

POETICS OF LIVELINESS: THEORIES OF EMBRYOLOGICAL DEVELOPMENT
AND GERTRUDE STEIN'S *THE MAKING OF AMERICANS*

by

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Abstract

This thesis seeks to create a theoretical space in which Gertrude Stein's conceptualizations of life and liveliness are related to the biological understandings of living organisms. The primary focus is Stein's early novel *The Making of Americans* (1911), in which she seeks to compose her characters in the process of living. The biological context for thinking about Stein's ideas of liveliness is formulated around theories of embryological development, and, in particular, the historical relation between two developmental theories – preformation and epigenesis. The critical analysis follows the way in which Stein's initial project of classifying every possible kind of men and women to create a typology of personalities in *The Making of Americans* is complicated by her interest in how personalities change through relations that form between individuals. The tension that arises between Stein's initial intention to classify different personality types and her realization that relations play a constitutive role in the development of personality parallels the history of conflict and synthesis between preformation and epigenesis.

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Chapter One: Introduction

“That is what makes life that the insistence is different, no matter how often you tell the same story if there is anything alive in the telling the emphasis is different. [...] It is very like a frog hopping he cannot ever hop exactly the same distance or the same way of hopping at every hop.”

Gertrude Stein, “Portraits and Repetition”

“For Stein vitality – liveliness – is a supreme good; the first and highest value of anyone (or anything) lies in their ‘being completely living.’”

Lyn Hejinian, *The Language of Inquiry*

In her writing Gertrude Stein persistently draws attention to what it means to be living. And this effort to define living, or liveliness, does not strive towards a settled definition, nor does it involve a return to and a revision of a definition she had previously arrived at; instead, Stein identifies in her writing different processes which create an intensification or an increase in the quality of liveliness. As a result, the articulation of liveliness in Stein's writing itself acquires a kind of life and movement through these additive cycles of recurrence. This thesis seeks to explore liveliness in Stein's writing by extending tenuous pseudopodia outward, towards the field of biology, to feel the ways in which "liveliness" and "living" in Stein's writing can be related to various conceptions of life within twentieth-century biology, particularly within theories that attempt to explain the processes of embryological development. While my analysis draws on the biological theories which belong to the historical context of Stein's work, I am not interested only in situating Stein within her historical moment. Instead, I am interested in how Stein's conception of a living organism evident in her compositions from the beginning of the twentieth century can illuminate the complex permutations of the concept of "life" within biological thought up to the present moment, at the opening of the twenty-first century. In her lecture "Portraits and Repetition," Stein writes that if anything is alive, it is not repeating, but continuously varies in its insistence. In order to illustrate this statement, she evokes the example of a living organism: "It is very like a frog hopping," she writes, "he cannot ever hop exactly the same distance or the same way of hopping at every hop" (Stein, "Portraits and Repetition" 100). My argument is that Stein's use of an organism to

illustrate the necessity of varying insistence in order for something to be living is not accidental, and that in her compositions she strives to recreate her subjects as alive in an organismic sense of the term. In other words, Stein, in her writing, is not interested in producing descriptions, but in compositionally recreating the liveliness of existence: “If this existence is this thing is actually existing there can be no repetition. There is only repetition when there are descriptions being given of these things not when the things themselves are actually existing and this is therefore how my portrait writing began” (“Portraits and Repetition” 102). Even in this explanation of her compositional practice from “Portraits and Repetition” Stein’s use of the verb “is” twice, in close proximity, in the first sentence, asserts the existence that she speaks of and offers an inkling of how variations in insistence can bring this existence about. In a sense, in order to produce the living existence of an organism, Stein’s compositions must recreate a hop, and then follow it with another hop, which will be incrementally different in its distance or in the manner of hopping from the one that preceded it. And then, gradually, through accretion, the varied movements of the continuously becoming, living organism are conveyed.

In her early novel *The Making of Americans* (1911), which constitutes the primary focus of my thesis, Stein seeks to compose her characters in the process of “being living,” or, more specifically, “in their loving, sitting, eating, drinking, sleeping, walking, working, thinking, laughing [...] from their beginning to their ending” (“The Gradual Making of *The Making of Americans*” 89). Correspondingly, from its beginning to its ending, the trajectory of the novel itself assumes a lively disposition as a result of several lurching shifts in Stein’s sense of how expansive her project should be. She starts out by writing a “history of a family’s progress,” and then shifts her focus to writing a

psychological typology of “every kind there is of men and women” (Stein, “The Gradual Making of *The Making of Americans*” 92). This project of typology is then complicated as Stein’s focus shifts increasingly towards relations between people as integrally constitutive of their character: “I knew while I was writing *The Making of Americans* that it was possible to describe every kind there is of men and women. I began to wonder if it was possible to describe the way every possible kind of human being acted and felt in relation with any other kind of human being” (“The Gradual Making of *The Making of Americans*” 92). Stein associates this shift towards an interest in relations with “coming to be livelier in relation to [herself] inside of [her] and in relation to anyone inside in them,” and this eventually leads her to complete the writing of *The Making of Americans* and begin writing *A Long Gay Book*. The form of this thesis has emerged as a response to Stein’s interest in constructing a typology of “every kind there is of men and women” in *The Making of Americans*; however, this form is significantly inflected by the complications rendered in Stein’s typology by the inclusion of “what any one feels acts and does in relation to any other one,” and, as a result, it assumes a guise of a typology of relations. Writing a typology of relations as a critical accompaniment to Stein’s typology of personalities is a way to explore the association between coming to be in relation and an increase in liveliness that Stein discovers in the course of writing *The Making of Americans*.

My understanding of the forms of liveliness that Stein associates with coming to be in relation to someone or something begins to take shape in the context of theories of embryological development that inform biological science at the turning point from the nineteenth to the twentieth century. This historical moment offers an appropriate context

for the development of my thinking for two reasons: one is that Stein's training in science spans this junction between the nineteenth and the twentieth centuries, and the other is that the tension present at this moment between two primary theories of biological development, preformationism and epigenesis, offers an encapsulated version of significant trends that shaped biological thinking throughout the twentieth century. Stein spent nearly a decade as a student of science, first as a student of physiological psychology, under the tutelage of William James and Hugo Münsterberg at the Harvard Psychological Laboratory (1893-1897), and then as a student of medicine at Johns Hopkins Medical School (1897-1901). Significantly for my aim of contextualizing Stein's writing within understandings of embryological development, she took courses in embryology at Woods Hole Marine Biological Laboratory during the summer of 1897, prior to enrolling at Johns Hopkins. Perhaps one of the most significant trends in biological thinking of Stein's day was the rediscovery of Gregor Mendel's work on inheritance patterns in pea plants, which led to the formation of genetics as a science of heredity. The emergence of genetics transformed the debate between two theories of embryological development, epigenesis and preformationism, which had been going on, in one form or another, since Aristotle's time. A question posed in a collection of essays on developmental biology *From Epigenesis to Epigenetics: The Genome in Context*, and originally deriving from a footnote in the English translation of Aristotle's *De Generatione Animalium*, offers a brief, but effective, definition of the two developmental theories: "Does the embryo contain all its parts in little from the beginning, unfolding like a Japanese paper flower in water (*preformation*), or is there a true formation of new structures as it develops (*epigenesis*)" (Peck qtd. in Speybroeck *et al.* 7-8)? Historically,

proponents of preformationism had sought to discover miniature preformed organisms in embryonic matter; however, some preformationists acknowledged that these miniature organisms may not in fact be fully formed, but may exist in embryonic matter in the form of precursors, which must undergo further developmental transformation before they begin to resemble a fully formed organism. With the advent of genetics, a course of inquiry structured around Mendel's idea that heritable traits were passed on from one generation to another as discrete units, these preformationist precursors came to be identified with the concept of the gene. In the same moment, at the turn of the twentieth century, the theory of epigenesis, which suggests that development ensues as active properties of organic matter, through their interaction, gradually transform an undifferentiated mass into the organization of the embryo, disentangled itself from the notion that these active properties were a consequence of a vital force, not explainable by the physical properties of matter. The result was the emergence of a kind of epigenesis materialism, under the name of organicism, which located these active properties in the material qualities of the organic matter itself. As intriguing coincidence, Stein attended Johns Hopkins Medical School at the same time (1889-1907) that Ross G. Harrison, a "pioneer in the construction of a modern organicism," was an associate professor of anatomy there (Haraway 65). In my research I assume that Stein, both in her studies at Woods Hole and at Johns Hopkins, would have been exposed to understandings of development informed by the debate between preformationism and epigenesis. Proceeding from this assumption, my reading of *The Making of Americans* nestles within the context of these two developmental theories, as they conflict and eclipse one another

during the course of the twentieth century, and occasionally enter into productive and mutually transformative combinations.

In her lecture “The Gradual Making of *The Making of Americans*” Stein writes that she first became interested in studying “types of characters” while she performed psychological experiments on her fellow students during her studies at the Harvard Psychological Laboratory. The typology of personalities that she constructs in *The Making of Americans* grew out of this initial interest in types of characters: “This then is the way I have been seeing kinds in men and women, the way I see the bottom natures and other natures in them. Always I see them as kinds, always as kinds of substance and ways of that substance being in them as bottom nature” (Stein 351). At the same time, Stein’s conception of personality within the typology as directly derivative of reactive relations between texturally complex, active substances can be read as ensuing out of her hands-on training in laboratory practices during her days as a medical student. The way in which she describes personality types is evidently influenced by the kinds of observations that one would make about “bioactive” matter: “the quickest of these then are such of them where the mud is dry and almost wooden, or metallic in them and it is a surface denting a stimulation gives to them or else there is a surface that is not dry and the rest is dry and it is only the surface of the whole mass that is that one of which there has been any penetrating” (Stein, “Making” 343). In this aspect Stein’s work aligns with the materialist precepts of organicism, according to which properties of life arise not as a result of a vital force, but out of the active properties of organic matter. Stein’s insistence on using descriptions of the substances that compose a particular type of character brings with it several significant qualities. One is that these descriptions convey a spatial

arrangement, a volume composed of heterogeneous areas, which together form a bounded whole. In her descriptions of these substances Stein is usually particularly attentive to the textural qualities and the ensuing reactive properties of the enclosing surface material, which determine how a particular character type interacts with the environment. In my reading of Stein's work through the early twentieth-century theories of biological development, the reactive properties of these substances, their abilities to act, interact, and undergo change, evoke the precepts of epigenesis. At the same time, the emphasis on relations, evident both in the interactions between these substances and the relationship of the whole "mass" to the external environment, can be read as instances of the kinds of liveliness that Stein associates with relations. Yet, simultaneously, Stein's typology hinges on principles that can be read in the context of preformationism in that she persistently returns to the idea that the fundamental divisions between personality types in her system of categorization are based on what she calls "bottom nature," a substance which remains unchanged from its initial state and gradually, but definitively comes to manifest itself. Thus, I have determined that both developmental theories, epigenesis and preformationism, are influential in *The Making of Americans*, and that the positioning of the one beside the other, rather than in incontrovertible opposition to the other, creates a set of productive dynamics within Stein's typology of personalities.

Stein derives not only her idea for constructing the typology of personalities from her studies at Harvard Psychological Laboratory, but also the principles of her methodology for the meticulous study of character that she conducts in *The Making of Americans*. Much of Stein's methodology for coming to know the living subjects that she attempts to recreate in her writing is informed by her exposure at Harvard to radical

empiricist techniques, developed and practiced by William James. In *The Essays in Radical Empiricism* (1912), James reinterprets thoughts and things as related, rather than oppositional categories: “*Thoughts in the concrete are made of the same stuff as things are*” (38). For James, both thoughts and things exist together within the indivisible tissue of experience: “There is only one primal stuff or material in the world, a stuff of which everything is composed, and [...] we call that stuff ‘pure experience’” (3-4). Specifically, within the context of radical empiricism, the concept of “pure experience” does not only encompass thoughts and things as elements that are directly experienced, but also includes relations between elements as aspects of direct experience:

To be radical, an empiricism must neither admit into its constructions any element that is not directly experienced, nor exclude from them any element that is directly experienced. For such a philosophy, *the relations that connect experiences must themselves be experienced relations, and any kind of relation experienced must be accounted as 'real' as anything else in the system.* (James 43, emphasis in original)

One of the consequences of taking relations into account is that within radical empiricism the knower and the known are not discontinuous, rather the relation between them forms a constitutive part of the knowledge that is formed (James 53). The methodology that Stein employs in composing *The Making of Americans* is consistent with the knowledge practices of radical empiricism in that it is attentive to the relation between the observer and the object of observation: “at the same time the relation between myself knowing I

was talking and those to whom I was talking and incidentally to whom I was listening were coming to tell me and tell me in their way everything that made them” (“The Gradual Making of *The Making of Americans*” 85). In this explication of the methodology that she used in composing *The Making of Americans* Stein describes the complex interrelationships that would occur between herself as the observer and the living subjects of her observation. The complexities of the observational process arise, in part, because these interrelationships are unfolding in time and influencing each other through feedback.

