suspended steps. At this threshold of *Source Route*, the participant is isolated in his or her positioning and experiences an overwhelming physiological awareness of self in comparison with the horizontal base of the hyperbolically shaped terrain. The suspended steps end in the trickling creek that flows from under Mizell Bridge to the far left, through the trajectory of *Source Route*, and proceeds around a smooth bend to the right. At this point of the

terrain, the participant finally discovers the ravine's hidden creek, which Trakas considers as the source of nature and of intellect (Fig. 7).[17]

Physically demanding, visually disorienting, and psychologically daunting, the suspended steel steps demarcate the peak of *Source Route*'s confrontation to bodily movement. A momentary pause is required to determine their potentially perilous composition and questionable stability. Once the participant overcomes, mentally, the apprehension of descending the steel steps, he or she takes the initial step to test the limits of the moving body once again. In contrast with the smooth steel surface of the beams, the steps are composed of the same textured, bumpy surface as that of the platform of the north entry. On the one hand, the familiarity of the rougher surface elicits a sense of security that is felt tactilely. In addition, the participant's previous experience of navigating the concrete steps and the steel beams combine to inform the participant's movement down this new obstacle. On the other hand, the narrow width and elevation of the suspended steps require even more controlled and constrained movement to compensate for the body's oscillation with each step down until the ground terrain is reached.

In order to maintain internal balance, the participant likely spreads his or her arms while descending. This mode of movement, a precarious form of dance, evokes that of a tightrope walker who, under the constant threat of falling, carefully moves one foot directly in front of the other along a suspended narrow wire. Though the participant's traversal of the beams is visually more comparable, his or her descent on the narrow steel steps is commensurate in audaciousness to tightrope walking, due to the increased distance from the ground, and in the requirement for acute mastery over balance. As this segment leads the participant to the what Trakas considers the source of site, the steel steps demand the greatest kinesthetic awareness to maximize the

[17] "George Trakas Creativity Conversation," YouTube Video, 38:09.

participant's external cognizance of the ravine at their end. On the final steel step, the last marker of descent, the perpetually flowing water confronts the participant physically, in trajectory of motion, and visually, in its sudden proximity, and draws his or her awareness externally to the surrounding environment. At this crucial threshold of the work, the participant finally perceives the full contents of the landscape from the lowest point in its topography.

Prior to this moment of overwhelming external awareness, the abundant foliage obstructs visibility of all the various strata of the sloping terrain, and the structural components of *Source Route* deter the participant from attempting to perceive its contents during the descent. The physical requirements of traversing the work dominate the participant's cognizance until awareness is finally fully externalized at this crucial, central point. This threshold not only delineates between the transit along the north and south slopes but also embodies a metaphorical threshold of consciousness. Rather than focus primarily on the bodily dynamics of traversing *Source Route*, the participant's awareness is drawn from his or her body to the surrounding landscape. Appreciation for the terrain is additionally intensified as the participant consciously reflects on the physical journey of descent and on the considerable efforts required to discover the source of nature, the water.

During first traversal of *Source Route*, the participant stands motionless at this crucial point in the terrain as his or her sensorium is overcome with stimuli previously undetected. Once muted sounds are amplified, such as the water trickling around the rocks, the birds whistling above, and squirrels foraging through the brush, and smells of the damp earth and the trees suddenly break the threshold of awareness. The ravine ultimately unfolds itself as its contents are scanned visually. Inches from the last steel step, the water flows serenely around fallen branches and rocks, carrying dead leaves in its gentle current (Fig. 8). Far to the left, the Mizell Bridge is

suspended high above the natural terrain, passing over its contents. The support structures of the bridge arc over the creek to create a frame in which the built landscape, evidence of human presence, surrounds nature (Fig. 9).

After a poignant visual exploration of the ravine, Trakas forces the participant's attention to fixate once again internally on the body as he or she proceeds across the stepping stone path. Rather than provide a cohesive and consistent path over the creek, Trakas relocated rocks in the water to create a stepping stone path of a type rarely encountered in daily life. The fact that Trakas chose to utilize rocks native to the terrain rather than use man-made materials also reflects the participant's new cognizant relationship to the surrounding nature. As these stones are irregularly scattered, the participant must decide which stones to step on to reach the other bank. Depending on the individual, it takes approximately four to seven steps to cross the water. Until physical contact is made, the participant is unaware of the effects that his or her interaction might have on each rock, which might shift under the pressure of additional weight. This intimate engagement with the elements of nature draws the participant closer to the altering conditions of the terrain. Bodily movement is, thus, both related to the constant movement of the water and contrasted to it due to the perpendicular trajectories of motion. While this segment confounds typical bodily movement, awareness of the surrounding living terrain is not eclipsed in the participant's consciousness. Rather, the motion of the water and previous epiphanic awareness of nature are intimately connected to the participant's movement across the creek.

After successfully traversing the stepping stone path, the participant begins the ascent back up to Emory's built landscape along the structural components of the south slope, which mimic those of the north. On the southern bank, the path of stepping stones across the creek meets a series of six wood steps that are set perpendicularly to the path and that follow the

directional flow of the water (Fig. 10). Though their length and height correlate with those of the concrete and steel steps, the wood steps are eleven-inches-wide rather than ten. The roughness of the wood surface and sensation of moving upwards on this slightly wider sculptural component produce a more comforting sense as compared to that of descending the steel surfaces. In addition, the stability of the steps, which are firmly set into terrain rather than suspended above, contrast with the unsteadiness and alterability of the stepping stones (Fig. 11). Rather than having to decide between what rocks to step on to create a kind of zigzag progression of movement, the participant ascends the steps in a more simplified, straight line.

