

COMPLEMENTARY FEMININE AND MASCULINE CHARACTERISTICS IN
THE WRITINGS OF ST. EDITH STEIN AND ST. POPE JOHN PAUL II
CORROBORATED BY NEUROPSYCHOLOGY

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Ad Mariam Sedes Sapientiam.

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List of Topics

List of Topics.....	4
Tables.....	5
Abstract	6
Introduction: The Contemporary Relativization of Gender	7
Edith Stein on Gender Complementarity.....	9
Edith Stein on the Genius of Woman.....	10
Edith Stein on the Genius of Man.....	13
John Paul II on Gender Complementarity	17
John Paul II on the Genius of Woman.....	21
John Paul II on the Genius of Man in St. Joseph.....	24
The Neuropsychology of Gender Characteristics	28
Neuropsychological Characteristics of Women.....	31
Neuropsychological Characteristics of Men.....	36
Neuropsychology that Aids Complementarity.....	37
How Marriage Best Expresses Gender Complementarity.....	40
Conclusion.....	44
Table 1.....	46
Table 2.....	47
Table 3.....	48
References.....	49

Tables

1. Stein (1932): Gender Characteristics.....	46
2. John Paul II (1988): Gender Characteristics.....	47
3. Vitz (2013): Proposed Male and Female Body-Based Strengths and Weaknesses.	48

Abstract

COMPLEMENTARY FEMININE AND MASCULINE CHARACTERISTICS IN
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The terms 'genius of women and man' describe the wonder of God's creation in an integrated anthropology. This research seeks first to show how the earlier writings of Edith Stein (St. Benedicta of the Cross) and her understanding of woman and man influence the later writings of Karol Wojtyla (St. John Paul II). As there is a unity of truth, these characteristics have a material basis in contemporary neuropsychological gender studies, especially when seen in the complementarity between the sexes demonstrated in marriage. While there are no simple explanations for phenomena as complex as sex differences and similarities, the latest studies in brain structure, discoveries in gene, hormone, and environment interaction corroborate the characteristics of the feminine and masculine genius. This research, in turn, challenges the relativized contemporary thinking of gender as a mere social construct.

Keywords: Edith Stein, St. John Paul II, genius of woman, genius of man, sexual complementarity, Oxytocin, Testosterone

Introduction: The Contemporary Relativization of Gender

In contemporary cultural debates, gender is a deeply polarizing topic and the 'fault line' between opposing forces. This controversy incorporates the philosophical debate about sexual and personal identity. It is a socio-historical debate about the evolution of terminology based on what many thinkers progressively consider to be sexually changing times. This current social constructionist perspective finds its origins in the voluntarism of Scotus and the nominalism of Ockham that leads to the Reformation (Scruton, 1994). It rejects traditional views of gender and human sexuality in favor of an understanding of the person based on functional post-modern norms of equality that originate in Kant's formulation of personal autonomy, Nietzsche's will to power and Sartre's secular de-theologization of the human spirit (Scruton, 1994). As a strong proponent of this trend in defining sexuality as a social construct Tiefer (2000) argues:

sexuality as a universal human phenomenon or natural force in favor of the view that no behavior or identity is intrinsically sexual, and that any aspect of social life or identity can be sexualized (or desexualized) through definition and regulation. (pp. 80-81)

She (2000) rejects what she terms a 'sexological model' of gender based on biological consideration which establishes human sexuality "in terms of normality and abnormality...as a bodily based phenomenon....best understood in terms of acts, experiences, and identities based on physicality" (p. 83). At the heart of Tiefer's constructionist theory (2000) is a deconstruction of human sexuality that divorces it from any particular norm, especially the biological. Once any biological basis for a philosophical and theological anthropology is lost, there is little to prevent social constructs from distorting or refashioning the understanding of man and woman, masculinity and femininity to fit whatever philosophical agenda may in vogue as the basis for

defining new minority entitlements. Tiefer's philosophical root is relativism. Any human anthropology that draws upon facts that admit of universals is considered hostile to the constructionist approach (Verschaetse, 2013).