The word “made” at the end of the above quotation evokes a few of the meanings that the word “making” assumes in the title of Stein’s novel. Immediately noticeable in Stein’s use of “made” is the indistinction between the external effects and the internal composition that constitutes the subjects under Stein’s observation. This indistinction is created by the confusion of whether the word “everything” in the phrase “everything that made them” signifies an external set of circumstances that act as a source of agency in the “making” of these characters, or whether the phrase “they were coming to tell me [...] everything that made them” signifies a disclosure on the part of these subjects of everything that composes them internally. The effects are additive, rather than selective; both of these are taking place at once and this particular indistinction is quite significant for my analysis, which locates Stein’s writing in *The Making of Americans* in a space that is simultaneously, and irresolvably, caught between the developmental explanations offered by both preformationism and epigenesis. It is of note that “make” as a noun refers both to “type, sort, or brand [...] with reference to the maker” and to the “disposition [of] character” (“Webster’s New World College Dictionary” 867-868). A preformationist

reading would indicate that the unfolding of a process in time, signified by the gerund ending “-ing” in the verb “making” in *The Making of Americans*, is simply referring to the gradual process through which the observer comes to know the object under her observation. In other words, the changing element in this situation would be the process of coming to know, while the “make” of the object under observation would remain preformed or constant. But in Stein’s use of the word “making” this reading is always disrupted by epigenetic effects, or the sense that the “make” of the object under observation is itself changing, both through internal interactions between the bioactive substances that it is made of and through the influences of external environmental agencies, the “everything that made them.” And, as I have already explained, the distinction between these internal and external processes of change or epigenetic effects has no inherent dualistic stability. Thus, “making” in the title *The Making of Americans* engenders several layers of confusion, between the processes of coming to know and making something and the processes through which what is being observed is being made or constituted independently of the observer. In fact, in accordance with the principles of radical empiricism, these two sets of processes become irresolvable in Stein’s work. The liveliness of these layers of confusion is productively framed by Stein’s statement in “Portraits and Repetition”: “But I am inclined to believe that there is really no difference between clarity and confusion, just think of any life that is alive, is there really any difference between clarity and confusion” (104). As this reading of the title of *The Making of Americans* illustrates, the kinds of liveliness that Stein associates with coming to be in relation involve not only the relations that an entity forms with its environment,

which are irresolvably implicated in its development along with the internal relations between its substances, but also the relation between the knower and what is known.

This evidently radical empiricist epistemological approach in Stein's writing acts as a critical framework for the literary critic Steven Meyer in *Irresistible Dictation: Gertrude Stein and the Correlations of Writing and Science* (2001). Meyer explains that the radical empiricist definition of experience is much broader than that associated with traditional scientific empiricism: "Radical empiricism entails an acceptance of intuitive linkages of sense-data, because these associative processes of the mind are no less embodied than the sense-data itself" (12). In contrast, "ordinary empiricism, unlike radical empiricism, requires that one divorce the pursuit of knowledge from one's emotional investment in the procedures one has come to follow" (Meyer, "Irresistible Dictation" 11). Meyer draws upon the radical empiricist tradition to situate Stein's writing as a form of poetic science: "Instead of being modeled on scientific experimentation, her writing turns out to be a form of experimental science itself. [...] In her laboratory she experimented with words in an attempt to articulate her sense of their life" ("Irresistible Dictation" 82, emphasis in original). This view of Gertrude Stein's writing as scientific practice is also advanced in Ulla Haselstein's article "Gertrude Stein's Portraits of Matisse and Picasso" (2004), when Haselstein draws attention to the fact that Stein, in her portraits, uses "certain research methods and recording techniques" acquired during her training at Harvard, "particularly as far as the seriality of testing [is] concerned" (731). Similarly, in her critical work on Stein published in *The Language of Inquiry* (2000), American Language poet Lyn Hejinian suggests that Gertrude Stein's work is a culmination of "various [literary] 'realisms' that emerged from the mid-

nineteenth century on,” and which sought to model “artistic researches” on the methods of science (85). Like Meyer, Hejinian is interested in radical empiricism as a space in which science and poetry can come into relation (Hejinian 135). In its interest in points of contact between Stein’s conceptions of liveliness and the understandings of “life” in twentieth-century biology, my work parallels the work of these critics in their reading of Stein’s writing as a form of scientific inquiry, informed both by the laboratory methodologies and the practices of radical empiricism, that she was exposed to during her training in medicine and psychology. Following the view that Stein’s writing is a kind of “poetic science,” I will not only read her writing in the context of the biological theories and practices of her day, but also proceed from the assumption that the knowledge she acquired about “liveliness” through her compositional practices can inform my reading of the ways “life” is conceptualized within twentieth-century biology.

Chapter Two: From A Typology Of Personalities To A Typology Of Relations

In the thirty-five page first version of *The Making of Americans* written in 1903 and titled “The Making of Americans, Being the History of a Family’s Progress” Stein writes:

In the eighteenth century that age of manners and formal morals it was believed that the temper of a woman was determined by the turn of her features; later, in the beginning nineteenth, the period of inner spiritual illumination it was accepted that the features were moulded by the temper of the soul within; still later in the nineteenth century when the science of heredity had decided that everything proves something different, it was discovered that generalizations must be as complicated as the facts and the problem of interrelation was not to be so simply solved. You reader may subscribe to whichever doctrine pleases you best while I picture for you the opposition in resemblance of the Dehning sisters. (qtd. in Meyer, “Introduction” xxvi)

In this passage from an early version of *The Making of Americans* Stein offers a brief history of the theories that attempt to explain the relationship between physical features and character in the course of the eighteenth and the nineteenth centuries. When she gets to the later part of the nineteenth century, the historical moment when her own training in science took place and which immediately precedes the writing of *The Making of*

Americans, Stein explicitly refers to the science of heredity as the context for theorizing this relationship. This is also the moment when her brief history becomes increasingly confusing: the later portion of the nineteenth century, Stein writes, was a moment when “the science of heredity had decided that everything proves something different” and “that generalizations must be as complicated as the facts” (qtd. in Meyer, “Introduction” xxvi). Even though Stein does not offer specific examples that would clarify the meaning of these “generalizations” and “facts,” it is evident that she is characterizing this period as a moment when the multiplicity of, at times, discordant observations is allowed to engender an equivalently complex set of generalizations. It is this complex relationship between “generalizations” and “facts” that informs Stein’s construction of a typology of personalities in *The Making of Americans* in the most important way. While in her typology Stein does attempt to define clear classification criteria for different types of characters, the primary ones being her classification of people into resisting and attacking types, based on their emotional dispositions, she remains open to registering observations about personalities that do not fit into these criteria, and, as a result, the classification categories in her typology tend to proliferate along with the “facts.” However, Stein is not always entirely flexible about disrupting the overarching classification categories, like that of resisting and attacking types, in light of evidence that transcends these categories in complex ways. Thus, the typology in *The Making of Americans* is productively embattled between a set of nearly stable categories, to which Stein returns again and again, and her willingness to account for observations that do not fit into these categories.

The “problem of interrelation” that Stein identifies at the end of the passage as one that “was not to be so simply solved” can be read as referring to the hereditary

interrelationships within a family. This reading is corroborated not only by the fact that Stein is writing a “history of a family’s progress,” but also, in the immediate context of the passage, by her reference to the “opposition in resemblance of the Dehning sisters” (qtd. in Meyer, “Introduction” xxvi). The word “opposition” in reference to these siblings, however, immediately alerts the reader that these hereditary relations may not be those of clear transmission and resemblance, and, in doing this, it reopens the reading of the word “interrelation.” In the context of my thesis, which seeks to situate Stein’s work within biological understandings of development, the “problem of interrelation” may also be read as referring to the different bioactive substances, which in their interrelation compose an organism, and which are, in turn, affected by the relation between an organism and its environment. From this perspective, “the science of heredity” becomes complexly embedded within other forms of biological inquiry which study the organism as a whole, as well as its relation with the environment. These multiple readings of interrelation, that are explicitly and implicitly available in this passage, offer ways to coalesce different facets of my inquiry into the forms of liveliness that Stein associates with relations.

In her response to the question of correspondence between aspects of character and physical features, Stein turns to physical structures that seem microscopic in their aesthetic qualities. She sees personality as emerging out of relations between bioactive – “solid fructifying reacting” – substances, which, in their interaction, compose anyone’s personality:

There must now then be more description of the way each one is made of a substance common to their kind of them, thicker, thinner, harder, softer, all of one consistency, all of one lump, or little lumps stuck together to make a whole one cemented together sometimes by the same kind of being sometimes by other kind of being in them, some with a lump hard at the center liquid at the surface, some with a lump vegetablsh or wooden or metallic in them. Always then the kind of substance, the kind of way when it is a medium fluid solid fructifying reacting substance, the way it acts then makes one kind of them the resisting kind of them, the way another substance acts makes another kind of them the attacking kind of them. (Stein, "Making" 345)

The description of substances in this passage moves from their thickness to their texture and shape, and then it transitions to their active "fructifying [and] reacting" properties. There is a sense that a substance consisting of one lump would offer less reactive edge than a substance composed of multiple "little lumps stuck together" (Stein, "Making" 345). An intermediary or interstitial substance "cements" the smaller pieces together and mediates between them. Sometimes there is an emphasis on textural contrast with a lump that is hard at the center and liquid at the surface. The description of the arrangement of substances in relation to each other unfolds a spatial dimension, with a central area, surfaces and interstices. The textured shapes arranged in a three-dimensional space evoke the interior of a cell or the arrangement of cells in a tissue, and this leads me to think of them as a kind of histological landscape. The nature of the description adds to this effect, because it resembles what it would be like to describe a microscopic section without

having named any of its constituent parts, and, therefore, having to proceed without orienting landmarks, by describing the qualities of particular regions in relation to one another. If Stein's inquiry in writing can be seen as a pursuit of poetic science, then this is a kind of poetic histology, reminiscent of her attempt, during her studies at Johns Hopkins, to construct a three-dimensional model of a brain region by observing microscopic sections and reconstructing its tracts and nuclei.

The most important classification criteria in Stein's typology of personalities is the division of people into attacking and resisting types. These two types are differentiated from one another based on the dynamic properties of substances that make them up, specifically in reference to how the interactions between these substances lead to the experience of emotions. For the "resisting earthy slow kind of them, anything entering into them as a sensation must emerge again from them through the slow resisting bottom of them to be an emotion in them" (Stein, "Making" 343). In contrast, men and women who "have attacking as their way of winning fighting" are much more reactive, their "sensitiveness is different in kind from that of the resisting kind of being, [their] sensitiveness is quivering into action not a sensitiveness just existing" (Stein, "Making" 350). As a result, those with attacking being "have poignant and quick reaction, emotion in such of them has the quickness and intensity of a sensation" (Stein, "Making" 343). Stein carefully describes the kinds of substances that can generate resisting and attacking being. Resisting being, for instance, can ensue from all of the following combinations of material:

In some it is as I was saying solid and sensitive all through it to stimulation, in

some almost wooden, in some muddy and engulfing, in some thin almost like gruel, in some solid in some parts and in other parts all liquid, in some with holes like air-holes in it, in some a thin layer of it, in some hardened and cracked all through it, in some double layers of it, with no connection between the layers of it. (Stein, "Making" 349)

There is a correspondence between the harder materials and the more inert qualities of the resisting type of people: this correspondence makes sense in terms of the textural qualities of these materials because sensation, according to Stein's theory of emotions, must pass through the "slow resisting" substance making up this type of person before it can emerge into emotion: "Generally speaking then resisting being is a kind of being where, taking bottom nature to be a substance like earth to some one's feeling, this needs time to penetrate to get reaction" (Stein, "Making" 347). In contrast, attacking being arises out of substances that seem either more malleable or more reactive: "I am thinking of attacking being not as an earthy kind of substance, it can be slimy, gelatinous, gluey, white opaquy kind of thing and it can be white and vibrant, and clear and heated" (Stein, "Making" 349).

Stein's division of people into resisting and attacking types rests on her idea that people have a "bottom nature," which is either of the attacking or the resisting type. The bottom nature is one's "natural way of winning, loving, fighting, working, thinking, writing" (Stein, "Making" 344). Complexity arises because the "bottom nature" in many kinds of people is intermixed in various ways with the other natures present in them:

As I was saying some men have it in them to be made altogether of the bottom nature that makes their kind of men. Some have it in them to have other nature or natures in them, natures that are the bottom nature to make other kinds of men, and this nature or natures in them mixes up well with the bottom nature of them to make a whole of them as when things are cooked to make a whole dish that is together then. [...] Some have other nature or natures in them that never mix with the bottom nature in them and in such ones the impulse in them comes from the bottom nature or from the other natures separate from each other and from the bottom nature in them, in some of them there is in them so little of the bottom nature in them that mostly everything that comes out from inside them comes out from the other nature or natures in them not from the bottom nature in them.

(Stein, "Making" 152)

These complex patterns of intermixing sometimes create people who, while their bottom nature is of one kind – resisting or attacking – have a personality characteristic of the other kind. For instance, attacking being can be “so dull, so thick, so gluey [...] so slow in action [that] one could almost think of it as resisting” (Stein, “Making” 349). On the other hand, there are those who have “resisting being [...] in such a thin layer in them that reaction in them is as quick in them as in those having attacking being in them” (Stein, “Making” 373). Yet, Stein reassures the reader that while her system for classifying kinds of people “is often very confusing [...] the distinction[s] [have] meaning” (Stein, “Making” 344). I am interested in the tension that arises in *The Making of Americans* between the systematizing set of categories required for the monumental

task of classifying “every kind there is of men and women” and the fact that in the course of observation Stein comes to a fuller understanding of the complex ways different substances or elements of character intermix, and through these interactions seem to, at least in terms of observable effects, produce forms of character which in many ways subvert the categories of the original classification system. The attempt to satisfy these two conflicting demands in Stein’s typology is a battle for discovering “generalizations [that are] as complicated as the facts,” while retaining the categorizing usefulness of her classification criteria (Stein qtd. in Meyer, “Introduction” xxvi). The irresolvable demands of this tension produce patterns of narrative recurrence in the novel in which Stein sets out again and again to describe “every kind there is of men and women.” Of course, these narrative recurrences are not repetitions; instead, they vary in insistence as the typology in its liveliness undergoes gradual changes.

This tension within Stein’s typology can be productively framed by the conflict between two developmental theories, preformationism and epigenesis. While the historical moment that is of primary interest to me in relation to these two theories begins in the last decade of the nineteenth century and stretches into the twentieth century, a brief historical sketch preceding this moment will enrich the definitions of these two terms and offer some context for their conflicting perspectives.