After ascending the wood steps, the participant continues up the southern slope on a series of five wood planks elevated slightly above the terrain and supported by steel fasteners (Fig. 12). The height of the wood beams above the ground ranges from three inches to one and a half feet. During the journey along the wood beams, the creek is largely visible through a smattering of trees to the left until the final planks. To the right of the first plank, a pile of dead trees, which were moved there after they fell on *Source Route*, were left to rest on the sloping landscape. After approximately fifteen to eighteen steps up the narrow wood pathway, the participant's movement is interrupted. In 2011, a large tree fell on the work, damaging a segment of the wood plank and leaving an approximately three-foot long gap. After Emory consulted with the artist, Trakas resituated a locally sourced rock in the gap to allow participants to traverse the space (Fig. 13). According to him, the act of stepping from the elevated wood plank to the isolated rock and then back to a series of elevating wood planks is symbolic of the participant's journey from the built environment down in to the earth. In addition, this sensation replicates the

descent to and ascent from the creek.[18] After this momentary lapse in the participant's smooth rhythm, he or she continues to ascend the southern slope for approximately ten to twelve steps.

The final segment of the sculpture consists of another series of thirteen steps (Fig. 14). Their supporting structure consists of steel, which is topped with two-inch-thick wooden slabs. The total height of each step is nine inches, which is slightly higher than that of the steel and concrete steps. The combination of materials in this segment seems to symbolically integrate the isolated material components that constitute the rest of *Source Route* and provide a smooth transition back to the more built landscape of Emory's urban campus. The final few steps of the stairs divide into two paths. To the left, the final step is eleven inches high and consists entirely of steel. The right portion starts one step earlier and has a more shallow height of six inches. The participant is given the choice of path: either one that is more physically demanding but has fewer steps or one with more steps but is less kinesthetically strenuous overall. The split in the path prepares the participant to reintegrate him or herself back in the built environment, reintroducing him or her to the accumulated materials of the urban space and more subjective movement amongst its elements (Fig. 15).

After engaging in an immersive psychological and physiological journey through the natural landscape, the exit points of the work position the participant at the entry point of Mizell Bridge, inviting a comparison of the two means of crossing the terrain. Contrasting with the experience produced by *Source Route*, the participant's traversal of Mizell Bridge is far less psychologically and physically stimulating due to its coherent horizontal orientation, consistent concrete composition, and separation from the heterogeneous features of the natural terrain (Fig. 16). Although the trees rising on either side of the bridge are visibly perceptible, the natural

[18] George Trakas, phone conversation with author, February 12, 2018.

terrain is largely extraneous to the journey over the creek due to the bridge's elevation. In addition, the three-foot perforated concrete walls on the edges act as barriers between the natural and built landscapes. In comparison, Trakas directly engages with the elements of nature to elicit an intensified kinesthetic and psychological experience of the site, which is determined by structural components of altering trajectories and varying materials. Therefore, the experience of crossing the wider, horizontally oriented bridge is far less engaging than that of *Source Route*. In fact, the ability to traverse the bridge effortlessly and look away from the body emphasizes even more the degree to which *Source Route* focuses vision inwardly. The only challenge to smooth and routinized movement along the bridge is the occasional passing vehicle on the central roadway. In contrast, *Source Route* rejects the passive stroller, or seated driver, and permits only the physically active, psychologically curious participant.

IV. Confronting Biomechanics of Human Motion

One of the central concerns of this thesis is how the varying materials and structural components of *Source Route* problematize the participant's movement. In order to further extrapolate the nature of traversing the components and crossing the thresholds between them, it is critical to consider the specific mechanics of the human body and draw upon biomechanical terminology and concepts, specifically in the area of kinematics. Though Trakas does not explicitly engage with this discourse when describing his work, I draw upon it as a methodological tool to better understand the participant's bodily experience of *Source Route*.[19] In addition, it is important to note the rise of kinesthesia in formal scientific discourse around the

[19] George Trakas, phone conversation with author, February 12, 2018.

late 1970s. Since 1850, scientists and psychologists have continually revisited concepts of kinesthesia and biomechanics, debating over how to describe bodily movement and offering new terminology. Around the time Trakas created *Source Route*, perceptual psychologist James J. Gordon described movement not merely in terms of muscular mechanics but as an interaction between the body's movement and the physical elements of the surrounding space.[20] Though this parallel phenomenon in scientific discourse may not have directly impacted Trakas in his artistic practice, his interests in shaping this interaction between body and site with *Source Route* coincides greatly with interests of some of the leading scientists, psychologists, and cultural geographers of his time. In engaging with their terminology and biomechanical concepts, I seek to provide an alternative, more scientific way with which to examine the participant's kinesthetic experience along *Source Route* and conscious perceptions of bodily movement through the site.

In *William & Lissner's Biomechanics of Human Motion*, author and scientific researcher Dr. Barney F. LeVeau and his associates provide a comprehensive account of basic biomechanical concepts, which this paper makes considerable reference. LeVeau describes biomechanics as the relation of engineering to the anatomy and physiology of biological systems.[21] The study of motion, kinematics, is divided between two focal areas: statics and dynamics. The former is the study of the body at rest or in a state of equilibrium; the latter is the study of moving bodies. This paper is particularly concerned with the the body of the perambulating participant, which Trakas choreographs to manipulate cognizant awareness.

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[20] Robin Veder, "Walking through Dumbarton Oaks: Early Twentieth-century Bourgeois Bodily Techniques and Kinesthetic Experience of Landscape," *Journal of the Society of Architectural Historians*72, no. 1 (2013): 8. doi:10.1525/jsah.2013.72.1.5.