The socio-cultural movements of social constructivism in Tiefer and others have come about mostly through modern feminist ideologies. In seeking to free women from what is considered a biologically oppressive, patriarchal model of gender roles, many feminine thinkers have sought to cast off traditional views of what it means to be a man or woman and assume roles that cross gender boundaries (Verschaetse, 2013). While it is certainly necessary that we cast off the manichaeism underlying misogynous and androgynous behavior mindsets, or practices as a society (Scruton, 1994), the "no difference" ideology that has come in the wake of modern feminism is leaving men and women alike without a firm grasp of what it means to cultivate the virtues of masculinity and femininity (Verschaetse, 2013). A necessary step in this "no difference" development has been to divorce our understanding of masculinity and femininity from any types of absolutes as well as the biological basis of natural law itself. This divorce then allows for the deconstructionism of man and woman, male and female. In his book, *The Flight from Woman*, Karl Stern (1985) warns of this precise problem:

What began in feminism as a movement of liberation is bound to end in a slavery worse than the first...That secret freedom which lies at the depth of a man's or woman's personality would be conjured away, and would be replaced by a vastness of social entities, faceless and manageable...In all this, behind an apparent process of unfettering, is hidden a preparation for potential enslavement. (pp. 15-16).

The resulting amorphous, ever-changing concepts of man and woman simply float in the public consciousness as specters without real life or form (Verschaetse, 2013). Yet still men and

women alike who are thrust into their formless grasp are left floundering to grab hold of a line that will root them in their true identity and allow them to explore and discover their masculinity and femininity (Verschaetse, 2013). Thinkers like St. Benedicta of the Cross (Edith Stein) and St. John Paul II (Karol Wojtyla) have sought to establish a basis of masculinity and femininity in an integrated anthropology of sexual complementarity based on theological and anthropological principles that is both constitutive of human being but also can be corroborated by advances in modern neuropsychology.

Edith Stein on Gender Complementarity

True to her rich phenomenological roots which had been augmented by her serious reading of St. Thomas Aquinas, Stein wishes to describe the characteristics that best define woman and man both in the unity of their lived (psyche) and physical body (Wilhelmsson, 2012). She refines this unity in her radio addresses (1931-33) in the context of the attributes of man and woman given how she sees the human being developed in a complementary twofold species:

“I am convinced that the species humanity embraces the double species of man and woman; that the essence of the complete human being is characterized by this duality; and that the entire structure of the essence demonstrates the specific character. There is a difference, not only in body structure and in particular physiological functions, but also in the entire corporeal life. The relationship between soul and body is different in man and woman; the relationship of the soul to body differs in their psychic life as well as that of the spiritual faculties to each other”. (Stein, 1932/1996 p. 187)

Stein uses the distinction between the physical body and the living (‘psychic’) body found in her dissertation on empathy (Stein, 1917/1989). She sees the human physical body presented in two

complementary forms: male and female. This distinction constitutes her understanding of the biological difference between the sexes. In terms of the living ('psyche') body, she sees the human species in a twofold form as masculine and feminine. Women tend to have a disposition to pay attention to the whole person in their environments. Men tend to have a disposition to be detached and focus on what they create in their projects. Stein sees these qualities as characteristics that generally define but do not determine gender (Allen, 2009).

Edith Stein on the Genius of Woman

Much of Edith Stein's theory of the genius of woman comes from her experience in teaching women at St. Magdalen College for Women in Speyer (1922-31). It was not until she left the school and began her travelling lecture circuit in Germany, Belgium and western France that she was able to both synthesize from her teaching and elaborate on her understanding of the distinctive feminine characteristics of woman (Calcagno, 2007). Of these general feminine characteristics, Stein (1932/1996) writes,

“The woman is oriented toward the living/the personal and toward the whole. To cherish, guard, protect, nourish and advance growth is her natural maternal yearning.... The living and personal to which her care extends is a concrete whole and is protected and encouraged as a totality”. (p.45)

Stein sees the primary prominence of a woman's genius abiding in the attributes of a maternal orientation supported by a characteristic emphasis on the emotional life. These act together with verbal ability to strength in her personal life relating to others. Stein also notes emotionality as a distinctly female characteristic. “Emotions are the center of woman's soul: holding, protecting, and preserving, nurturing, and encouraging growth: those are her natural, genuinely maternal aspirations” (Stein, 1932/1996 pp. 95-96).