The concept of epigenesis can be traced to Aristotle. He studied one developing chicken egg per day over the course of 28 days and determined that “there is no such thing as the pre-existence of embryos in adult form” within the egg, thus discounting ideas of preformation (Speybroeck *et al.* 9). Instead, he favoured the idea of epigenesis, according to which a cascade of gradual changes transforms an undifferentiated mass into

the organization of the embryo. For Aristotle the process of epigenesis was teleological, with the developing organism eventually reaching its final species-specific form. The physician Galen (129-200 A.D.) adopted Aristotle's theory of epigenesis and emphasized that embryological development involves dynamic processes as a result of which matter is actually transformed. These processes within matter involve self-movement and self-organization producing "genesis upon genesis – or *epi-genesis* – of the diverse materials an embryo consists of" (Speybroeck *et al.* 11). In the seventeenth century a British physician William Harvey took up Aristotle's ideas of epigenesis and explained them using vitalist principles. Harvey repeated Aristotle's experiments, and, like Aristotle, was unable to observe preformed parts in the egg. As a result, he concluded that a vitalist force activates the passive material of the egg, leading to the development of the organism (Speybroeck *et al.* 12).

Epigenesis lost favor as vitalist views of life declined and were replaced by a materialist desire to elucidate and directly observe the mechanisms underlying the functioning of organisms (Speybroeck *et al.* 13). This led to the resurgence of preformationist ideas, and with the emergence of new microscopic techniques, much of developmental thinking in the 17th century was involved in looking for miniature preformed organisms in embryonic matter. For instance, the Italian physiologist and microscopist Marcello Malpighi (1628-1694) re-examined Harvey's observations on chick development and with the help of a microscope, a technology unavailable in Harvey's time, observed "embryonic structures much earlier in development than Harvey had done and thus concluded that they had to preexist inside the egg and unfold gradually" (Speybroeck *et al.* 15).

Epigenesis was disentangled from its vitalist implications in the 18th century by a German physician Caspar Friedrich Wolff. In his 1759 work *Theoria Generationis* Wolff distinguished between the properties of organic and inorganic matter, ascribing active properties to organic matter, without either resorting to vitalist explanations or subscribing to preformationist principles. Integral to Wolff's epigenesist ideas was the sense that living matter possesses active properties, "contrary to the preformationist concept of nature as a dead mass unto which blind mechanical forces work" (Speybroeck *et al.* 23). Wolff's version of a non-vitalist epigenesis is similar, in many ways, to an epigenesist materialism that will emerge at the beginning of the twentieth century under the name of organicism.

The moment at the junction of the nineteenth and the twentieth centuries, when Stein acquired her training in the sciences, was marked by two crucial developments in the conflict between preformationism and epigenesis. The first one was a result of the emergence of genetics, following the rediscovery of Mendel's work on heredity patterns in 1900. The specific and consistent ratio of the distribution of different traits in pea plants lead Mendel to conclude that inheritance requires a transfer of discrete units from one generation to another. This turn in the science of heredity met with the preformationist notion that development is directed by precursors of the organism within embryonic matter, and, as the science of genetics emerged in the first decade of the twentieth century, these precursors became identified with the concept of the gene. The second development at the turn of the twentieth century involved the final disentanglement of epigenesis from vitalism, and its emergence, under the name of organicism, as a way of explaining development as a set of complex interactions of

bioactive matter. The embryologist Ross G. Harrison pioneered the concept of organicism by insisting that embryology must explain the development of the organism as a whole, in terms of active properties of living matter, without resorting to the “mystical incantations” of vitalism: “Organic form is the product of protoplasmic activity and must, therefore, find its explanation in the dynamics of living matter. [...] The activities of an organism may be nothing more than continuance of those changes that produce development” (Harrison qtd. in Haraway 43-44, 64). Thus, in the context of organicism, the living organism is continuously in the process of becoming, as a result of “interaction, change, emergence, and the reciprocal relationship between the whole and its component parts” (Gilbert, “Preface” xi).

My interest in reading Stein’s writing in the context of early twentieth-century theories of biological development parallels the critical context established by Steven Meyer in *Irresistible Dictation*. Meyer positions Stein’s writing in relation to the emergence of organicism at the beginning of the twentieth-century, with a specific interest in the way this form of materialist epigenesis redefines “‘entity’ in terms of process” and hence as a function of different relations (xviii). Meyer is careful to specify that these relations are both conjunctive and disjunctive in nature (*Irresistible Dictation* 124). This is essential to Meyer’s approach, because he desires to articulate a form of “organicism divorced from traditional notions of organic form” by drawing upon the neuron doctrine, which emerged in the 1890s (*Irresistible Dictation* xviii). The discontinuities inherent in the neuron doctrine configure the nervous system not as a continuous branching network, but as a discontinuous array of nerve cells, interacting with each other across synaptic gaps. This aspect of the neuron doctrine permits Meyer to

develop an organicism unconstrained by the conception of organic form as constituted by the harmonious relations between the parts and the whole. Meyer primarily draws on the neuron doctrine to create an analogy between Stein's disjunctive writing and the discontinuities generated by synaptic gaps in the nervous system. Like Meyer, I am interested in reading Stein's writing in the context of early twentieth-century organicism, but I am more specifically interested in developing my reading within the embryological framework of organicism, rather than the one informed by the neuron doctrine that is of interest to Meyer. Furthermore, I am suggesting that this organicist framework is relevant for Stein's early writing, such as *The Making of Americans*, while Meyer frames the moment between Stein's completion of *The Making of Americans* and her subsequent writing of *Tender Buttons* as a transition from a mechanistic to an organicist mode:

Certainly, Stein's understanding of science was initially mechanistic; thus in *The Making of Americans*, written between 1902-1911, she attempted to describe the precise mechanisms of human personality in greater detail, with the ultimate aim of describing every possible kind of human being. [...] Careful attention to repetition, with its capacity for 'minutest variation,' supplied Stein at this stage of her career with a methodology appropriate in equal measure to her research and her writing. Yet with *Tender Buttons*, composed the year after she completed her monumental novel, she embraced a vigorously non mechanistic outlook. In this collection of prose poetry, and in hundreds of pieces, large and small, written over the next twenty years, she endeavored to portray consciousness in terms of the

experience of writing, as she moved to a more fully ‘organic’ sense of composition. (*Irresistible Dictation* 3-4)

While Meyer is correct to identify a shift in Stein’s compositional style between *The Making of Americans* and *Tender Buttons*, his account of *The Making of Americans* as mechanistic and *Tender Buttons*, as well as Stein’s subsequent writing, as “vigorously non mechanistic” is too crude and fails to identify the nascent and already developed organicist tendencies in Stein’s earlier works. Framing this shift in Stein’s writing in terms of two developmental theories, preformationism, with its mechanistic understanding of the organism, on one side, and organicist epigenesis, on the other, I have determined that both developmental theories have been influential, in their interaction, for the typology of personalities that Stein creates in *The Making of Americans*.

Stein’s insistence in her typology that “the important thing [for classifying types of characters] is knowing the bottom nature in any one” carries with it elements of preformationism, because it privileges the concept of an inherent nature, over the “mixing” that arises as elements of the bottom nature intermix with other natures that are present (Stein, “Making” 299). This preformationist perspective ignores the “problem of interrelation,” which ensues as “this [other] nature or natures in them mixes up well with the bottom nature of them to make a whole of them as when things are cooked to make a whole dish that is together then” (Stein, “Making” 152). Descriptions of the mixing process, on the other hand, emphasize the relationships between different parts that make

up a particular character, and, as such, they present personality as emerging out of the reciprocal patterns of interaction and change between the whole and its component parts. The way in which personality emerges out of this “mixing” parallels the precepts of epigenesis in that organic matter, rather than being static, is understood as continuously transforming developmental and physiological process. Still, the preformationism evident in Stein’s concept of “bottom nature” pulls against the epigenetic principles of mixing and transformation: “In some of such of them they seem to be winning by acting by attacking they live so very successfully in living but nevertheless they are of the kind of them that have resisting winning as their real way of fighting although never in their living does this act in them” (Stein, “Making” 299). This quotation illustrates the paradoxical tension of the pull between preformationist and epigenesist ideas, because it describes a personality which in every active way has attacking nature as inherently resisting. In a preformationist move the character is framed as either attacking or resisting, regardless of whether his observable nature contradicts this initial designation. As I have already explained, Stein locates the basis for her classification system in the properties of substances. In an example in which an attacking type is “so slow in action one almost could think of it as [a] resisting [type]” she makes two conflicting observations about the substance this particular type is composed of. The substance is “so thick, so gluey” and so slow in acting that it resembles the resisting type, and yet it is not the resisting type, “it [is] a different substance in its way of acting, reacting, of being penetrated, of feeling, of thinking than any slow resisting dependent independent being” (Stein, “Making” 349). The substance that composes “the bottom nature” in someone, even if it induces a character type that is atypical, is at its basis not transformed by this

process – it remains either a resisting or an attacking substance. This means that Stein, while interested in observing the complex transformative processes which constitute different character types, seeks to impede the unraveling of her classification system by evoking the comparatively static properties of “bottom nature,” which, in her system, hold these types to their designated categories.

In her lecture “The Gradual Making of *The Making of Americans*” Stein proclaims that she “knew while [she] was writing *The Making of Americans* that it was possible to describe every kind there is of men and women” and that this conclusion led her to “stop continuing to describe this everything” and to move onto the writing of *A Long Gay Book*, where she set out to “describe the way every possible kind of human being acted and felt in relation with any other kind of human being” (92, 96).

These epistemic shifts can be framed by the question of certainty and contradiction posed by the narrator in *The Making of Americans*: “Always more and more I want to know it of each one what certainty means to them, how they come to be certain of anything, what certainty means to them and how contradiction does not worry them and how it does worry them” (Stein, “Making” 481). What interests me is how contradictions come to worry Stein at certain moments in *The Making of Americans* and how she allows them to gradually shift the trajectory of her project, while at other moments she comes to disregard these contradictions and reinscribes the initial intentions of her project. A continuous source of contradiction, which I have already identified, involves the interactions between the bottom nature and other natures present in making up someone’s personality, and how these forms of mixing often result in mismatches between one’s manifested personality and the bottom nature which purportedly is at the basis of it.

Stein's persistent attempt to catalogue the resultant complexity of these (epigenetic) moments of mixing while simultaneously insisting on her initial dichotomous categorizing system of resisting and attacking natures is symptomatic of her conflicted relationship to certainty and contradiction in *The Making of Americans*. There is a continuity between the varied mixing of the bioactive substances and the resultant multitude of personality types, which I have previously placed in an analogous relationship with epigenesis, and Stein's interest in how personality arises beyond the skin of each individual character, through interactions with what or who surrounds them. Rather than accepting Stein's claim that her movement from *The Making of Americans* and onto the writing of *A Long Gay Book* was a result of her certainty that the project of describing "every kind there is of men and women" could be accomplished, and, as such, was no longer of interest to her, I am proposing that it was the contradictions arising out of the emphasis on the role of relations in the constitution of personality that led her away from the typology of individual characters in *The Making of Americans* and towards the description of "every possible kind of pairs of human beings and every possible threes and fours and fives of human beings and every possible kind of crowds of human beings" in *A Long Gay Book* and later on in her descriptions of groups in her plays.

Shifting the emphasis from self-proclaimed certainty and towards moments of contradiction as the propulsive force in Stein's early writing foregrounds the sense of writing as a generative process of discovery, responsive to what it does not expect – to shifts it encounters in itself – and, as such, willing to depart from what it sets out to do. Such shifts are evident even at the very constitutional level of the novel's narrative trajectory, with *The Making of Americans* starting out as a family history, and moving to

becoming a typology of “every kind there is of men and women,” and, in my reading, then becoming increasingly focused on describing the dynamics of relations, rather than types. In a 1970 book of critical writing on Stein’s work *Gertrude Stein in Pieces*, Richard Bridgman offers a vivid, if disparaging metaphor for the shifts he apprehends in Stein’s narrative focus and style in *The Making of Americans*:

If it is regarded as a novel rather than as a psychological and stylistic daybook, *The Making of Americans* is a disaster. Its form is uneven, its focus erratic and uncertain. It gives the impression of someone learning how to drive. Periodically there are smooth stretches, but these are interrupted by bumps, lurches, wild wrenchings of the wheel, and sudden brakings. All the while the driver can be heard muttering reminders and encouragements to herself, imprecations and cries of alarm. (61)

Bridgman embeds his account of the “bumps, lurches, [and] wild wrenchings” of the novel’s narrative within his larger project of relegating *The Making of Americans* to the status of a “daybook”: in other words, to the status of writing that does not, and, at times, his tone would suggest, should not attempt to establish a public relation with an audience, but, instead, remains a privately-useful chronicle of personal development. Re-reading Bridgman’s understanding of development as temporary, and perhaps shameful if publicly revealed, in terms of epigenetic understandings of biological development as a continuous process of becoming, in which the activities of an organism are seen as a continuation of its development, offers a way to re-evaluate the lurching shifts in *The*

Making of Americans as indications of a capacity for change. And the liveliness available in this capacity for change within composition is surprisingly adequate and perhaps the only way to record the liveliness of perception in its apprehension of living being.

According to the developmental biologist Scott F. Gilbert, epigenetic understandings of development “attend to how adults remain permanently in process, permanently maintaining and reworking themselves within their specific formative nexus of relationships” (“Preface” xix). This epigenetic perspective that development extends for the duration of an organism’s life can be used to theorize the changes within different character types that Stein writes about in *The Making of Americans* as not only stemming from the internal mixing of different natures, but also occurring as a result of lively relations between different characters. The view that “the determinants of development [...] need not be always found exclusively within the integument of the cell or the skin of the body” fits into the framework of ecological developmental biology, which extends epigenesis “from interaction[s] between cells of the embryo to the interactions between developing organisms and their respective environments” (Robert 78-79; Gilbert, “The Genome in its Ecological Context” 204). The inclusion of the ecological dimension within developmental biology is a late twentieth century occurrence, and, as such, it may be helpful to briefly situate its emergence in relation to the tension between preformationist and epigenesist understandings of development within twentieth-century biology.