[21] Barney F. LeVeau, Barney et al., *Williams & Lissner's Biomechanics of Human Motion,* 3rd ed. (Philadelphia: W.B. Saunders Company, 1992): 1.

Human locomotion is not new to modern science and has, in fact, received extensive research in the past and continues to in the present. Specifically in the twentieth century, scientific and intellectual inquiry spurred the formulation of diverse case studies focused on the dynamics of bodily movement. Recent analytical research has expanded our understanding of the ways in which the human body mechanically functions while undergoing cycles of gait, such as walking, stepping, and running. In the second half of the twentieth century, extensive research collected kinematic and kinetic data of human locomotion and translated movement in terms of "time, displacement, velocity, acceleration, force, and moment."[22] These factors are central to understanding how the materials, dimensions, and structural components of Trakas's work manipulate the motion of the participant. In comparison to the journey across Mizell Bridge, the expedition down in the ravine along *Source Route* requires a slower velocity, which is defined by "rapidity or celerity of motion", as well as minimal acceleration and greater concentration in order to successfully traverse the entirety of the work.[23] Though the nature of traversing *Source Route* might vary slightly depending of the participant's mastery of balance, passive and intuitive movement is impossible while engaging with the work.

Similar to the previous chapter, this analysis of the participant's biomechanics along and kinesthetic experience of *Source Route* begins with the north entry point and the concrete steps. Analytical inquiry into the gait characteristics of stepping is informative to investigate the participant's kinesthetic experience of this initial segment of *Source Route*. In the 1980's, biomechanical researcher and professor Andriacchi and his colleagues led several studies to determine the kinematic values (displacement, velocity, acceleration, time), ground reaction

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[22] Ibid., 228.
[23] *Oxford English Dictionary, s.v.* "Velocity," accessed February 23, 2018, http://www.oed.com.proxy.library.emory.edu/view/Entry/222001?redirectedFrom=velocity#eid.

forces, or the forces the ground applies equally back on to the body, and muscle activity of subjects' movements up and down a series of three steps. The values they calculated were specifically aimed at determining the joint ranges of motion for the hip, knee, and ankle, as well as the force exerted between the body and the ground. Their results revealed that the values were greater for the steps in comparison to level walking. In addition, they were generally higher in the absence of a handrail.[24] At the north entry of *Source Route*, the height difference between each concrete step conforms relatively well to the human body's normative patterns of stepping--a standard step height being approximately seven inches; however, their narrow width inhibits a typical, wider stride.[25] This constraint draws awareness to the body's center of balance and muscular mechanics. In addition, the transition from a flat platform to a series of narrow steps, without the support of a handrail, emphasizes the body's vertical displacement down each step and heightens the participant's internal, kinesthetic awareness. Rather than depend on nearby trees or thick bushes in the immediate terrain to lend support, the participant must rely solely on his or her own sense of equilibrium to maintain balance, a precarious act that requires acute attention.

While traversing the thin sloping beams, there is less physical exertion, differentiation in height, and angular bodily tilt with each additional step in comparison to descending the concrete steps. Along the beams, the participant performs a slightly more poised and assured balancing act while walking. Two basic requisites determine basic human walking: "continuing ground reaction forces that support the body" and "periodic movement of each foot from one position of

[24] LeVeau, Barney et al., *Williams & Lissner's Biomechanics of Human Motion,* 222.
[25] Rudi Kobetic, E.B. Marsolais, Peter Samame, and Gregory Borges, "The Next Step: Artificial Walking," in *Human Walking*, 2nd ed., ed. Jessica Rose and James G. Gamble (Baltimore, MD.: Williams & Wilkins, 1994): 242.

support to the next in the direction of progression."[26] As the body undergoes this cyclical motion in which support is transferred between feet, it also experiences deviations from uniform progression. These include slight variations in the body's speed, alterations in height, and oscillations from side to side. While walking a normal level path, the body's point of center "describes a smooth regular sinusoidal curve in the plane of progression" and is displaced both laterally and vertically in this progression.[27] In addition, the human body moves along three cardinal planes: the frontal, dividing the body in half between the front and back, the horizontal, separating the upper portion from the lower, and the sagittal, splitting the left and right portions.[28] While walking, the body's alignment along these planes alters, and the degree of alteration is contingent on the ground the individual traverses. There is, therefore, more bodily displacement along the horizontal and sagittal planes while the participant descends the series of stairs of *Source Route* than along the beams. In other words, the participant's vertical positioning in space alters more dramatically with each step on the stairs. Therefore, it takes more steps along the beams to correlate with same amount of vertical displacement down one step of the stairs. In addition, the body leans more notably to the left and right on the stairs in order to maintain balance and compensate for the abrupt alterations in height. Physically, this experience commands more muscular flexion and tension in the joints.