To Stein, the genius of woman is her maternal orientation that undergirds her practical knowledge derived from the interplay of intuition, emotion, experience, culture and consciousness (Wilhelmsson, 2012). It reflects on the acts of women both as she is constituted ('nature') as well as woman who expresses herself in and is influenced by the world ('nurture') (Costa, 2014). Stein in her addresses on woman goes on to express a spiritual component to her feminine anthropology by acknowledging the presence of a human soul that is unique, irreplaceable and an expression of the Divine (Costa, 2014 p.30). From this body-soul unity comes the genius of woman's naturally inclined constitutive positive attributes that are "distinctive to her embodied self: expansiveness in her concern, quiet in her appreciation, empty of self, warm in her interpersonal intimacy and clear in communicating what she thinks, feels and believes" (Stein, 1932/1996 p. 143). This remark shows Stein's underlying understanding of how virtue (e.g. the stable disposition to do the good) shapes distinctive human qualities for the fulfillment and flourishing of the person. Stein also sees one of woman's greatest qualities as the deepest yearning of her heart, "to give herself lovingly, to belong to another, and to possess this *other being completely*" (Stein, 1932/1996 p.53). A woman's characteristic outlook reveals in this longing for fulfillment in another, which is personal in its relationality and tends toward the all-embracing in its receptivity. It appears as specifically feminine and is fulfilled in her vocational expression as spouse and mother.

While her professors and friends often expressed the contemporary culture's sense of a woman's inferiority to a man (Wilhelmsson, 2012), this bias was markedly absent in Stein's writings and broadcasts. She sees established in woman's unique dignity an integrated combination of intellect and emotion, relationality, potential maternity and empathy that corresponds in complementary ways to a man's strengths in functional abstractive intelligence,

planning, protecting, providing and potential paternity (Costa, 2014). From her experience as a teacher of women in Speyer, the distinctive feminine attributes she knew to be typically present in her students needed guidance and formation to fully develop their intellectual and emotional qualities. This was not only a functional analysis based on an understanding of the formation of developing women whose attributes she knew. The formation she offered was also an integration of attributes with infused grace. This spiritual dimension would take the good found in human nature and elevate it to a transcendent flourishing which is the purpose of humanity. Stein presents such ideas in her 1932 radio addresses. They are examples of an integrated feminism based on a rich anthropology that incorporates the psychological, biological, individual, personal, and sensitive characteristics as the gifts and virtues distinctive to the feminine genius. She sees all of these as needing educational and spiritual formation so as to flourish.

Keen in her understanding of distinctive feminine characteristics gone awry, Stein also critiques the tendencies in woman that threaten her genius (Allen, 2009). This is because she recognizes that vice diminishes virtue. She frames the feminine psyche in terms of positive and negative dimensions of a woman's essential characteristics. Referring to this approach as a 'Differential Psychology', she articulates the positive value that preserves and manifests female genius in contrast to its negative depreciation (Stein, 1932/1996, p.88). A woman's positive tendency toward complete union contrasts with the negative urge to lose herself in another human being by seeking to live vicariously, often too much through others (Allen, 2009). This negative tendency surrenders the intrinsic dignity of the unique individual genius for the genius of another thus abandoning the importance of the true complementarity which Stein sees as the basis for true human flourishing (Allen, 2009). Woman's characteristically wholesome relational

dedication to help others can fall prey to her excessive curiosity about them. Stein sees this negative tendency leading to gossip and personal criticism that diminishes and destroys the individual genius of others (Allen, 2009). Her natural orientation toward the whole person can also become displaced by too much emphasis on her family, profession or extrinsic concerns (Allen, 2009). These kinds of excessive external concerns, something Stein criticizes as characteristic of men, can cause a woman to lose a sense of her own intrinsic self-worth. Her special capacity for empathy can fall prey to self-pride which shows itself as an inability to take criticism, seeing it rather as a personal attack (Allen, 2009). This 'Differential Psychology' is Stein's feminine pedagogy for the contrasting the true versus the false feminine with formation of positive characteristics as the basis of feminine virtue.

Drawing on the language of Jung, Stein faithfully concludes that the ultimate archetype of humanity's genius came true in the human Person of Christ while the paradigm of the fullest expression of the genius of womanhood finds its form of Mary, the new Eve (Stein, 1932/1996, p. 11). Like the women in the Old and New Testament, woman's ability to bring forth offspring to fulfill God's command of being 'fruitful and multiplying' finds its truest fulfillment in accepting Gabriel's message at the Annunciation. Stein sees this quality as the epitome of the genius of woman in how Mary by her nature in faith is able to give herself so completely to a maternal vocation to bring forth new life, Christ Jesus her Son for her fulfillment as a woman, spouse, disciple, community-member for humanity's redemption.