I left off my explication of the historical tension between preformationism and epigenesis at the moment of transition from the nineteenth to the twentieth century, a moment that was marked by the parallel emergence of genetics and organicism. The

emergence of genetics offered a possible biological mechanism for preformationist theories of development, one that did not require the existence of entire preformed organisms in embryonic matter. In 1894 German biologist August Weismann had published a treatise in which he explained that pre-formed particles, located in the nucleus of cells, were parceled out as the initial cells of the embryo replicated, leading to the differential determination of cells (Haraway 29). The pre-formed particles that Weismann postulated could easily be aligned with the concept of the gene. Gene-centric approaches to studying development overshadowed epigenesisist embryological research, particularly after the discovery of the double-helix structure of the DNA and the physical structure of genes and the genetic code in the 1950s. The new focus on gene-centered control of development constituted a form of modern preformationism since it suggested that “the complex end product of embryonic development is already contained in a similarly complex primordial subunit” (Speybroeck *et al.* 32). According to the historian and philosopher of biology Evelyn Fox Keller, in her book *Refiguring Life: Metaphors of Twentieth-Century Biology*, the predominance of gene-centric explanations of development encapsulates a wider trend in twentieth-century biology of conceptualizing the genes as the “primary agents of life [...] and fundamental units of biological analysis” (3).

Even though gene-centric approaches dominated biological research for much of the twentieth century, organicist ideas remained an undercurrent in developmental biology. Keller explains that even some geneticists, notably Richard Lewontin, pointed out that DNA without the cytoplasmic context is incapable of explaining the processes that constitute a living organism (22-23). For instance, while each cell contains the same

subset of genes, during development the cells differentiate through differences in gene expression to form a complex organism. In order to explain such developmental phenomena, embryologist Conrad Waddington, in 1942, attempted to reach a synthesis between epigenesisist embryology and preformationist genetics. Waddington's term for this synthesis – epigenetics – with its prefix “‘epi’ meaning ‘upon’ or ‘over,’” implies the “the need to study events ‘over’ or beyond the gene” and according to biologists Eva Jablonka and Marion J. Lamb it “related back to the Aristotelian theory of epigenesis,” and linked its emphasis on qualitative change during development with genetic research (83). The meaning of the term epigenetics expanded as the research on the regulatory mechanisms of gene expression progressed and this led to the reconceptualization of the genome as a part of a dynamic system, which includes intracellular interactions between genes and cytoplasmic components of the cell, but also intercellular cell-cell communication within the organism as a whole, as well as the environmental context “beyond the skin of the organism” (Speybroeck 80; Gilbert, “The Genome in its Ecological Context” 204). Epigenetics challenged the linear causality of development as an unfolding of the genetic program, and in the 1970s the meaning of the term was expanded once again to include heritable phenomena that cannot be explained by changes in DNA sequence, such as heritable patterns of gene expression. Keller characterizes this “rapprochement of genetics and embryology” as the emergence of a new epistemological framework within late twentieth-century biology: “There is no question that a new way of talking is in the air, in keeping with the emergence of a new biology: molecular [geneticists], it appears, have ‘discovered the organism’” (29). Following the centuries-long conflict between preformationist and epigenesisist ideas, this synthesis between

molecular genetics and the organicist focus on the organism as a whole, in its environmental context, proved fertile, because it could explain both the robustness of the developing organism, as well as its capacity for interaction and change. In my reading of *The Making of Americans* in relation to twentieth-century theories of biological development, I perceive that the interaction of epigenesist and preformationist principles within Stein's typology of personalities also offers these same two explanatory qualities, the ability to account for both the stability of personality and for the changes that constitute it.

The epigenetic understanding of development is continuous with the view of the organism as a complex, integrated system, constituted through positive and negative feedback loops within the organism, and also within the ecological context between the organism and its environment. I will proceed by conceptualizing the relations between the characters in *The Making of Americans* as system-environment interactions. In adopting this approach I am guided by the ecological dimension of late twentieth-century developmental biology, which emerges out of the synthesis between epigenesist embryology and preformationist genetics. This approach is also motivated by the fact that Stein in *The Making of Americans* reaches a similar synthesis by combining the concept of 'bottom nature' with an inquiry into the liveliness brought about by relations. Led by this, I will move, in the following sections, "beyond the skin" of each individual character and think of them as bounded systems embedded within a "nexus of relationships" with their environmental surround.

In conceptualizing the relations between the characters in *The Making of Americans* as system-environment interactions it is necessary to theorize the structural

and functional qualities of the boundary across which these interactions occur. I would like to understand this distinction between the system and the environment in terms of the bioactive properties that Stein associates with organic matter: in such terms it forms a material and textured space, a cutaneous boundary with its own susceptibilities for reaction, permeabilities, directions of exchange, polarities of surface. The function of this outer boundary is dual: it serves both “to hold the organism apart from its environment, and, at the same time, to conjoin the two, and mediate their interchanges” (Langer 421). In order to function as “the frontier of exchange between the organism and its external world,” this boundary has to be semipermeable, selectively letting some molecules in and others out, while barring others altogether (Langer 419). At the cellular level an example is the cellular membrane, which forms a selectively-permeable phospholipid bilayer around the parameter of the cell. It is composed primarily of two continuous layers of phospholipid molecules and membrane proteins, which are interspersed throughout and often span the phospholipid layers. Many of the membrane proteins act as selective channels, which allow specific substances to move across the cellular membrane. In *The Making of Americans* Stein makes a specific reference to skin as a material enclosing all of the other substances that make up a person: “As I was saying Martha had as being a substance solid enough so that Martha’s skin so to speak was part of the substance of her, she was a whole one then more than just by being held together by a skin as was the case in the other” (420). The “other” that Stein refers to at the end of this quotation was “in solution and in so fluid a condition that [its] being is only made an individual one by the skin separating it from flowing over everything near it to lose itself in everything and not have individual existing” (“Making” 419). In these examples skin has an individuating

function; as is the case in systems theory, it serves to make a distinction between an entity and the surrounding environment.

In her book *Mind: an essay on human feeling* (1967), the philosopher Susanne Langer explains that a continuous process of interchange takes place between an organism and what surrounds it: “[an] organism is always under the influence of the world around it, and in its turn always affects at least its immediate neighborhood, if only by using up oxygen, exhaling carbon dioxide, radiating warmth, even when not eating anything or excreting its waste” (24). The exchange of matter between the organism and the environment is ongoing and also asymmetrical. It is this asymmetry of interchange that makes an environment distinct from a system:

The exchange is not strictly speaking a relation between two systems, for the environment is not a system in the same sense as the organism is. [...] The exchange of matter is, therefore not really a mutual transaction, but one in which the inanimate world has the gross control, while the fine control rests with the organism. [...] The environment may also enfold other organisms, but to the organism in point they are parts, though perhaps rather special parts, of the surrounding world. (Langer 25)

In accordance to the system-environment distinction, the environment can be viewed as a “complex of activating agencies” participating in various interactions with the skin-bound organisms immersed in it. The sense of the environment as an active agent is continuous with the ideas of ecological developmental biology, according to which the environment

plays an inductive role in the development of the organism (Gilbert, "Preface" xix). This view extends the epigenetic perspective from the internal interactions that constitute an organism to the sense that the environment which surrounds the organism is an active participant in these interactions. Within this context the characters in *The Making of Americans* can be viewed as developing systems, embedded within a set of formative relations with their environment, which acts as an inductive agent, and which is, in turn, changed by the actions of the systems within it.

In *The Making of Americans* Stein explores the qualities of such interchanges between the characters and their surroundings by describing the delicate gradations of feeling that accompany the exchanges between inside and outside, which are necessary for anything to be living:

How anything coming into that one comes out of that one, how some things coming into that one hardly are coming out of that one, how much the things coming out of that one are different from the things going into that one, how quickly and how slowly, how completely, how gradually, how intermittently, how noisily, how silently, how happily, how drearily, how difficultly, how gaily, how complicatedly, how simply, how joyously, how boisterously, how despondingly, how fragmentarily, how delicately, how roughly, how excitedly, how energetically, how persistently, how repeatedly, how repeatingly, how dryly, how startlingly, how funnily, how certainly, how hesitatingly, anything is coming out of that one, what is being in each one and how anything comes into that one and comes out of that one makes of each one one meaning something and feeling,

telling, thinking, being certain and being living. (783)

The array of qualities ascribed to how “anything is coming out of that one” brings out the complexity with which this process is unfolding. Some of the qualities describe the temporality of this process in a direct way, by making reference to speed: “how quickly and how slowly, [...] how intermittently” it is taking place (Stein, “Making” 783). Interestingly, the quickness and the slowness are not posited as alternatives but occur in combination joined by the conjunction “and,” suggesting that this process can simultaneously be quick and slow. Further on in the list the quality of speed is still evident, this time couched in more affective terms, conveying the excitement or the energy of the interchange. In fact, most of the adverbs used to describe how “anything is coming out of that one” in this list convey an affect. Placing the question “how” in front of an adverb opens it up from a single quality into a more gradated space, generating a sense that each specific manner in which something is occurring is varied in itself. Thus the complexity of the manner in which “anything is coming out of that one” arises both out of the variety offered by the twenty-nine different adverbs and the fact that embedded in each one of them is a range of possible degrees at which this quality of action can be manifested. In “Poetry and Grammar” Stein states that adverbs, along with verbs, articles, conjunctions, and prepositions “are lively because they all do something and as long as anything does something it keeps alive” (128). The liveliness in this passage arises out of the tension between the adverbs, which are numerous, varied, gradated and, at the same time, delicately specific, and the fact that the dominant actions in the passage, conveyed by the verb “to come,” are unspecific, except in assuming an inward or an outward

direction of movement. The lack of specificity and the continuous repetition of actions, as well as the syntactic repetition, such as the coupling of the action of coming out and coming in in the first three phrases of the passage, or the numerous repetitions of the question how, create a background against which the multiplicity of very specific adverbs can create delineated areas of variation. This example conveys the complex and varied ways in which the exchange between inside and outside must take place in order to sustain something living. The unspecific, repetitive use of the verb “to come” coupled with the specificity of the adverbs, creates an interesting continuity. The activity of things coming into and out of a living organism could refer to a range of processes, such as eating and excretion, talking and listening, affective responses etc., yet, at the same time, all of these actions could be qualified by the same set of adverbs: one can both eat and talk boisterously or despondingly. While this passage describes the process of exchange between inside and outside in a general manner, I am interested in moving to more specific examples of the interchanges between inside and outside occurring among the characters in *The Making of Americans*.

In order to accomplish this specificity, I will proceed to analyze several relations which occur between the characters in *The Making of Americans*, contextualizing them within the framework of organism-environment dynamics. Following my interest in the forms of liveliness that Stein associates with relations and the way such relations appear as subject matter in *The Making of Americans*, while taking into account Stein’s interest in typologies, I am proposing to construct a typology of relations. Mimicking Stein’s methodology of using descriptions of bioactive substances and their interactions as the basis for understanding different personality types, I will create analogies between the

structures and functional dynamics of biological systems in their relation to the environment and the way characters in *The Making of Americans* form relations with what surrounds them. Stein's insistence on using descriptions of substances brings with it several significant qualities: the substances are active and personality arises out of their dynamic (epigenetic) interactions, the substances are arranged spatially, forming a volume of heterogeneous areas, which together form a bounded whole, and the substances have textural properties. All of these aspects remain relevant in my use of Stein's methodology. The structure and function of biological membranes or skin will act as the source material out of which I will construct analogies for different types of system-environment relations. I hope that these analogies will at least approximate the complexity and variation of the twenty nine different ways that Stein suggests anything can come out of anyone.

Chapter Three: A Typology Of Relations

Bearing Children: From Being A Part Of Her They Come To Be Around Her

The embodied experience of carrying a child, or a strange sense that we come from the interior of another person, underlies, in part, Stein's metaphoric structure in which one character occupies the interior of another. The relation between Mrs. Hersland and her children illustrates how the change in position from being a part of a person to being around them unfolds gradually over time:

For her her children when they were little things around her it was not to her that they had need of her they were to her a part of her as if they were inside her, as they grew bigger and had their individual living in the house with her as they did not need her to fight out their daily living with their father they did not feel any importance in her, they were for her then no longer a part of her, she had then a weakening in her, she was a little thing then and they were so large around her.
(Stein, "Making" 162)

Stein describes that for women the experience of having children involves a feeling that the children are "a part of them as if they were part of their own body" ("Making" 163). Mrs. Hersland feels that her children, even once they are born, are still inside her, because they are only "little things around her" (Stein, "Making" 162). This example, because of the closeness of the metaphor of one person being within another and the

experience of carrying an unborn child, illustrates the quite apparent, but interesting, discrepancy between the temporalities of feeling and the temporalities of events which lend them metaphoric structure. The moment of individuation involves a separation, carefully delineated through the use of prepositions. The prepositions, coupled to the pronoun her, first indicate that the children are “inside” or a part “of” their mother. Even the repetition of the two pronouns “her” at the beginning of the quotation, the first to indicate Mrs. Hersland and the second as a possessive pronoun, enacts a kind of joining between her and her children. Then, as the children become bigger, they separate from her, and come to be “around” her, a part of the environment that surrounds her.

It Was Different Inside Her Cut Off From The Natural Way Of Living For Her

Stein describes that people often derive a feeling of themselves inside them not from their “natural way of being,” but from being “cut off” from their natural way of living and exposed to a different environment (“Making” 135). The wealthy Hersland family, despite their wealth, inhabit a part of Gossols where no other rich people are living. This dislocation from “right rich living,” which is, as Stein suggests, “the natural way of being” for them, affects members of the Hersland family, particularly Mrs. Hersland. She lacks the awareness that she is cut off from “right rich living,” but she nevertheless comes to experience a change as a result of her new circumstances:

It was strong in her when she went a little later to visit at Bridgepoint and had

her family around her. She was then herself inside her and that made a kind of a princess of her and they, her family, never knew it about her, she never knew it in her, that it was different inside her because of her having been cut off from the way of living that was the natural way of living for her. (Stein, "Making" 135)

This difference inside her becomes apparent to her when she goes to visit her rich family in Bridgepoint, but she does not realize that this difference is the effect of being "cut off" from her "natural" surroundings. Her feeling of herself inside her arises largely through her contact "with the governesses and seamstresses and servants who lived in the house with her, and with the, for her, poor queer kind of people who lived in the small houses near her": "In her living with the servants and governesses and seamstress in her daily living she had a feeling of herself to herself inside her, this was more of an individual being in her than ever had been in her when she was leading with her own kind of people around her the right rich living which was the natural way of being to her" (Stein, "Making" 159). In *The Making of Americans* Stein specifically addresses the circumstances which give a character a feeling of themselves inside of them. The occurrence of this feeling is rare, with most of the characters never experiencing it in relation to anything around them. It is significant then that for Mrs. Hersland this feeling is induced specifically in relation to a change in her external circumstances which dislocates her from her "natural" surroundings, unsettling her into a feeling of herself. This environmentally induced change in Mrs. Hersland can be theorized in terms of Stein's willingness to perturb her preformationist typology and pay attention to the way changing circumstances cause changes in the characters she is describing.