The idiosyncrasies between the components may appear alarming at first; however, Trakas designed them to challenge normal bodily movement rather than inhibit it all together. With concentrated focus on the physical body, the participant learns to adjust his or her bodily

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[26] Verne T. Inman, Henry J. Ralston, and Frank Todd, "Human Locomotion," in *Human Walking*, 2nd ed., ed. Jessica Rose and James G. Gamble (Baltimore, MD.: Williams & Wilkins, 1994): 4.
[27] J.B. Saunders, Verne T. Inman, and Howard D. Eberhart, "The Major Determinants in Normal and Pathological Gait," *The Journal of Bone and Joint Surgery. American Volume* 35-A. No. 3 (July 1953): 545.
[28] LeVeau, Barney et al., *Williams & Lissner's Biomechanics of Human Motion,* 21.

motion in order to successfully cross the transitional thresholds between the components. Maintaining balance becomes the primary concern throughout the participant's engagement with *Source Route*. The term of center of mass is defined as the "point at the exact center of an object's mass."[29] In order to maintain balance while one's center of mass is displaced, one must continually compensate for the forces acting on the body, such as gravity, friction, air resistance, and so on, and for the body's shift in weight with each additional step. Friction, which is defined as the resistance of "the sliding of one object past another," has perhaps the greatest impact on the participant's movement.[30] In particular, there is little friction between his or her foot and the slick metal surface of the steel beams. If the amount of friction is inadequate, the participant will likely slip or fall. Friction is also reduced under several unavoidable conditions, which make traversing *Source Route* even more arduous. For example, the sloping steel beam of *Source Route* becomes especially slippery after it rains. The participant must take extra precaution due to the wetting of the smooth metal, which diminishes the participant's stability. In addition, fallen leaves pose an additional threat as they also decrease the amount of friction between the sole of the foot and the surface of the work. The different degrees of friction each material creates, the consequences of specific footwear, and the additional complications of leaves and water continuously occupy the mind of the participant. Constant exchanges take place between body and mind in which the materials underfoot are sensed tactilely--tested in their material surfaces and stability of slope--and visually until the participant is confident enough to proceed in motion.

[29] Ibid., 23.
[30] Ibid., 15.

In addition to the slippery surface of the metal, the slope of the beams influences the participant's velocity, acceleration, and cadence, or the amount of steps in a set amount of time.[31] Depending on each participant, he or she might take smaller, shorter, and slower steps to minimize angular displacement of the body's segments, slow its progression, and lower the likelihood of losing balance. It is important to note that the speed and nature of the bodily motion on a single segment of homogeneous material also varies depending on whether the participant is in the process of ascending or descending. The experience of descent on the steel beams, approximately taking thirty-five to forty steps depending on participant's sense of balance, is psychologically more alarming than that of ascent and requires more concentration. Though the participant physically and tactilely engages with the same material component, its elevation above the terrain and its slipperiness is more pronounced during the journey down. The threat of falling is also more visually arresting when the sloping terrain and contents of the ravine are viewed from above rather than from below.

The ramifications of accelerating speed are perceived acutely when a wave of shock rushes through the body after leaning too far or slightly slipping. In fact, the composition and material of the beams advocate not only for moving at a less than normal velocity with minimal acceleration but also for reversing the normal stepping cycle of walking on a level, unobstructed ground. As explained in *Human Walking*, a typical gait cycle is broken into series of events, periods, and phases. In regards for the feet's actions while walking, there are two phases that consist of the *stance*, in which the foot touches the ground, and the *swing*, in which the foot is in the air. In the former phase, there are four key events: *foot strike, opposite toe-off, opposite foot*

[31] David H. Sutherland, Kenton R. Kaufman, and James R. Moitoza, "Kinematics of Normal Human Walking," in *Human Walking*, 2nd ed., ed. Jessica Rose and James G. Gamble (Baltimore, MD.: Williams & Wilkins, 1994): 27.

strike, toe-off.[32] After learning to walk at a young age, these cycles of gait are subconsciously ingrained until an obstacle or unusual course hinders normal gait and reveals the intricacies of simple locomotion. While descending from the north, the participant likely reverses the series of events (i.e. stepping first with the toe rather than the heel), which arguably elicits a greater sense of stability due to the slope and slipperiness of the steel. Though stepping with the toe first is counterintuitive to regular walking, inverting the cycle allows for a greater sense of balance and controlled bodily movement. As the participant progresses, he or she assays various modes of walking and continuously tests the limits of the body (i.e. slowly accelerating until a sense of unease overcomes the body and mind). This phenomenological and psychological interplay focuses attention primarily on the body's encounter with the materials immediately underfoot rather than on the larger contents of the ravine.

As mentioned previously, the elevation of the beams above the terrain is psychologically disorienting and likely induces specific bodily movement in order to counteract the heightened sense of precariousness. Though each structural component angularly displaces the lower segments of the body, it also elicits certain movements and acts in the upper segments. The term body segments refers to the "collection of rigid physical bodies or segments attached by joints...in the case of the lower limbs this usually refers to the feet, calves, thighs, and pelvis."[33] Particularly while descending the steel steps, the participant undergoes a full body experience. Certain mechanisms, such as extending the arms horizontal away from the body, are beneficial for maintaining balance. Though these actions are intuitive in dire circumstances, they may also arise consciously in less severe situations to lower the likelihood of tripping or falling. The

[32] Ibid., 27.
[33] Jessica Rose and James G. Gamble, ed., *Human Walking*, 2nd ed. (Baltimore, MD.: Williams & Wilkins, 1994): 83.

heightened awareness of and attention given to these bodily mechanisms have the ultimate effect of dramatizing the impact of external awareness at the end of the structural component.

The venture across the stepping stone path of the creek also requires acute understanding of the altering relationships between the body's segments and how the body's weight impacts the stones underfoot. Each step on the disparate, slightly unstable, and slippery stones entails the body to lean across the three cardinal planes and contort to maintain balance. It is almost impossible to cross the creek without moments of adrenaline rush and intense muscle contraction, particularly in the legs and core. While the body stumbles and arcs uneasily, the participant learns the physical implications and gravity of his or her own mass. In addition, the presence of the water further complicates bodily mechanics because its perpetual flow distracts from concentration, magnifying a sense of unease that tenses the body.