Edith Stein on the Genius of Man

While it is clear that her focus is on woman, Stein never loses sight of the role the masculine plays in complementing the female genius (Costa, 2014). Stein (1996/1932) alludes to this in her understanding of the equality of the sexes:

The fact that all powers which the husband possesses are present in a feminine nature as well, even though they may generally appear in different degrees and relationships, is an indication they should be employed in corresponding activity.” (p.80)

Throughout her discourses on woman, Stein punctuates her thought with references to the essential characteristics of men in order to better appreciate their complementarity with the feminine. Prominent among these masculine characteristics is the ability to focus almost exclusively on the work at hand or task to be done with a sense of accomplishing it in an excellent way. “The masculine species strives to enhance individual abilities in order that they may attain their highest achievements” (Stein, 1932/1996, p. 187-188). As one who has a general characteristic of being able to focus intently on his work, man is “consumed by his enterprise [and] expects others will be interested and helpful” (Stein, 1932/1996, p. 82) because of the attractive power of ideas and plans to draw like-minded men. This is Stein’s way of noting that whereas women are more interested in being drawn to the relations with others, men prefer their ideas, plans and work as the focus of their relationships (Allen, 2009). Stein observes that there is a limitation to this strength, “generally, it is difficult for men to become involved in other beings and their concerns. They focus on work and do not much relate to others outside of their work” (Stein, 1932/1996, p.46). This leads her to surmise that men have a diminished capacity of empathy when compared to a woman.

For Stein, the masculine characteristics lead to “vocations that usually require bodily strength, the ability for predominately abstract thought and independent creativity (Stein, 1932/1996, p. 82). As an example, she cites

the difficult physical labor required for industry, trade and agriculture, the abstract thought required in technological fields such as mathematics, the

theoretical physics,...as well as “in the precision of a mechanical nature and in certain branches of art, administrative work of a mechanical nature. (p. 82)

This is not to say that particular women cannot excel in these fields. Rather what Stein observes from her perspective of teaching women is that, in terms of a general gender proclivity, the masculine excels as a majority in these fields (Allen, 2009). Man’s essential desires reveal themselves in action, work and objective achievement. (Stein, 1932/1996, p.94). Whereas “the feminine species expresses a unity and a wholeness of the total psychosomatic personality and a harmonious development of faculties, the masculine species strives to individual abilities in order that they may attain their highest achievements” (Stein, 1932/1996, pp187-188). Stein sees in man’s striving of individual abilities in pursuit of the highest achievement the need for the complementary feminine characteristics that provide a base of relational unity and a harmonious development of faculties. Stein sees this the exchange of characteristic gifts between men and women as the true basis for the flourishing as human beings (Allen, 2009).

Stein observes from her experience that men have a typical kind of disassociation with their own bodies when she writes “for a man’s body has more pronouncedly the character of an instrument which serves them in their work and which is accompanied by a certain detachment” (Stein, 1932/1996, p.95). She sees this tendency as freeing up man to engage fully in his work of self-donation. This contrasts to the woman’s more integrated sense of her body which not only reveals itself in a woman’s concern for her appearance, but also prepares her for maternity. Stein notes that a woman whose task it is of assimilating in herself a living being which is evolving and growing, of containing and nourishing the child from herself has a much better unity between the physical body with the ‘psychic’ body (Stein, 1932/1996). Seen together, Stein’s complementarity of the bodies of both man and woman again becomes apparent. Man is free to

use his body in doing his work, to specialize in its doing for the sake of doing it excellently. The fruit of this labor is the self-gift he can share as woman's helper, guide and protector. Woman needs the fruit of this labor if she is to sustain the children she brings forth through the product of her self-giving companionship to the man.