Talking And Listening

Mrs. Hersland's feeling of herself to herself is "at its strongest in her in her relation to the governess Madeleine Wyman" (Stein, "Making" 134). "Mrs. Hersland then had a real being from her early living but it was not, later then, so important to her being or her feeling as in her talking of it to Madeline Wyman she made it come to be in her Mrs. Hersland's feeling" (Stein, "Making" 276). The pronouns "she" and "her" towards the end of this passage are vague in their reference. The pronoun "she" first attaches to the preceding noun Madeline Wyman. As one reads on and reaches the phrase "Mrs. Hersland's feeling," a sense of uncertainty opens about which of the two women is experiencing this feeling, considering that moving back to parse the sentence again reveals that "she made it come to be in her Mrs. Hersland's feeling" could also refer to Mrs. Hersland inducing a feeling of herself inside of Madeleine Wyman. This confusion expresses the complex changes a talker and a listener are both undergoing at the same time, but not necessarily synchronously, in conversing with each other. Thus, Mrs. Hersland develops this feeling of herself in relation to her early living not through direct experience of it but by telling about it and finding an eager listener in the governess Madeleine Wyman. Through this enabling interaction of talking and listening Madeleine Wyman comes to possess both Mrs. Hersland's early living and her "moment of being most herself to herself in her feeling":

Madeleine Wyman then had it in her the feeling of the early living of [...] Mrs. Hersland and this all her later life was an important part of her being and her

feeling. She had this in her always as a possession, [...] she had it in her more than Mrs. Hersland had it as a feeling, her having it in her gave to Mrs. Hersland her important feeling of herself inside her. (Stein, "Making" 274)

Madeleine Wyman's possession of their mother's "early living" makes Mrs. Hersland's children resentful, because they feel that "Madeleine Wyman owning their mother, was to them, not an owning of them, but a cutting off a piece from each one of them" (Stein, "Making" 254). Thus, Madeleine Wyman comes to hold in her possession both aspects of Mrs. Hersland and of her children, and it is only after Mrs. Hersland's death that Madeleine releases these "pieces" by telling "the young Hersland people [...] what their mother had been" (Stein, "Making" 265). Through these acts of listening and holding characters can come to perform a kind of folding in time, bringing, as Madeleine Wyman does, first with Mrs. Hersland's early living and then with the moment when she feels herself most intensely inside of her, these elements of the past into the present.

Pulling away from the specific example of Mrs. Hersland and Madeleine Wyman, in order to draw out more general qualities that shape the interactions between the characters in *The Making of Americans*, reveals that talking and listening are primary modes of interaction. As an alternative description to the idea of *The Making of Americans* as either a family history or a typology of personality, Stein at one point offers that the novel is a history of talking and listening:

This will be now much history of talking and listening. I talk one way and listen another way and talk other ways and listen other ways and so probably does

everyone. This is to be now very much description of talking and listening, of a number of young men and young women talking and of a number of older men and older women talking and of each one of them the young men and young women and the older men and the older women listening. (728)

Talking and listening render a character permeable and allow her to internalize aspects of another. And through this interaction, or, in other words, by having pieces of oneself taken up by someone, as Mrs. Hersland does with Madeleine Wyman, one can come to a feeling of oneself inside of one. These interactions reveal a permeable, receptive quality, through which the characters come to hold within themselves, or, in Stein's words, own aspects of another character. One way to texturally enact the permeability that listening entails in *The Making of Americans* is to think of a dye seeping into and staining a previously transparent tissue underneath the microscope. The tissue comes to hold the dye and, in turn, its transparent structures are rendered visible. What this anecdote allows one to imagine is how an external element, such as an aspect of another's experience or character, can be internalized and come to have a defining quality inside of a person. It is this mechanism that leads Madeleine Wyman to draw "an important part of her being and her feeling" out of her possession of the early living of Mrs. Hersland (Stein, "Making" 274).

This anecdote is perhaps too crude as a model of the interaction from the perspective of the talker. But how does the process of being listened to create for the one talking a feeling of herself inside of her? Another way to proceed is to think about how the experience changes for the one talking depending on if she is being listened to or not

and what the quality of this listening experience is. Stein investigates the awareness of whether one is being listened to, and how some are able to assess accurately whether or not they are being listened to, while others are “mistaken” about this: “Some have it to be certain that not any one ever is listening when they are talking. Some of these are mistaken, some of these are not mistaken. Some of these come to know it in them that they are not listening being so certain in them that there can not ever be conversation in any living for them” (“Making” 727). For the first two sentences of this quotation the positions of the interlocutors, the talker and the listener, seem stable and distinct, and the point of interest is whether or not “some” group of people perceive accurately if others are or are not listening to them. In the final sentence this changes. Here it is the subgroup of those designated in the previous two sentences by the pronoun “some” who assume the position of the listener, and it is their own failure to listen that renders the conversation inert.

It is this unexpected inversion in the third sentence which redirects the flow of the relation to reveal something experientially ordinary, yet, nevertheless, conceptually complex – that those talking are also simultaneously listeners. This is the meaning that emerges after one carefully parses the final sentence, but there is yet another quality evident upon the first reading of this three-sentence passage. Because the first two sentences set up a repetitive pattern, each beginning with the subject some, and going on to separate the roles of the talkers and the listeners as groups at opposite ends of this relation, the reader, arriving at the third sentence and detecting a similar opening, expects the unidirectional flow of this relation to continue. This expectation is foiled as the word “listening” is reached. Texturally the experience of this encounter can be described as an

inflection; it is as though the sentence at this point bends lengthwise with a twisting motion, producing a shape much like the one produced when one twists a long and narrow piece of paper to construct a mobius strip or a curving and inverting shape of a rollercoaster track at one of its bends. At this point of inflection the reader begins to read bi-directionally, faced with the conflicting desire to retrace her steps and confirm that the verb listening is qualifying the pronoun “they” and simultaneously being pulled along to the next word “being”. Following her own precepts outlined in the lecture “Poetry and Grammar,” Stein does not offer a comma to hold her reader’s hand between the words “listening” and “being”. As a result the reading process splits into three different phases. For an instant the word “being” flickers as a noun and the word listening acquires characteristics of an attribute to this noun, designating this kind of being as a listening one. In another phase, as the reader moves in a reverse direction to encompass and then move forward through the phrase “that they are not listening being so certain in them,” there is an impression that the sense of certainty refers to the state of not being the ones listening. With further steps towards the beginning of the sentence a greater depth is achieved as the sense of certainty comes to qualify the state of knowing.

As this reading demonstrates, I have incorporated an attentiveness to the unfolding of the reading process in time into my arsenal of approaches. Misreadings occurred over and over again in my reading of Stein’s work and brought me a kind of pleasurable irritation. For weeks I thought that the title of one of her plays was “Not Slightly” only to realize that the title is actually “Not Sightly”. My mistake was of course encouraged by the fact that the opening line of the play is “not slightly.” Yet to report on this experience as a misreading, which was eventually corrected, is to avoid depicting the

pleasure involved in the way these two readings exist in relation to one another. In “Poetry and Grammar” Gertrude Stein suggests that the living quality of words exists in proportion to their capacity to be mistaken. In this scheme “verbs and adverbs and articles and conjunctions and prepositions are lively because they” can be mistaken; “nouns and adjectives never can make mistakes can never be mistaken” and, as a result, are not lively (Stein, “Poetry and Grammar” 127-128). For Stein the quality of being mistaken is associated with the ability of words to “change to look like themselves or to look like something else” (“Poetry and Grammar” 127). A way to report on this protean ability of words was not to offer a reading, but to think of reading as a temporally constrained process and to describe how the experience of it unfolds in time. Yet the experience of making mistakes when reading Stein’s writing cannot be depicted by offering a sequence of readings which succeed one another. One way to think about the quality of liveliness that Stein associates with mistakes is to think of the reading process as a hysteretic system: “Living organisms constitute hysteretic systems, in which every response sets up mnemonic traces in their structure, so that the next stimulus impinges on a system that may differ quite markedly from the original” (Langer 27). Hysteresis can be understood as a lag in the response of a system to changes, so that its response to further changes is dependent upon its response to preceding changes (Langer 27). For instance, if an elastic band is stretched by having weights hung on one end of it, even upon the removal of the weights, the elastic band will not return fully to its original length; instead, it will remain slightly longer. Applying the idea of hysteretic systems to reading offers a way of understanding that the initial “mistaken” reading is not corrected and overwritten by subsequent readings, but that each reading changes the conditions under which

subsequent readings occur. The title of the play is not rectified to “Not Sightly”; instead, each time that the title is read, an inkling of surprise arises out of the fact that it does not say “Not Slightly.” My theory here is that the conditions of writing that Stein seeks to create are ones in which language as it is read behaves as a hysteretic system, with each word retaining a trace of its previous mistaken forms and relations.

When I return to Stein’s inquiry into the accuracy with which people assess whether they are being listened to or not, a question arises of how such perceptions are gathered. The textural metaphor of listening as generative of a receptive holding space, which I elaborated in the example of the relationship between Mrs. Hersland and Madeleine Wyman, suggests that the speaker is somehow able to detect the degree to which this space is permeable. One effect of setting up an analogous relationship between the quality of the listening experience and a sense of a permeable holding space is to imagine listening as a volume constituted by materials with specific textural and acoustic properties. Thus, this analogy enables one to carry over all of the embodied experience of how sound, or more specifically the sound of one’s voice, changes depending on whether it is being emitted in a cavernous room or one with an absorbent plush interior. This analogy offers a rich textural language for describing the experience of being listened to. This model simultaneously returns to the idea that a talker is also a listener and through this illustrates one way of understanding Stein’s statement in her lecture “Portraits and Repetition”: “One may really indeed say that that is the essence of genius, of being most intensely alive, that is being one who is at the same time talking and listening” (102). One thing that this model enables is the sense of the two instances of listening coming into relation with each other, so that the speaker detects the quality of the listener’s response

as a shift in acoustic space, in which her own voice comes to sound different depending on how she is being listened to by someone else.

My thinking of the relationship between talking and listening in this way stemmed from a desire to ascertain how listening affects talking, or, more specifically, how certain kinds of listening have the capacity to enable particular kinds of talking. These inquiries emerge partly out of and can be transposed onto Stein's continued concerns about the relationship her writing bears to an audience of readers. While this concern spans Stein's entire career, and assumes many different guises as her relationship to her audience shifts, I will proceed with only a few introductory remarks concerning the earliest books of her career, namely *The Making of Americans* and some of the early portraits. The narrator in *The Making of Americans* addresses the reader with this concern directly: "Bear it in your mind my reader, but truly I never felt it that there ever can be for me any such creature, no it is this scribbled and dirty and lined paper that is really to be to me always my receiver – but anyhow reader, bear it in your mind – will there be for me ever any such a creature" (Stein 33). The term receiver, which Stein here uses to refer to paper, but also, by extension, to her potential readers, carries with it, amongst its other meanings, the idea of admitting the entrance of something or having the room to hold or contain something. I was interested in the connection between this idea of receiving and the way different characters in *The Making of Americans*, as is evident in the example of Madeleine Wyman and Mrs. Hersland, come to take in and then hold onto aspects of other characters through interactions of talking and listening. Furthermore, the image of the "scribbled and dirty and lined paper" in this passage suggests an array of textures

with which to initiate thinking about the kinds of permeabilities existent between different characters in *The Making of Americans*.

The narrator in *The Making of Americans* creates a continuity between the broader issue of how writing is received by its audience and the interactions of talking and listening, which pervade most of the relationships between the characters in the book: “No one will listen while I am talking. Some have very much such a trouble in being one being living. Some have not at all any of such trouble in them. Some will listen when I am talking. Some will not listen when I am talking” (Stein, “Making” 726). Stein argues that the initial moment the one writing receives the listening attention and a favorable reception from another is transformative for the writer, because it erodes the completeness of fear and shame brought on by the uncertainty of how anyone is responding to the one writing:

Or you write a book and while you write it you are ashamed for everyone must think you are silly or a crazy one and yet you write it and you are ashamed, you know you will be laughed at or pitied by every one and you have a queer feeling and you are not very certain and you go on writing. Then some one says yes to it, to something you are liking, or doing or making and then never again can you have completely such a feeling of being afraid and ashamed that you had then when you were writing or liking the thing and not any one had said yes about the thing. (“Making” 485)

Ulla Dydo in her introduction to Stein's portrait "Ada" in *A Stein Reader* suggests that this portrait of Alice Toklas describes just such an initial moment of "finding a you who listens to me" as it describes how "endless telling and listening to stories" arising in "the intimate interaction between Toklas and Stein" leads to and enables writing: "Ada was then one and all her living then one completely telling stories that were charming, completely listening to stories having a beginning and a middle and an ending. Trembling was all living, living was all loving, some one was then the other one" (Dydo 100-101; Stein 102-103). Thus, telling and listening to stories sets off a quivering vibration in all living, resulting in a reciprocal inversion between one person and another. Such receptive reciprocity is indicative of the permeabilities, generated by talking and listening, which permit different forms of interchange between the characters in *The Making of Americans*.