In comparison to the course across the creek, the ascent up the wood steps at the base of the south slope is physically less demanding. Numerous case studies in biomechanical research have determined that, under normal conditions, ascending stairs is less strenuous than descending.[34] In fact, a sense of comfort is evoked when the participant makes contact with the first wood step due to is rougher surface, slightly wider dimensions, and fixed placement in the ground, as compared to the slick steel and slippery stones. Therefore, the threshold between the stepping stones and the wood steps is one of consolation rather than confrontation. After several steps, the participant becomes more acclimated to the wood material and slowly increases his or her velocity. As opposed to the descent on the steel beams, which promoted a reversal of the basic stepping cycle, the participant's ascent on the wood correlates more with normal, level

[34] Rudi Kobetic, E.B. Marsolais, Peter Samame, and Gregory Borges, "The Next Step: Artificial Walking," in *Human Walking*, 2nd ed., ed. Jessica Rose and James G. Gamble (Baltimore, MD.: Williams & Wilkins, 1994): 242.

human locomotion. The only element that problematizes bodily movement is the stepping stone situated in the gap between two wood beams towards the end of the series--a small reminder of the experience of stepping from *Source Route* to the creek and back to the work. The final segment of *Source Route*, the steel and wood steps at the top of the southern slope, also offers more stability because of the option to reach forward to a higher step in order to catch the body from falling.

Though ascending the wood components on the south slope is largely more comforting, faster, and physically less exhaustive than the north descent, the wood is surprisingly more subject to certain weather conditions than the steel. After a large storm, I attempted to traverse *Source Route* to examine how snow alters the participant's experience of the work. While the cold air and small patches of ice made the steel even more slippery, it was still possible to descend the steel beams at an extremely low velocity. In comparison, layers of ice froze into and accumulated into concave mounds on the surface of the wood beams. As it was impossible to gain stable footing due to the lack of friction, I was forced to ascend the south slope adjacent to the wood components rather than physically traverse them. While the ascent up the south slope is typically less strenuous than the northern descent under normal conditions, the storm's impact on *Source Route* altered how the components confront intuitive bodily movement and made the "control" experience impossible.

Regarding the experience presented in this paper, I argue that Trakas elevated the difficulty of kinetic movement to intensify the participant's awareness of nature at its most visibly accessible point. The participant experiences a striking externalization of consciousness at the north bank due to the slow velocity, intense concentration, and limited acceleration required while descending the previous components of the work. The ease of ascending the south

slope, which the participant experiences after crossing the metaphysical threshold of consciousness at the creek, allows for a combined awareness of both internal biomechanics and external nature that is recalled after exiting *Source Route.*

V. Site, Space, & the Perambulating Body: Trakas's *Source Route* & Richard Serra's *Clara-Clara*

Returning to the initial questions posed in this thesis, the analysis of the participant's experience of descent in the ravine reveals how the structural components of *Source Route* defy intuitive bodily motion to stimulate kinesthetic sense and ultimately a greater appreciation of nature. As described previously, Trakas's interests in manipulating the human body physically and psychologically, as well as in cultivating an experience of site with his work, was shared by many contemporaries working in the "expanded field." American artist Richard Serra was well established prior to Trakas and shares similar interests in site-specificity, industrial materials, and bodily experience of space. A comparison between works by Trakas and by Serra allows us to see more clearly the former's distinct approach to form, site, and the perambulating body.

Krauss has described some of Serra's monumental works as *axiomatic structures* due to their installation in exterior sites, monumental size, and comparability to architecture.[35] Rather than conform to institutional preferences for categorizable art, to minimalist aesthetics of gestalt perceptibility and autonomy, and to the market's desire for consumable art, Serra began in the 1960's to create works extraneous to the context of gallery or museum interiors. One of the main spurs to the development of his work was a reevaluation of the definition of sculpture, which

[35] Krauss, "Sculpture in the Expanded Field," 41.

ultimately confounded and problematized modernist art criticism. Art historian Hal Foster defines a *modus operandi* of Serra's work: "Today 'sculpture' is not given beforehand but must be forever proposed, tested, reworked, and proposed again."[36] It was exactly this process of experimentation with the objective of expanding what constitutes sculpture that led Serra in his artistic practice. Serra was particularly concerned with departing from modernist art by externalizing the perceived value of a work from its autonomous material form, shifting the focus "from object to subject, from ontological questions (of the essence of the medium) to phenomenological conditions (a particular body in a particular space as the ground of art)."[37]

Foster outlines three main principles of Serra's work: "constructivist," "phenomenological," "situational." The first principle relates Serra to the Russian avant-gardists of the early 20th century who strove to infuse their art with a functionalism as part of their social agenda. In addition, Serra shares their interest in constructing and manipulating industrial materials. The second principle, "phenomenological," refers to the way in which his work serves as the body's "activation, in all its senses, all its apperceptions of weight and measure, size and scale." The work, therefore, governs the body's perception and sensory awareness of the surrounding environment they both inhabit. The third principle stems from Serra's interest in site-specificity. Rather than imitating the site, the work alters it, demarcates it, and frames it for the body to experience.[38] His sculptures are, therefore, not categorically defined by their medium-specificity or autonomy but rather by the way in which they engage the individual in a physical, spatial, visual, and psychological experience of site.

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[36] Foster, "The Un/making of Sculpture," 176.
[37] Ibid., 177.
[38] Ibid., 178-9.