Just as in her understanding of distinctive feminine characteristics gone awry, Stein frames the masculine psyche in terms of positive and negative personality characteristics. She articulates the positive value in contrast to its negative as her continued application of her 'Differential Psychology' to man (Stein, 1932/1996, p.88). A man's positive tendency toward focused specialty and excellence in his work, she contrasts with the negative tendency toward self-absorption and overly pre-occupation that turns away from relating and sharing with others (Allen, 2009). This negative tendency for the solipsistic preoccupation that can arrest development and erode charity diminishes man's intrinsic dignity meant for the sharing and building up of the family and community which Stein sees as the basis for true human flourishing (Allen, 2009). Man's vocations that usually require bodily strength, the ability for predominately abstract thought and independent creativity in negative ways can lead to domination through abuse of physical strength. His characteristic ability and use of abstract thought can fall prey to control for selfish purposes. His natural orientation toward providing can also become exaggerated as self-preoccupied hoarding by too much emphasis on having enough of everything to rise above survival and maintain material flourishing (Allen, 2009).

Something Stein criticizes as another negative characteristic of men is an excessive attention to external concerns. When this occurs in a relationship with a woman, wife or even *friend*, it can diminish a relationship to the point of self-isolation. When a woman depends on the affirmation she receives from her husband, this self-preoccupation can cause her to lose a

sense of her own intrinsic self-worth. His special capacity for function and achievement can fall prey to self-pride which shows itself as an inability to care for others even if they be wife and children (Allen, 2009). These negative tendencies, which are signs of vice, erode man's individual genius as well as the dignity and genius of others (Allen, 2009). This 'Differential Psychology' is Stein's masculine pedagogy. She contrasts the true versus the false masculine with formation of positive characteristics as the basis of masculine virtue that leads to true *human flourishing*.

John Paul II on the Gender Complementarity

On 129 occasions between 1979 and 1984, Pope John Paul II (2006) shared his reflections on sexuality, marriage, family life, and vocation with his Wednesday audiences at the Vatican. Each talk was unique but flowed in a unitive way expanding the meaning of the Theology of the Body. Using the Bible as his starting point, John Paul II delved into such questions as why humans were created male and female, why it matters which gender we are, and why the two are meant to be viewed in a complementary way needing each other to manifest the fullness of humanity (Ross, 2007). Whenever he used the terms 'feminine' and 'masculine' in his talks, he uses them to signify man and woman in their concrete and visible sexual characteristics (Allen, 2009). He pondered the purpose of marriage and asked what the union between a man and a woman says about God's plan for human lives. It is a key location to explore his understanding of complementarity between the masculine and feminine.

In man and woman there is both a unity and duality. Pope John Paul II (2006) says, "Their [man and woman's] unity denotes above all the identity of human nature; duality, on the other hand, shows what, on the basis of this identity, constitutes the masculinity and femininity of

created man” (p. 161). In this communion of persons, man and woman are called to image God and participate in his communion. John Paul II goes on to say:

Man became the image of God not only through his own humanity, but also through the communion of persons, which man and woman form from the very beginning. The function of the image is that of mirroring the one who is the model, of reproducing its own prototype. Man becomes an image of God not so much in the moment of solitude as in the moment of communion (p. 163).

The “prototype” described here is God Himself. In the *complementary communion of persons*, man and woman bear the image of God’s own Trinitarian communion of persons. Although sexual complementarity is certainly implicated in this unity, masculinity and femininity transcend sexual complementarity.

John Paul II saw the differences between men’s and women’s bodies not as accidental, nor different merely for the sake of reproduction. Human bodies, by their design and structure, reveal God’s nuptial intention for human beings. To be male or to be female is to be oriented to the other. This is the basis for their complementarity (see Table 2). This orientation has a purpose, mainly in the building up of the first community of love, the family, for the continuation of the species. It also has a deeper symbolic representation of the transcendent revelation of God’s unity with His spouse the Church.

For John Paul II, maleness and femaleness constitute “essential” dimensions of the person that are not superficial attributes that can be changed by a surgical operation or injections of hormones. To be a woman is to be fundamentally “receptive” and open to the other. To be a man is to use intrinsic strengths of mind and body to work, take risks, provide and protect. John Paul II saw that each sex had something positive and constructive to offer to the other that the other

could become more for having received the gift of the other. There is what he called a "special genius" in womanhood that is oriented toward relationship and nurturing. Although he does not speak implicitly of a "special genius" in manhood, his meditations on St. Joseph show his thinking on manhood oriented toward excellence in strength, work, protecting, taking risks and travelling intrepidly, characteristics of the masculine especially as they relate in a complementary way in the life of the Holy Family.