How I By The Thing Moving Excitedly Inside In Me Can Find Out What Is
Moving Inside Them

Permeability of individuating boundaries does not characterize all of the relations catalogued in *The Making of Americans*. A different set of relations arises out of the resistance of a system to open its boundaries and enter into relations of exchange with other systems. For instance, the relationship between David Hersland and his wife is characterized by Mrs. Hersland's resistance to her husband, which induces an affective response in him: "In his earlier living when she first was a wife to him she was a little outside of him she could a little affect him she could a little resist herself to him, she was

then in him a beginning as a tender feeling, she was then in him a little like a flower inside him, she was a little then outside him to him, she was then a little important to him as outside him” (Stein, “Making” 155). In this case, Mrs. Hersland remains on the outside of David Hersland, and yet her presence on the outside of him creates an affectively structured version of herself inside of him. This affective version of herself is not representational; instead, it possesses a metaphorical correspondence through which she becomes “a little like a flower inside him” (Stein, “Making” 155). These characters exhibit operational closure towards each other, a form of interaction within systems-theory in which one of the systems perturbs the other one, thus inducing changes in it without moving inputs or outputs across its barriers. The structure of the perturbed system determines how it will respond to this external influence, so that the external trigger does not possess a representational self-identity within the affected system, but is, instead, transformed into “an element in the new phase of” this system (Langer 283).

It is important to distinguish between a closed system and an operationally closed system. A closed system does not exchange matter with the environment. No living organism is, therefore, a closed system. Operational closure describes a mode of interaction between a system and the environment in which the environment is able to induce a change in the system without penetrating its barriers. This change produced in the system corresponds to, but does not have the same form as the initiating external trigger. Sensory stimulation impinging on an organism affects it according to the principles of operational closure, so that the original stimulus is transduced by the specialized receptor cells into a form of an electrical impulse, that can be transported by the nervous system to the brain. For instance, transduction is the conversion of sound

waves into nerve impulses by the hair cells of the ear. Thus, there is no conceptual contradiction between operational closure of a system and its permeability. Instead, they in combination mediate the relationships between the system and the environment.

The result of these recurrent interactions between the system and the environment, or between two systems, will be a history of mutual congruent structural change, known as structural coupling. The concept of structural coupling assumes a place of central importance in the way two biologists Humberto Maturana and Francisco Varela theorize the functioning of the nervous system and communication. It offers an alternative to the two extreme viewpoints: that the nervous system is either solipsistic or representational. In other words, the nervous system cannot be solipsistic because it is involved in the continuous process of structural change in response to triggers arising within the environment, and it cannot be representational because it does not involve inputs or outputs, rather it involves recurrent perturbations in the system in response to the environment: “The phenomenon of communication depends not on what is transmitted, but on what happens to the person who receives it. And this is a very different matter from ‘transmitting information’” (Maturana and Varela 196).

The model of communication informed by structural coupling and operational closure is analogous to one of the ways Stein thinks about communicative relations she employed in *The Making of Americans*. In one of her subsequent lectures “Portraits and Repetition” she describes the relational technique she relied on in the writing of *The Making of Americans* and her portraits: “And in any one I must or else I must betake myself to some entirely different occupation and I do not think I will, I must find out what is moving inside them that makes them them, and I must find out how I by the thing

moving excitedly inside in me can make a portrait of them” (Stein 110). According to this model, communication involves a correspondence between two systems, so that while they remain discrete from each other, the dynamic aspect of one exists in relation to the dynamic aspect in the other. From this perspective the observer relates to the object of observation only indirectly, responding to the perturbation induced by the activity in the other system according to the structural constitution of her own system, by its own corresponding, but not necessarily directly resembling activity.

According to this model of communication, coming to know another person is never a direct experience; rather, it involves interpreting the perturbations this person induces in oneself. In *The Making of Americans* Stein describes surprise and then disillusionment that comes with the realization of the discrepancy in one’s sense of someone and an event which reveals that person to be different than one expected:

Often it is very astonishing, it is like seeing something and some one who always has been walking with you and you always have been feeling that one was seeing everything with you and you feel then that they are seeing that thing the way you are seeing it then and you go sometime with that one to a doctor to have that one have their eyes examined and then you find that things you are seeing they cannot see and never have been seeing and it is very astonishing and everything is different and you know then that you are seeing, you are writing completely only for one and that is yourself then and to every other one it is a different thing and then you remember every one has said that sometime and you know it then and it is astonishing. (430)

This failure in complete equivalence of experience or communication is established as a problematic in broad terms for the relationship between the writer and her audience, but also in a more specific context for the “outcome” of *The Making of Americans* as a project attempting to “describe every kind of human being that ever was or is or would be living” (Stein, “The Gradual Making of *The Making of Americans*” 89). I am attempting to delineate the concern present in *The Making of Americans* with different ways of coming to knowledge of another person and the way all of these forms of knowing are fraught with anxiety about the uncertainty of their capacity for achieving “complete” knowledge: “I am in desolation and my eyes are large with needing weeping and I have a flush from feverish feeling and I am not knowing what way each one is experiencing in being living and about some I am knowing in a general way and I could be knowing in a more complete way if I could be living more with that one and I never will live more with everyone” (Stein, “Making” 729). The affective state of the narrator in *The Making of Americans* oscillates between the state of distress, expressed in this quotation, at the impossibility of ever completely coming into living relation with everyone and, as a result, not ever completely coming to know everyone. These moments of despair are mitigated by varied moments of optimism in which the aim of the project seems gradually achievable.

Engulfing

Stein uses the metaphor of “a cannon-ball lying on a bag of cotton” to describe engulfing being. This metaphor conveys the close relationship between a bag of cotton and the cannonball resting on it: “This one that I was saying was a whole one which was like a cannonball resting on a bag of cotton was the cotton part finding the cannonball lovely looking that being so closely always to that thing” (Stein, “Making” 563). What seems promising about this metaphor is the tension present in the close, almost immersive contact, between the two entities and the way they simultaneously remain delineated from each other, each enclosed within its own surface. Stein frames this sense of closeness in visual terms, suggesting that it is much like children finding their mother lovely because they are always looking at her from close up. But it is the spatial, one could say haptic, relation between the bag of cotton and the cannonball resting on, pressing down on or indenting its surface that conveys the engulfing relation.

The process of endocytosis seems to offer a close biological analogue for the interaction of engulfing that Stein describes in *The Making of Americans*. Unlike other modes of membrane permeability by which external substances enter the cell through selective channels, endocytosis allows the cell to internalize relatively large external entities at once. It may be used by a single celled organism to ingest food or by a cell of the immune system to take up an invading organism and neutralize it within the cell interior. During endocytosis the cell membrane invaginates forming a pocket around the substance that is to be ingested. This invaginated pocket of the cellular membrane then separates from the main body of the membrane surrounding the cell and becomes a

vesicle containing the substances that are being taken into the interior of the cell (Alberts et al. 472). I am proposing here an analogy between the invagination of the cellular membrane during endocytosis and the indentation of the textile surface of the bag where the cannonball presses down. Stein offers us additional information: the metaphor of the cannonball resting on a bag of cotton only depicts engulfing being if it is not “dry [and] resisting” and has qualities of “a lively dark wet thing” (“Making” 562). Furthermore, engulfing necessitates for the bag of cotton to be large in size and “not skimped in the cotton foundation” (Stein, “Making” 563). These qualities suggest a more plentiful, active and supple surface, which would enable one being to envelop and then engulf another.

Engulfing is a relation of ingestion. It draws on a basic interaction between an organism and its environment in which the organism consumes living entities or other materials from the surrounding world for its own sustenance and survival. Stein uses specifically words associated with eating, such as “swallowing” and “nibbling” to characterize ways of engulfing (“Making” 551). Such characterization of engulfing fits within a larger framework explored in the construction of the typology of personality in *The Making of Americans* in which “ways of eating” are indicative of character: “There are many ways of eating, for some eating is living, for some eating is dying for some thinking about ways of eating gives to them the feeling that they have it in them to be alive and to be going on living, to some to think about eating makes them know that death is always waiting that dying is in them” (Stein 120). Stein moves beyond how manners of eating and the affective responses brought on by them characterize personality and resorts to the language of food consumption to describe relationships

between people: “Julia Dehning, like all of her kind of people, needed everything, for anything could feed her. It was not strong meat that Hersland offered to her, but her palate was eager, this had the flavour of the dishes she longed to have eaten and to have inside her” (“Making” 22-23). In this example, the embodied experience of eating metaphorically shapes the relationship between Julia Dehning and Alfred Hersland. Two specific entailments of this metaphor stand out: a diffuse sense of a person’s identity is described as a flavour that is perceived by someone else and one’s personality assumes a kind of sustenance value for another person. Engulfing, while continuous with this use of eating as a metaphor for a relation between characters, takes on a different set of implications. Rather than offering only sustenance, “the feeling of potential engulfing [gives] one a complete sense of superior being” (Stein, “Making” 354). Some types of character, Stein asserts, have the need to engulf “every one near them,” while others must engulf or come to own “those they need for loving” (“Making” 576). And for the one engulfed there is a risk of being “watered so thin” that they no longer have the “strength enough to cling to any one as dirt to hold them” (Stein, “Making” 354). The engulfed person, in a sense, becomes lost inside the person who engulfs them.

Being As Big As All The World

There is an indistinction between David Hersland and the surrounding world. This is not an indistinction caused by a leaky boundary between oneself and the world so that one “flow[s] over everything to lose [oneself] in everything and not have individual

existing” (Stein, “Making” 420). Instead, this mode of relating to the world violates the premise that a system is somehow bounded, and through the enclosing quality of this boundary (which permits only specific kinds of interchange) rendered separate from the world. The character of David Hersland is described by the narrator of *The Making of Americans* as being “as big as all the world” (Stein 51). When he is walking with his children past “a shop [with] fruit or cakes or something that please[s] him” he, to their embarrassment, hands the fruit or cakes to them freely before paying for them:

The father of course always paid for them but there was something in the manner of him that gave one a kind of feeling that he was as big as all the world about him, one included the other in them, the world and him, the earth the sky the people around him the fruit the shops, it was all one and the same, all of it and him, and this kind of a feeling he always gave to them who saw him walking standing thinking talking, that the world was all him, there was no difference in it in him, and the fruit inside or outside him there were no separations of him or from him, and the whole world he lived in always lived inside him. (Stein, “Making” 51)

The indistinction between David Hersland and his environment becomes syntactically apparent in Stein’s use of pronouns in the quoted passage. It begins as I read, “one included the other in them,” and then spreads backwards and forwards, simultaneously, into the list of nouns that follows and through to the beginning of the passage. The syntax registers the action or process of inclusion: the inclusion that is described perceptibly occurs within the span of this clause, so that by the time the reader reaches the pronoun

“them,” the world and David Hersland are no longer distinguishable as individually bounded entities. The pronoun “them” also specifies that the mode of inclusion here is not one in which an entity comes to ingest or encompass within itself another entity, one within the other, but a form of inclusion which warrants a continuous and oscillating inversion of perspective so that one comes to locate the way that the two are mutually interpenetrating in that “the whole world [David Hersland] lived in always lived inside him” (Stein, “Making” 51). The shameful embarrassment of the children arises as they perceive, at the same time, their own distinction from the world, according to which eating involves internalizing an entity that is previously on the outside, and the dissolution of the boundaries between their father and the world, which renders “the fruit inside or outside him [as not separate] of him or from him” (Stein, “Making” 51). At the same time, they are already, along with the fruit, uncomfortably a part of the mutuality signaled by “them,” as the reader returns from “one included the other in them” to the beginning of the sentence, where the pronoun “them” signals either the father paying for his children (their consumption of fruit) or for the fruit that they are consuming.

Shrinking Away To Be Filled

Materials that constitute a particular character can fail to fill them completely, leaving empty areas within an enclosed whole. One character is plagued by persistent holes inside of her that fail to be filled despite her constant attempts to shuffle around the materials that make her up: “She was always busy inside in her filling up the hole in her

from the rest of her and so making another, for there was not enough inside her ever to entirely fill her” (Stein, “Making” 83). The spaces that remain unfilled, as well as the notion that a person is made up of a finite amount of substance, that can be moved around in a bounded space, evoke the sense of a living system as constituted of materials which together make up a volume of a bounded whole. This character does not resort to taking up materials from the outside to help fill her, because she is afraid that anything “touching her [or] coming close to her [...] should push an outside hole into her” (Stein, “Making” 83). An outside hole, unlike an inside hole, would be a threat to the boundary that distinguishes her from the surrounding world.

Other characters, faced with an insufficiency of material, seek to acquire something from the environment that can fill them up. The narrator in *The Making of American* explains that aging is often accompanied by a shrinking process which leaves behind unfilled internal spaces: “and then it comes to be when they are old and weakening it comes to be a shrinking away of themselves from the outside of them, they are old men then and they have not any success in them and it needs others then to make them full again inside them” (Stein, “Making” 117). In his later living David Hersland is no longer “as big as all the world” and feels a need for a woman, not as a “beautiful thing inside him to be in him as a tender feeling,” as his wife had been, “but a thing to be alive, domineering, diplomatic, moving, entering under his skin by feeling herself him managing him and important to him in her filling him where he was shrunk away from the outside of him” (Stein, “Making” 159).

Chapter Four: Poetics of Liveliness

One of the objectives of my project is a creation of a theoretical space in which the process of simultaneous interchange, akin to Stein's relation of talking and listening at once, can unfold between Stein poetics of liveliness and biological understandings of living organisms. The simultaneity of this interchange is dependent on a shift in focus from reading *The Making of Americans* in the context of theories of biological development available at the beginning of the twentieth century to using Stein's understandings about liveliness as a way to push off towards a biological understanding of living organisms as dynamic systems constituted in relation to their environments. In other words, I am unlatching Stein's theories of liveliness from the historical context in which they emerged and bringing them into relation with later developments in twentieth-century biology, in particular the ones that pay serious attention to the lively quality of organisms by offering satisfactory accounts of their capacity for change, as well as their robustness. This shift in the direction of my reading is also predicated on the sense that Stein was a practitioner of poetic science and that the discoveries she made about liveliness through her radical empiricist compositional methods have something of relevance to say about living organisms. In situating Stein in this way I am aligning myself with Steven Meyer's suggestion in *Irresistible Dictation* that Stein's "repeated invocation of *life* isn't merely rhetorical," but that she is deliberately creating a link between her conception of "living" and biology: "[Stein] demonstrated that to the extent that any utterance, and in particular any piece of writing, is experienced as *lively*, this autopoietic entity isn't just like a living organism. It is every bit as much a living

organism as a living organism is” (110, 209). In pursuing this parallel between the lively quality of Stein’s writing and living organisms, I hope to begin to articulate a poetics of liveliness which pervades Stein’s compositions.