The major principles underlying Serra's work correlate substantially with those of Trakas. However, the similarities and differences in their approach to form, space, vision, and the perambulating body is best elucidated in the comparison of *Source Route* with Serra's monumental work, *Clara-Clara* (installed 1983, Tuileries, Place de la Concorde, Paris) (Fig. 17). The work was initially conceived for the forum of the Pompidou Center; however, due to its immense weight and mass, it was installed on the level dirt plain of the horseshoe entrance of the Jardin des Tuileries. Monumental in scale, the work consists of two immense, identical steel curved walls that are approximately one hundred and eighteen feet long and ten feet high. The walls form a kind of "X," from an aerial point of view, with a gap of a few feet between the midpoints of their arcs. In addition, they are slightly tilted and lean in the same direction. When approaching the work, the viewer is enticed to walk along the sloping walls. The monumentality of the work, the material weight of the steel, and the encroaching slant of the walls disrupt spatial intuition and visually disorient, impacting one's sense of internal balance. Though the work is simple in its geometric form and uniform material, *Clara-Clara* complicates bodily movement through the entrance to the Tuileries garden by inhibiting easy, straight access to the site and by destabilizing the body through visual perception.

The most apparent difference between Serra's work and *Source Route* is the way in which they occupy their sites. Rather than intervene with the context of the garden, *Clara-Clara* is isolated within the interior of the entrance; the two walls are distinguished in the immediate space as they are discrete from the structure of the entry. As its walls reverse those of the curved walls of the horseshoe entrance, the work seems to both rise from the site and impose upon it due to its sheer monumentality and the density of the steel. Though Serra insists on defining his work as sculpture, the form of *Clara-Clara* is evocative of that of architecture. Borrowing Krauss's

terminology, the work, or *axiomatic structure*, appears suspended somewhere between *architecture* and *non-architecture*. In contrast, while the composition of *Source Route* is also dependent on its site, the work intimately and discretely weaves through sloping terrain and amongst the trees, bushes, and diverse flora of the ravine. The narrow, slightly elevated components conform to the living landscape rather than impose upon it. At either entry point, the canopy of the trees conceals the entirety of the work. Even from the edge of Mizell Bridge, only segments of the work are perceptible. If one is unfamiliar with the work, one might mistake the visible wood beams on the south slope for fallen trees. While the immensity of *Clara-Clara* necessitates a mobile viewer in order to appreciate its multiplicity of possible viewpoints, the entirety of the work is perceptible from a distance, as the massive sculpture stands isolated in the entrance. As the viewer approaches, his or her field of vision becomes increasingly dominated by the work, which directs his or her lines of sight and frames the physical features of the site.

In regards for their preference of site, *Clara-Clara* exemplifies Serra's general interest in urban sites; however, he has also created many other works in natural landscapes. For example, one of his most notable ephemeral works in nature, *Shift* (1970-1972; King City, Ontario, Canada), commissioned by art collector Roger Davidson, consists of six large concrete forms that zigzag across approximately ten acres of remote countryside (Fig. 18). Never perceptible in its entirety at any given point, the work guides one's movement through the rolling terrain, creating an intense phenomenological perception of the topography.[39] Though its lengthy, abstract composition and installation in a natural landscape is similar to that of *Source Route*, *Shift* varies from *Source Route* in its manipulation of the perambulating body of the participant; rather than challenge the limits of bodily movement, the work instructs movement to reveal the

[39] Rosalind Krauss, "Richard Serra: Sculpture," *Richard Serra: October Files*, ed. Hal Foster and Gordon Hughes (Cambridge: The MIT Press, 2000): 130.

body's relationship to the inconsistent, living landscape. By directing the physical traversal through the rolling terrain, the work determines the possible lines of sight, and visual perceptions of, the terrain, which combine into an overall bodily experience.

While *Shift* exemplifies Serra's interest in natural terrains, Serra's reputation is based primarily on his monumental, urban works, designating *Clara-Clara* as a principle example of his artistic practice and more suitable comparison to consider with Trakas's work. This comparison also reveals the artists' varying approaches to engaging the perambulating body and manipulating form to reveal the underlying significations of distinct sites, one urban and one of nature. Using the words of Rosalind Krauss, both of their works consist of structural elements that "act as barometers for reading the landscape."[40] Due to the dimensions and scale of *Clara-Clara*, the work partially blocks visibility of the gardens from outside the entrance. Though the work is contained in the horseshoe entrance, the experience of engaging with it shapes the participant's initial encounter with the gardens. Rather than selecting a remote and sequestered site, Serra chose a frequented location in which foot traffic becomes congested. In the past, Serra has explicitly expressed his interest in "a density of traffic flow" around his sculptures, reflecting his perception and desire for mass viewership of his work.[41] Though every site has its own associations and historical chronology, the urban sites Serra occupies typically contain more overt social and political connotations. In imposing his works on frequented locations, Serra alters the normal dynamics of maneuvering through them in order to expose the underlying politics. When normal movement is disrupted, one begins to consider the purpose of the site, how one makes use of it, and how one relates to others engaging with the same space.

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[40] Ibid., 138.
[41] Richard Serra and Douglas Crimp, "Richard Serra's Urban Sculpture: An Interview," in *Richard Serra: Interviews, Etc.*, *1970-1980* (Yonkers, N.Y.: Hudson River Museum, 1980): 168.