John Paul II's General Audience of October 31, 1984 (2006) points to a profound complementarity between the sexes regarding the distinctive kinds of responses each sex makes to coping with continence. John Paul II's way of defining continence means "the spiritual effort aimed at expressing the 'language of the body' not only in truth, but also in the 'authentic manifestations of affection'" (p.648). The embodied way a man must discover continence is different but essentially related in a complementary way to how an embodied a woman must discover and act on continence.

Add to this embodied understanding, John Paul II's further nuance between the positive (e.g. the ability to orient the respective reactions both to their content and to their character) and negative (e.g. the ability to abstain) meanings of continence. With these, the complexities of complementarity between the sexes become even more subtle. For a man, it is in his self-mastery of the natural sexual impulse of arousal that leads to initiating and acting on his desires to sexually possess a woman. The embodied way a woman must discover continence in the distinctive ways her sexual arousal also needs self-mastery over her impulse to want to belong with the man which expresses itself in boundaries she sets in her acceptance of his approaches to her.

John Paul II (2006) speaks to this complementary approach to continence, which is deeply, and essentially human and personal:

It must, before all else, look toward the human being as a person, toward the subject who decides about himself or herself, and not toward the “means” that turn him or her into an object (of manipulation) and “depersonalize” him or her.

What is at stake here is an authentically “humanistic” meaning of the development and progress of human civilization. (p.648)

The struggle with continence for the man and woman, is connected with what Pope John Paul II calls “a more thorough and deep analysis of the reactions (and emotions) connected with the reciprocal influence of masculinity and femininity on the human subject” (p.649). He writes:

“The interpersonal relations in which the reciprocal influence of masculinity and femininity expresses itself, we must ask what is reaction that can be qualified as ‘arousal’? Is there also another reaction that can and should be called emotion’? Although these two kinds of reactions seem connected, it is possible to distinguish them by experience and to ‘differentiate’ them by their contents or their ‘object’. The objective difference between one and the other kind of reaction consists in the fact that arousal is first of all ‘bodily’ and in this sense sexual’. By contrast, emotion, though it is stirred by the reciprocal reaction of masculinity and femininity, refers above all to the other person understood in his or her ‘wholeness’. One can say that this is an ‘emotion’ caused by the person’ in relation to his or her masculinity or femininity”. (p.649)

The distinction John Paul II implicitly uses here finds its origin in Stein’s phenomenological distinction between the physical body (arousal) and ‘psychic’ body (emotion) especially when

relating them to the characteristic embodied and reciprocal (e.g. complementary) ways men and women respond to sexual stimulation (arousal) and complementing each other (emotion).

John Paul II goes further to discuss 'arousal' and 'emotion' in the context of reciprocal influence of masculinity and femininity. Contenance, he says, has "the essential task of maintaining the equilibrium between the communion of the sexes in which the spouses want to express reciprocally only their intimate communion and the communion in which they welcome responsible parenthood" (p.650). He thinks that arousal and emotion can determine, on the part of the subject, the orientation and character of the reciprocal and thus complementary language of the body. Arousal directs itself to the form of bodily pleasure, tending toward the conjugal act which brings with it the possibility of procreation. Emotion, called forth by another human being as a person, even if conditioned in its emotive content by the masculinity or femininity of the 'other', does not through itself tend to the conjugal act, but limits itself to other manifestations of affection in which the spousal meaning of the body expresses itself (p.650). Adding to the richness of the complementarity of the sexes, masculine and feminine characteristics condition how these expressions of affection are given and received.

The profound truth in John Paul II's understanding of complementarity is that human beings are relationship-oriented in the ways we are made both structurally and emotionally. We are not meant to live alone but rather to share ourselves as the gifts we are to each other through the discernment and realization of the distinctive vocations to which we are called.

John Paul II on the Genius of Woman

Stein's *Essays on Women* (1932/1997) and her theory of female genius are directly foundational to the writings of John Paul II (1988) and his *Theology of the Body* (2006). Costa (2014) has seen the relationship between Stein and Pope John Paul II as "inseparable

companions” (p.81). In summarizing and amplifying insights taken from his reading of Stein, John Paul II (1988) writes that woman “is the representative and the archetype of the whole human race: she represents the humanity which belongs to all human beings, both men and women” (p.9). He goes on to amplify Stein’s distinction of the lived body experience by noting an essential characteristic he sees in woman in what he calls “the root of woman’s genius...by her ability and desire to pay attention to the person for whom they are, not for the[m]asculine] purposes of efficiency or function” (p.101).