One of the aspects of Stein’s poetics of liveliness is evident in her desire to depict the characters in *The Making of Americans* as living. This desire is complicated by the fact that according to precepts of radical empiricism these characters must always exist in relation to an observer, in the case of *The Making of Americans* the figure of the narrator, who is gradually coming to know “everything that ma[kes] them” (Stein, “Making” 85). This radical empiricist inclusion of the relation between the narrator and the subjects under her observation as constitutive of the knowledge that is acquired adds another temporal layer to the narrative of *The Making of Americans*. The living beings that Stein attempts to recreate compositionally are not the only entities that are continuously undergoing change. The practices of coming to know someone or something also possess their own lively dynamics: “Of course all the time things were happening that is in respect to my hearing and seeing and feeling. I found that as often as I thought and had every reason to be certain that I had included everything in my knowledge of any one something else would turn up that had to be included” (Stein, “The Gradual Making of *The Making of Americans*” 85). It is difficult to ascertain from Stein’s reflection on the process of composing *The Making of Americans* whether the new information that is continuously arising is a result of changes in the subject of observation, or whether the sense of new developments within their character is a parallax effect produced by the changes in the gradually developing knowledge of the observer. Both are likely occurring at once and in terms of radical empiricism cannot, and need not, be disentangled from

one another. Another complication in Stein's attempt to depict the characters in *The Making of Americans* as living arises as a result of a discontinuity between the gradual process of coming to know someone and the fact that once that knowledge is acquired, the gradual nature of its acquisition is replaced by a "complete conception" of that person:

When I was up against the difficulty of putting down the complete conception that I had of an individual, the complete rhythm of a personality that I had gradually acquired by listening seeing feeling and experience, I was faced by the trouble that I had acquired all this knowledge gradually but when I had it I had it completely at one time. [...] [A] great deal of *The Making of Americans* was a struggle to do this thing, to make a whole present of something that it had taken a great deal of time to find out, but it was a whole there then within me and as such it had to be said. (Stein, "The Gradual Making of *The Making of Americans* 91)

Stein wanted to avoid remembering as a way of accessing the knowledge she had gradually acquired, because she felt that writing which arose as a result of remembering was lifeless: "Any of you when you write you try to remember what you are about to write and you will see immediately how lifeless the writing becomes that is why expository writing is so dull because it is all remembered" (Stein, "What Are Masterpieces" 152). Instead of remembering, Stein "conceived at every moment the existence of some one, and [...] put down each moment that [she] had the existence of that one inside in [her] until [she] had completely emptied [herself]" ("Portraits and Repetition" 119). In

using this compositional method, Stein produced in “each sentence [...] just the difference in emphasis that inevitably exists in [each] successive moment” of existing of both the individual being depicted and of the knowledge possessed about them by the narrator. Each time Stein composed a statement about her subject, the living subject was already in the process of change, evoking, as a result, another attempt at composition, or, in Stein’s words, “a beginning again.”

In doing this Stein discovered a compositional method capable of depicting the incremental changes that constitute a living organism. Her method involved no repetition because, as she argued, “if anything is alive there is not such thing as repetition,” “a frog hopping [...] cannot ever hop exactly the same distance or the same way of hopping at every hop” (Stein, “Portraits and Repetition” 104, 100). Instead, each moment of living “ha[s] its own emphasis that is its own difference” (Stein, “Portraits and Repetition” 119). The two-dimensional planes of each incremental statement suddenly accrue to generate a three-dimensional shape. In this regard Stein’s compositional method is almost sculptural, and evokes a spatial quality similar to the sense of a volume present in her descriptions of bioactive substances. This sudden switch between two-dimensionality and volume brings to mind her work at Johns Hopkins, where Stein studied two-dimensional sections of the brain in order to construct a three-dimensional model of a particular region of the brain. This work would have involved looking at one thinly sliced microscopic section of the brain at a time and then moving through them in sequence while remaining highly attuned to the slight differences between each slide in order to comprehend the brain region under examination as a three-dimensional shape. In “Portraits and Repetition” Stein parallels her compositional practice in *The Making of Americans* and in

her early portraits to the cinema: “I was doing what the cinema was doing, I was making continuous succession of the statement of what that person was until I had not many things but one thing” (106). In articulating a compositional method capable of conveying the liveliness of organisms Stein on several occasions returns to the problematic of depicting the whole organism, not as “many things but [as] one thing” (“Portraits and Repetition” 106). In addition to using the variations in insistence in her compositions, she accomplishes this by enlarging her paragraphs in *The Making of Americans* “so as to include everything,” and, as a result, her sentences and her paragraphs begin to “do the same thing” (Stein, “The Gradual Making of *The Making of Americans*” 97). She associates this conflation between sentences and paragraphs in her writing with the arrival of the twentieth century: “and now in the beginning of the twentieth century a whole thing, being what was assembled from its parts was a whole thing and so it was a paragraph” (Stein, “The Gradual making of *The Making of Americans*”97). She conceives of this “whole thing” as “a space of time that is always filled always filled with moving” (Stein, “The Gradual Making of *The Making of the Americans*” 98).

Stein’s emphasis on the whole rather than only its component parts resembles the organicist project of trying to understand the developmental interactions that compose a whole organism, rather than only the functioning of the parts in their isolation, that is emerging in embryology at the opening of the twentieth century. Furthermore, Stein’s ability to depict, through the liveliness of her compositions with their incremental variations in insistence, a living organism that is continuously changing, evokes the sense that organic form emerges out of the bioactive dynamics of living matter. With the reemergence of the organismic principles within what Keller dubs the new

epistemological framework of late twentieth-century biology, new molecular genetic techniques are emerging, which have the capacity to convey the liveliness of an organism in a way that is strikingly akin to Stein's own compositional methods. The specific technique that I am referring to is known as a DNA microarray. While both genetic maps and DNA microarrays can, in a sense, be viewed as forms of genetic portraiture, they offer very different views of the organism. High-resolution genome mapping, such as the work of The Human Genome Project, offers a molecular view of the genome as a static nucleotide sequence (Griffiths et al. 269). In contrast, DNA microarrays convey the incremental shifts in expression of genes which are actually actively participating in composing the organism at a given time. Thus, importantly, DNA microarrays reveal that even the genetic configuration of the organism is not determined and static, but, instead, emerges in a profusion of continuously shifting bioactivity.

Here is a quick overview of how a DNA microarray is made. Samples of DNA are laid out on a piece of glass called a DNA chip: "Robotic machines with multiple printing tips resembling miniature fountain pen nibs deliver microscopic droplets of DNA solution to specific positions (addresses) on the chip" (Griffiths et al. 304). Once this step is complete, the chips are exposed to a sample consisting of the fluorescently labeled RNA extracted from the experimental tissue (Griffiths et al. 305). RNA, or ribonucleic acid, can be conceptualized as a photocopy of a specific gene encoded in the DNA. Therefore, the RNA that is present in the cell at a particular time is indicative of the genes that are being expressed at that time (Griffiths et al. 5). One experimental protocol is to extract RNA from a specific tissue at time A and label it with the red fluorescent probe. Then RNA is extracted from the same tissue at time B and labeled with a blue fluorescent

probe. The DNA chip is exposed to both of these RNA probes at the same time and the probes bind to the matching (homologous) DNA sequences on the chip. Once the chip is viewed by a laser microscope and a computer, some of the DNA spots on the chip will be labeled red, indicating that that particular gene was expressed only at time A. Other spots on the DNA chip will be labeled blue, indicating that that gene was expressed at time B. And the purple spots on the chip will indicate the genes that were expressed both at time A and at time B. Figure 1 is a painted representation of a DNA microarray. (The colors in the image do not correspond to the hypothetical color scheme I have outlined above.)

The pattern of coloured dots of a microarray, thus, corresponds to an incremental change in the pattern of gene expression as different genes become activated, and others are deactivated in the living organism. In a sense, DNA microarrays can be said to resemble the technology of cinema, that was innovative in Stein's day: the living image in both is composed of a series of slightly different static images. As is the case with Stein's compositional attempt to recreate the changes that constitute an organism, a sequence of microarray images shows that the body is continually changing structurally and functionally as different subsets of genes are expressed. In "Portraits and Repetition" Stein writes that if "a movement [is] lively enough to be a thing in itself moving, it does not have to move against anything to know that it is moving" (102). My decision to address this type of liveliness may seem perilous as I have, hitherto, limited my discussion to forms of liveliness that Stein associates with relations, and this one specifically defines itself against the necessity of relation. Yet, in this case I choose to share Stein's sense of inclusiveness in her own encounters with contradiction. In her attempt to further explain the nature of this form of liveliness Stein uses the coupling

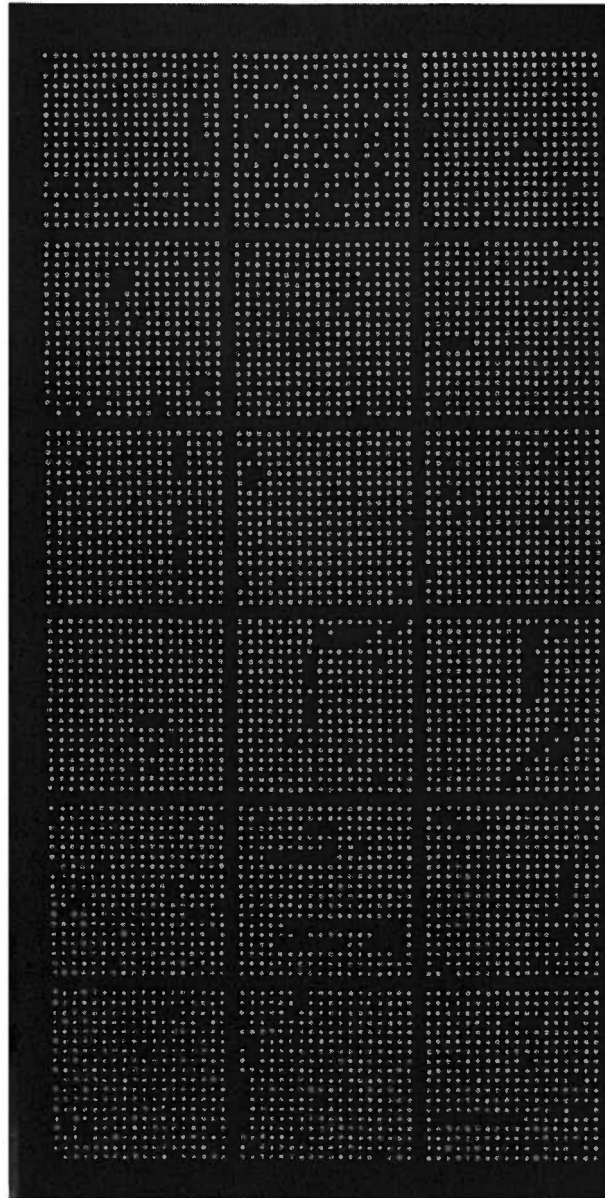


Figure 1: A Paintied Representation Of A DNA Microarray

between the movement of a motor inside a car and the movement of the car itself and she suggests that her “ultimate business as an artist [is] not with where the car goes as it goes but with the movement inside that is of the essence of its going” (“Portraits and Repetition” 117). Placed in relation to a DNA microarray, this metaphor has the potential to conceptually unlatch the collusion between genetics and preformationism, that has

persisted for much of the twentieth century. As it emphasizes the inward liveliness of an entity rather than its outward movement, while simultaneously refusing to decouple the two, it suggests that there is no static inward core of the organism, but that the genetic configuration of the organism too is characterized by continuous movement and change, even if genes do offer a degree of constraining robustness.

Even though the compositional techniques that Stein uses in *The Making of Americans* and DNA microarrays belong to quite different projects and eras of inquiry, they both clearly reveal a quality of liveliness characteristic of biological organisms. Furthermore, positioning them beside one another is generative of a sense of a striking formal relationship between them: observing the gradually shifting patterns of microarray dots and reading the incremental variations of Stein's compositions side by side produces a synergetic effect through which the dynamic of liveliness within each is rendered more apparent through its relationship with the other. In contextualizing Stein's compositional method in *The Making of Americans* in relation to the reemergence of organicist precepts in late twentieth-century biology I argue against Steven Meyer's view that "the perspective articulated in [Stein's] writing [prior] to the completion of *The Making of Americans* in 1911 was predominantly mechanistic or deterministic" ("Irresistible Dictation" 55). More specifically, Meyer's reading of Stein's technique of "repetition with its capacity for 'minutest variation'" as appropriate to what he suggests is the "mechanistic" project of *The Making of Americans* is in disagreement with my perception of this technique as integral to Stein's depiction of the epigenetic or organicist qualities of living organisms. In *The Making of Americans* Stein herself expresses anxiety about how

a project of collecting different types of something could easily turn into a collection of dead, rather than living organisms:

One of such of these kinds of them had a little boy and this one, the little son wanted to make a collection of Butterflies and beetles and it was all exciting to him and it was all arranged then and then the father said to the son you are certain this is not a cruel thing that you are wanting to be doing, killing things to make collections of them, and the son was very disturbed then and they talked about it together the two of them and more and more they talked about it then and then at last the boy was convinced it was a cruel thing and he said he would not do it and his father said the little boy was a noble boy to give up pleasure when it was a cruel one. The boy went to bed then and then the father when he got up in the early morning saw a wonderfully beautiful moth in the room and he caught him and he killed him and he pinned him and he woke up his son then and showed it to him and he said to him see what a good father I am to have caught and killed this one, the boy was all mixed up inside him and then he said he would go on with his collecting and that was all there was then of discussing and this is a little description of something that happened once and it is very interesting. (489-490)

However, the character types in Stein's typology of personality, like the organisms depicted in DNA microarrays, easily slip out of the clutches of static and mortifying categories, as they proceed to develop through lively patterns of change and movement.