In its composition and location, *Source Route* contrasts with Serra's public work, *Clara-Clara*. However, Trakas's work similarly amplifies the connotations associated with the site of the ravine. By drawing awareness to the overlooked, formerly forgotten natural terrain from which Emory Campus was initially constructed, the work offers an opportunity to re-engage with nature, to depart from daily cycles of the built campus, and to address the environmental issues of the site. As it rests beneath the stratum of active campus life and is isolated from the daily flows of pedestrian traffic, the ravine was mostly overlooked until Trakas created *Source Route*. In addition, Trakas is not concerned with the dense "traffic flow" with which Serra is preoccupied. Rather, *Source Route* permits only a limited number of participants at any given time. The individual that descends into the ravine along the work, therefore, experiences an intimate and private encounter with the terrain beneath the rush of daily campus life. In choreographing the participant's aberrated bodily movement through sloping natural terrain and directing vision inwardly towards the body, Trakas frames his or her appreciation of the landscape in personal and phenomenological terms. In addition, as his work is intimately integrated in nature, the experience of the participant is, thus, highly subject to the conditions of the site. Though the original composition of *Source Route* was dictated by the topography of the terrain, the ravine never lies dormant nor remains consistent but rather is constantly subjected to unforeseen alterations, which impact the materials of *Source Route* and, therefore, also the participant. Some of these transformations include displacement of the stepping stones, branches falling on and damaging the beams, rainwater affecting the surface of the steel, and ice accumulating on the wood.

As for their manipulation of materials, Serra and Trakas share an interest in industrial materials, but their handling of steel have different ramifications for how their works relate to

site. In *Source Route*, the narrow width, slenderness, and elevation of the steel beams impart a lightness to the durable industrial material, contrasting with the dense weight of Serra's work. While the steel of *Clara-Clara* seems to impose its materiality visually on the participant, the steel of *Source Route* is engaged with tactilely. By traversing along the various structural components of *Source Route*, the participant perceives the materials through physical contact and appreciates the variances, such as textures and created sounds, between concrete, wood, and steel. In addition, Trakas' use of locally-sourced stones to compose the stepping path across the creek also exemplifies the diversity of his accumulated materials, some of which originate from the site, and the intimate relationship he facilitates between the participant and the terrain.

Though the participant is physically displaced while engaging with both *Clara-Clara* and *Source Route*, the nature of that displacement is specific to each work. The difference in disruption to bodily movement is crucial in relation to the focus of this thesis. While navigating along the slightly tilted walls of *Clara-Clara*, the participant walks a level ground that never differentiates in height, slope, or composition. Therefore, bodily movement is never literally challenged nor the mode of walking altered. Rather, the imposing monumentality of the work and the slant of the walls distort the participant's sense of internal balance and perception of gravity in purely visual terms. In comparison, *Source Route* displaces the participant in his or her physical orientation, direction, and bodily movement through alternative means. The participant's sense of precariousness arises from a physical, tactile encounter with the work. While *Clara-Clara* manipulates the participant's outward vision to impact bodily experience, *Source Route* shapes bodily movement to facilitate both internal and external examination by directing vision towards the body and its encounter with the structural components until the creek.

Whether the participant descends into the Peavine Creek ravine along the elevated, narrow structural components of *Source Route* or walks a level ground adjacent to the monumental, sloping walls of *Clara-Clara*, both works determine his or her bodily experience of their sites. The experiences that Trakas and Serra construct exceed pure opticality, which largely determined one's encounter with modernist sculpture. Though their works are situated in different categories within the expanded field of postmodernism, investigating the intricacies of Serra's approach to form, space, vision, and the perambulating body is informative in order to extrapolate that of Trakas. While both are concerned with stimulating internal, kinesthetic awareness and creating a phenomenological encounter with sites, Trakas challenges the limits of the physical body and its motion rather than purely manipulating the participant's visual perception of site. The precarious elevations, slopes, and dimensions of the structural components of *Source Route* prohibit normal patterns of gait and activate *internal* awareness of bodily mechanics. This intensified comprehension of corporeality and bodily motion determines the participant's engagement with the site until reaching the lowest point of the ravine where the threshold to *external* cognizance of space is crossed.

Conclusion

In this thesis, I have situated Trakas and his transition to the exterior landscape amongst his contemporaries working in the expanded field of sculpture, analyzed the participant's distinct experience along *Source Route* beginning from the north entry point, and poised Richard Serra's monumental work, *Clara-Clara*, as an illuminating comparison with Trakas's work. In referencing biomechanical research and scientific case studies concerning basic human gait, I

have sought to extrapolate the ways in which Trakas problematizes the participant's bodily movement to manipulate his or her consciousness. While the narrow dimensions, varying materials, and precarious elevations of the structural components inhibit intuitive patterns of walking and stepping, which constitute the majority of our motion in daily life, the points at which these components meet embody moments of intensified awareness. During the descent into the ravine from the north access point, the participant experiences an overwhelming awareness of his or her physical body particularly at each threshold between the components. The accumulation of these moments of heightened internal consciousness sets the stage for the intense externalization of awareness from the body to the natural terrain at the lowermost point of the ravine.

The analysis of the participant's experience of *Source Route* primarily depicts his or her first engagement with the work. It is important to note that, on the one hand, the requirements of its material composition become more familiar after multiple engagements. After each encounter, the participant becomes increasingly familiar with the contents of the ravine, which most likely escaped perceptibility during the first experience of descent. On the other hand, the altering conditions of the natural terrain, which vary depending on time of day and season of the year, impede the experienced participant's ability to ever fully preconceive his or her exact experience of the work. Each encounter, therefore, encapsulates an enlightening journey down to the source. While art historical discourse has long been preoccupied with water as the source of life, inspiration, community, and so on, I perceive the value of the work, the source of its importance, lies more in this moment of reveal at the north bank of the creek. At this point in the terrain, *Source Route* acts as a source of stimulation for our intellectual agency, which arises from and relates to an increased phenomenological awareness. As Alex Potts explains, artists

working in the expanded field of sculpture in the 1960s to 1970s sought to depart from self-contained art and create works not based on internal, material integrity but rather on a phenomenological and sustained visual encounter of the viewer.[42]