Another connection between Stein's poetics of liveliness and biological organisms is evident in the embodied dynamics of interchange through which the characters in *The Making of Americans* come into relation with one another. In constructing the typology of relations I paid particular attention to the way bioactive substances, that according to Stein compose anyone's personality, are arranged to form a volume of heterogeneous areas enclosed by a membrane. The spatial quality of this arrangement corresponds to the image schematic structure of a body as a container. "An image schema is a dynamic, recurring pattern of organism-environment interactions, [which] reveal[s] itself in the contours of [the organism's] basic sensorymotor experience" (Johnson 136). According to Mark Johnson in *The Meaning of the Body*, such schemata arise "from the organic activities of embodied creatures in interaction with their changing environments," and they underlie the cognitive capacities for meaning construction (11). In *The Making of Americans* Stein explains the nature of different relationships between the characters by metaphorically elaborating bodily patterns of interaction between an organism and its environment. In each case the path schema traces the trajectory of entities that are either entering into the contained space of the body or exiting out of it. For instance, Mrs. Hersland's relationship with her children is structured around the experience of childbearing, in which one body acts as a receptacle for another. The relation of engulfing is based on ingestion of food from the environment into the interior of the body, and in the relationship between Julia Dehning and Alfred Hersland Alfred becomes the kind of dish that she longs to eat and have inside her (Stein, "Making" 22-23). But, perhaps the most interesting relationship based on the image schematic structure of a body as a container, with substances flowing into or out of it,

involves the embodied process through which the narrator comes to know different types of personality:

Each one then is sometime a whole one in me, I know it and I tell it, I am filled up then with that whole one inside me and I tell it and then it settles down inside me to always hearing it repeating in such a one, filling in and changing and being a completer and completer history of that one and always then it is quietly there in me and I like it. (Stein, "Making" 323)

For the narrator to get to know someone, that person has to gradually fill the interior of the narrator's body until the whole of them is gathered and contained there. Then the narrator has possession of their whole being (Stein, "Making" 313). Strange forms of mixing occur in the interior of the narrator's body: "I am remembering that very often they are having being in them and I am supplying in them in my feeling what they certainly have not been having in them" (Stein, "Making" 610). Aspects of the narrator's feeling enter into the process and mix with the characteristics of the person the narrator is attempting to come to know in a manner that evokes the continuity between the knower and the known within the radical empiricist epistemological system. However, the body retains its finite structure and if the interior becomes too filled, the being contained in it begins to "pour out" (Stein, "Making" 326). This forceful effusion is also expressed as telling and, by extension, writing: "I am more or less filled up then with that one, sometimes I am filled up so full with that one that I must tell it then to every one, sometimes I am filled up so full with that one that I must tell it then to every one,

sometimes I am filled up so full with that one that I must then certainly tell it to that one” (Stein, “Making” 325). But, on other occasions this flow is not nearly so forthcoming:

I am not content, I have not had it come out without pressing the description of Mr. Arragon the musician. It should come out of me without pressing without any straining in me to be pressing, I can be doing thinking to be helping, I should not be doing any pressing and any straining, I have been doing a little it has not come to be a complete thing simply coming, it is to be then to rebegin to come out from me. Always each thing must come out completely from me leaving me inside me just then gently empty, so pleasantly and weakly gently empty, that is a happy way to have it come out of me each one that is making itself in me, that is the only way it can come to be content for me in me, it can come out fairly quickly or very slowly with a burst or gently, any way it feels a need of coming out of me, but being out of me I must be very pleasantly most gently, often weakly empty, this one then Mr. Arragon is not so happily then out of me, he is then still there inside me, I will let him come again when he is more completely ready, of the kind he is in living that has come out very pleasantly from inside me, his own being in me has not come out to be out of me so satisfactorily. Sometime then he may be better done, to begin again then the being and the living Alfred Hersland had in him. (Stein, “Making” 586)

There is a strong sense of difficulty and almost constipated blockage in this description of the narrator’s attempt to make Mr. Arragon the musician come out of her. Words pressing

and straining suggest a muscular effort in an attempt to exert force against the boundaries or the possible blocked orifices of the container. The effort is unsuccessful as the narrator disappointingly proclaims that “Mr. Arragon is not so happily then out of [her]” in a voice that is reminiscent in tone of other moments of difficulty and despair that the narrator encounters in the novel (Stein, “Making” 586). It appears that Mr. Arragon is not quite “completely ready” and more time is needed for some developmental process to be completed before he can emerge without strain. There is also a strong sense of the body not only as an interior contained space, but as a felt space; the pleasant weak and gentle emptiness that the narrator desires, like the fullness, is a felt bodily sensation. Along with these felt sensations of the interior state, the flux in and out of the bodily container is also accompanied by differentiated qualities of feeling. And these delicate gradations of feeling evoke a return to one of the defining questions for Stein’s project of *The Making of Americans* of “how anything comes into that one and comes out of that one” in their winning, loving, fighting, feeling, telling, thinking, writing, a question that has also guided my own project of constructing this typology of lively relations.

There is something similar about the spatial and bioactive properties of substances out of which personality arises in *The Making of Americans* and Stein’s feelings about the particulate qualities of words. In an interview with Robert Bartlett Haas published in *A Primer for the Gradual Understanding of Gertrude Stein*, Stein describes her concern with the material qualities of words: “I took individual words and thought about them until I got their weight and volume complete and put them next to another word” (18). Meyer adds a biological dimension to Stein’s conception of the spatial quality of words when he suggests that Stein “conceived of words, like cells, as existing in three-

dimensional space rather than two-dimensionally on the page or the microscope slide. Stein tells an anecdote about how reading while getting her haircut offers her a mode of paying attention that may reveal such qualities of words: “I found that any kind of book if you read with glasses on and somebody is cutting your hair so you cannot keep the glasses on and use your glasses as a magnifying glass and so read word by word reading word by word makes the writing that is not anything be something” (Stein, “Everybody’s Autobiography”). The idea of paying attention to language “word by word” or “one at a time” echoes Fred Wah’s interest in molecular ways of paying attention in “Loose Change (A Molecular Poetics),” an essay collected in his book of critical writings *Faking It*. In his articulation of molecular poetics, Wah also speaks about language in specifically biological terms, advocating for a practice of “histology” or “the study of (word) cells” (238). In a demonstration of this histological approach he performs a reading of “Roast potatoes for,” a sentence from Stein’s *Tender Buttons*: “Stein inserts the preposition ‘for’ into a syntactic and poetic site that suddenly multiplies its productive possibilities in at least five ways” (Wah 243). In light of the relationship between words and cells, suggested in both Wah and Meyer’s critical work, this maximization in productive possibilities of words can be read as an increase of the bioreactive properties of their surfaces, and hence their capacity to form lively relations with other words. It is specifically the paratactic relationships between words, or the way they interact with each other as their skins rub against one another, that is of interest to Wah, “that loose change rattling around in the gap” (251). In “Poetry and Grammar” Stein suggests that the liveliness of words is proportional to their capacity to be mistaken, with “verbs and adverbs and articles and conjunctions and prepositions [being] lively because they” can

be mistaken, and “ nouns and adjectives” being relatively inert because they “never can make mistakes can never be mistaken” (127-128). The capacity of words to make mistakes arises out of their ability to change with the liveliest of words being the ones that can “change to look like themselves or to look like something else” (Stein, “Poetry and Grammar” 127). Each additional form that the words can assume adds to their relational possibilities. As the close readings I have performed in the typology of relations demonstrate, Stein, in *The Making of Americans*, uses this ability of words, particularly prepositions and pronouns, to change, and through this form multifaceted relations, in order to express the confusion, intermingling or “mixing” between different characters as they come into relation with one another. Perhaps it is this epigenetic capacity for change that makes Stein’s compositions, as Meyer suggests, not “just like a living organism [but] every bit as much a living organism as a living organism is” (“Irresistible Dictation” 209).

Chapter Five: Epilogue

In the writing project of *The Making of Americans*, Stein persistently asks questions that seek as their answers particular, and often also particulate qualities imbued with the activity of organic matter. These qualities are evident in the specificity of her descriptions of various substances that compose anyone's personality, so that in one account attacking being is simultaneously slimy and gelatinous, but also white, opaquy, clear and heated (Stein, "Making" 349). These qualities are additive and in their interactions, and, importantly, frequent contradictions, as is the case with something that is simultaneously clear and opaquy, yield a type that she is attempting to articulate and classify. Perhaps this search for particular qualities is most explicitly manifested in her inquiries into "how" a specific process, such as the flow of substances between an organism and its environment, is unfolding. A finite array of possible manners of action appears in response, in which each adverbial description of action is gradated and free to combine with others. In the introduction to a Silvan Tomkins reader *Shame and Its Sisters* (1995), literary critics Eve Kosofsky Sedgwick and Adam Frank argue that biologically informed modes of thinking offer access to such sets of "*finitely many* ($n > 2$)" differentiated qualities:

Somehow it's hard to hold on to the concept of eight or thirteen (and yet not infinite) different kinds of – of anything important – without having a biological model somewhere in the vicinity. This adhesion may well be a historical development, as though some momentum of modernity (call it monotheism? call

it the Reformation? call it capitalist rationalization?) has so evacuated the conceptual space between two and infinity that it may require the inertial friction of a biologism to even suggest the possibility of reinhabiting that space. (15)

I would argue that the tendencies of thought that Stein carries through from her training in medicine to the project of *The Making of Americans* offer her the access to this “analogically structured thought realm of *finitely many* ($n > 2$) *values*,” not only in terms of her interest in specifically differentiated sets of qualities, but, more broadly, in terms of the primary goal of the project of classifying personalities into types (Sedgwick and Frank 17). My own project of constructing a typology of relations, based on the increasingly lively and relational perspective that Stein adopts in the course of *The Making of Americans*, co-inhabits this same biologically informed thought realm.

Yet, according to Sedgwick and Frank, the access to this conceptual space may be threatened by a reflexive and routine antibiologism, which has emerged as “the unshifting central tenet of” critical theory (15). This antibiologist stance manifests itself in a coagulation of all biologically-tinged modes of thought into one undifferentiated mass, which then must be guarded against, or, better yet, taken on directly in the interests of preserving all theoretical endeavors that seemingly depend on a “hypervigilant antiessentialism” for their continued project of fighting for political change (Sedgwick and Frank 17). One such project is an essay by Maria Farland, published in *American Literature* in March 2004, titled “Gertrude Stein’s Brain Work.” Along parts of its critical trajectory Farland’s essay parallels my project in that she attempts to address the influence of Stein’s training in medicine for her subsequent writing of *The Making of*

Americans. Farland argues that Stein bases her typology in *The Making of Americans* on “the variability hypothesis” proposed by a Johns Hopkins biologist W. K. Brooks, who suggested that females are more prone to adhering to specific types and routines, while males are more variable and capable of innovation (118). The main point of Farland’s argument is that Stein, while allowing some aspects of the “variability hypothesis” to influence the classification system in the typology, ultimately overcomes the sexist constraints of this theory by refuting the idea that type distinctions have an anatomical basis:

Stein’s break with the conventional fictional frame [...] takes shape around her break with the biologism of the variability hypothesis. That break with biology, I have argued here, is crucial to Stein’s breakthrough into modernism. [...] In this way, she can write a narrative whose elaboration of types is deeply indebted to contemporary conceptions of sexual difference but whose representational strategies move to detach those differences from the body and the brain. (141)

While Farland’s argument operates along different axes of categorization than mine, we could enter into some productive agreements and disagreements about our mutual interests in how Stein negotiates the constraints of type in light of variations from type that come under her observation. But that kind of interchange is not my purpose in referencing “Gertrude Stein’s Brainwork” here; rather, I would like to address the sleight of hand with which Farland moves from a justifiable attack on the sexism evident in a specific biological theory to what she calls the “transcendence of biology” (136).

Farland suggests that this project of bodily and biological transcendence is accomplished by Stein's development of an "abstract" and "disembodied" style in the voice of the narrator in *The Making of Americans*, yet, as I have argued, all basic processes of coming to know and tell that the narrator engages in are based on the embodied experience of a flow of entities (which have suspiciously physical characteristics, such as their ability to exert pressure) in and out of the contained space of the body (136). Farland's narration of Stein's early biography as a trading in of laboratory "brain work," involving her study of actual brain anatomy at Johns Hopkins, for the "brain work" of a literary vocation, acts as a subtext for Farland's reading of *The Making of Americans* as an escape from anatomy (143). In my view, this reading relies not on a clear identification of such an escape in Stein's actual text, but on a routine "antibiologism," which is presented as the only possible antidote for the sexism of, in this case, the variability hypothesis. But, it seems that the slot in which the variability hypothesis resides in "Gertrude Stein's Brain Work" could easily be evacuated of its present culprit and filled with any other biological or theoretical project which "threatens" to seriously engage material processes that constitute living organisms.

The sleight of hand that moves Farland's argument from a critique of "the variability hypothesis" to the "transcendence of biology" homogenizes biological thought and reduces its potential to enter into literary criticism as a differentiated and contested polymorphic pursuit. Biological thinking enters Stein's own work in *The Making of Americans* in a very different way, one that can, perhaps, demonstrate how the presence of biology within a literary project can be "a delicate and varied something" (Stein, "Poetry and Grammar" 127). Stein's resistance to generalizations, that would smooth out

the contradictions and the complexities of her perceptions, testifies, not to her interest in homogenizing conceptual frameworks, but to an interest in a proliferation of theories, biological and literary, and to her willingness to change her current theoretical framework in light of new evidence, often amending it through addition. (It is no accident that Stein offers us so many different definitions of liveliness both in the text of *The Making of Americans* and in her Lectures.) Perhaps most importantly, Stein refuses to negotiate a mutuality between biological and literary modes of inquiry around the split between the mind and the body. So that the inertness that Farland locates in the anatomy of a biological body cannot so easily be found among the engulfing, filling, surface denting, listening, penetrating, talking, stimulating, moving, developing, shrinking substances that compose anyone's personality, not even really in the constraining robustness of bottom nature, which is always entering into reactive mixing relations with other natures.

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