A question that arises is the impact and ramifications of the participant's overall experience of *Source Route*. How does the experience of elevated internal and external consciousness in the ravine, of crossing the thresholds of the work, extend to the participant's encounter with the built landscape upon exiting the work? In using a similar form of art historical and biomechanical analysis of this thesis, future research and consideration may further extrapolate how Trakas's work, and that of artists working in the exteriors of natural and urban landscapes, impact the psychology of the participants beyond the physical sites in which they are integrated. Though Trakas chose a natural terrain that is isolated from the active urban campus, his use of the archetypal forms of stairs and ramps and basic industrial materials relate the participant's experience of *Source Route* to that of every daily life, in which these forms and materials are consistently encountered. Upon exiting *Source Route*, the participant discovers consistencies, as well as discrepancies, between the built and natural landscapes. While traversing the various walkways and stairs on Emory's campus, it is difficult to not consciously compare their composition, material, and purpose to those of *Source Route*. In this light, the participant's encounter with *Source Route*, therefore, extends beyond his or her phenomenological and psychological engagement with the work to instruct a more conscious perception of sites frequented daily. While the structural components act as "barometers for reading the space," *Source Route* acts as a barometer to read our previously unexamined motion through *spaces*, revealing the potential power of art to shape our perceptions. The work, as a

[42] Potts, *The Sculptural Imagination,* 8.

whole, is a threshold on to heightened consciousness. We enter it timidly, unsure of the limits of our body, and exit it physically empowered and more intellectually aware of our bodies, motion, and environments.

Images

Figure 1. North entrance point of George Trakas's *Source Route*, 1979. Ferrous alloy, wood, concrete site-installation. 145.5 feet on south slope, 119.5 feet on north slope. Peavine Creek ravine, Baker Woodlands, Emory University, Atlanta, Georgia; Gift from Phi Beta Kappa, 1978. Personal photograph by author.

Figure 2. Concrete steps of *Source Route*. North entry point. Personal photograph by author

Figure 3. Participant descending concrete steps of *Source Route*. Personal photograph by author.

Figure 4. Center segment of series of steel beams on northern slope. Personal photograph by author.

Figure 5. Last steel beam on northern slope. Personal photograph by author.

Figure 6. Suspended steel steps on northern slope. Personal photograph by author.

Figure 7. Point of view of creek from top of the suspended steel steps. Personal photograph by author.

Figure 8. Broken tree branch and fallen segment of telephone pole in the Peavine Creek. Personal photograph by author.

Figure 9. View of Peavine Creek and Mizell Bridge from stepping stone path at bottom of the ravine. Personal photograph by author.

Figure 10. View of southern slope from north steel steps. Personal photograph by author.

Figure 11. Wood steps connected to series of wood beams on southern slope. Personal photograph by author.

Figure 12. Detail of footprint on segment of series of wood beams on southern slope. Personal photograph by author.

Figure 13. View of stepping stone rock between two wood beams on southern slope. Personal photograph by author.

Figure 14. Wood and steel steps at the top of the southern slope. Personal photograph by author.

Figure 15. South entry point of *Source Route*. Personal photograph by author.

Figure 16. View of Mizell Bridge and Carlos Museum. Personal photograph by author.

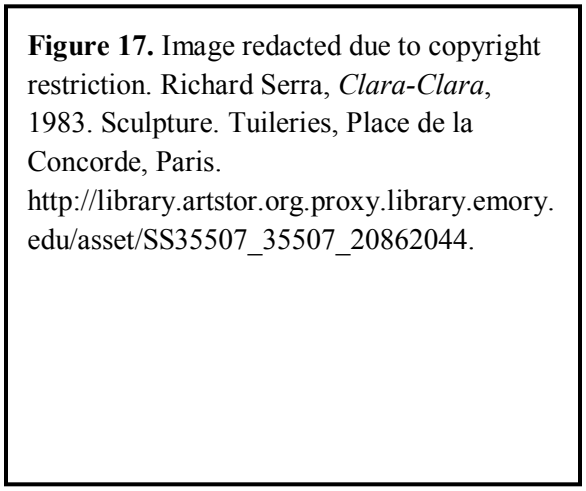

Figure 17. Image redacted due to copyright restriction. Richard Serra, *Clara-Clara*, 1983. Sculpture. Tuileries, Place de la Concorde, Paris. http://library.artstor.org.proxy.library.emory.edu/asset/SS35507_35507_20862044.

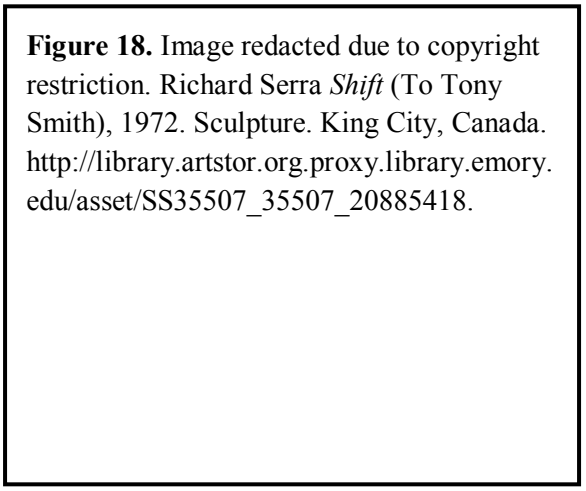

Figure 18. Image redacted due to copyright restriction. Richard Serra *Shift* (To Tony Smith), 1972. Sculpture. King City, Canada. http://library.artstor.org.proxy.library.emory.edu/asset/SS35507_35507_20885418.

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