John Paul II (1989) will also echo Stein’s understanding of the unity of the feminine lived experience of the body with the physical female body by writing how female corporeal life as structured is “oriented toward supporting the growth of new life within her as a mother from initial ovulation to puberty to later menopause” (p. 29). He then goes on to reiterate Stein’s understanding of the relationship between the corporeal and the lived bodily experience of male and female by calling the relationship one of ‘complementarity’. John Paul II sees that there is a basic duality in the creation of male and female as an expression of human totality wherein a host of differences in complementarity shows true unity of design amid diversity of individual expressions (Wojtyla, K. 1979). Allen (2009) thinks he borrows the term from Neils Bohr’s use of the term from his quantum mechanics theory in the study of light as a way to explain its wave/particle duality.

In promulgating its 2004 letter to the bishops of the Catholic Church, the Congregation for the Doctrine of the Faith (CDF) provides an important and integral way of defining the genius of woman borrowing extensively from the writings of John Paul II ‘s1988 encyclical ‘On the Dignity of Women’ as well as from his ‘Letter on Women’ he presented at the United Nations in

1995. Like Stein, the CDF letter presents its meditation on the genius of woman in the context of an essential complementarity with the genius of man.

Webster (2014) defines 'genius' as "an exceptional natural capacity, especially shown in creative and original work; a person having such a capacity" (p.235). The CDF (2004) refers to this capacity in woman as part of the fundamental values linked to women's actual lives in what John Paul II calls a "capacity for the other" (n. 13). This capacity for the other not only references Stein's understanding of woman shown in woman's enhanced relational and empathetic qualities, it also refers to her maternal potential for bearing children. By the way women are constituted, their genius is to "preserve the deep intuition of the goodness in their lives through those actions which elicit life, and contribute to the growth and protection of the other" (n.13). This intuition "is attributed to women's physical capacity to give life. Whether lived out or remaining in potential, this capacity constitutes and forms the female personality in a profound way" (n. 13).

In a time when there was an increased questioning of the role of women in the Church, many critics revert to a functional/occupational approach by which to understand women. The CDF (2004) seeks to amplify her person, role and attributes by way of her relational gifts and social role to view her specific genius (Allen, 2009). The CDF in referencing John Paul II (1995) locates this feminine genius socially in "the irreplaceable role of women in all aspects of family and social life involving human relationships and caring" (n. 13). He sees in a woman's genius a "specific part of God's plan which needs to be accepted and appreciated" as well as "more fully expressed in the life of society as a whole, as well as in the life of the Church" (n.10). Echoing Stein, this genius expressed in the life of society is the vocation to which the woman is called by God to "be present in the world of work and in the organization of society, ... having access to

positions of responsibility which allow them to inspire the policies of nations and to promote innovative solutions to economic and social problems” (n.13). From the heart of the Church and society, the genius of woman has emerged in history as those of “the highest caliber who have left an impressive and beneficial mark in history” (n.11) especially in activities involving the total person in caring for, cultivating, helping, understanding and encouraging the gifts of the other as extensions of the true feminine qualities of feeling, intuition, empathy and adaptability (Stein, 1996/1932 p. 82). The CDF here is thinking of the history of female saints who by their distinctive charisms have not only cared for the poor, instructed the ignorant, brought new children into the Church as well as had hospitals built for their care, schools built for their learning, and established families as well as orders of religious for the worldwide salvation of souls.

Like Stein, the CDF document also finds this genius expressed most fully in the life and person of the Blessed Mother. Mary, with her dispositions of pondering, listening, acting with joyful promptness, welcoming, humility, faithfulness, praise and patience, are the capacities of woman, “the genius of Mary, expressed in continuity with the spiritual history of Israel” (n. 16). Mary expresses her genius by way of her passivity and vulnerability. John Paul II (1995) sees these in the ongoing docility to discern God daily and learn embracing His will as the way to love, a “royal power that vanquishes all violence” (n. 16).

John Paul II on the Genius of Man in St. Joseph

While not as explicit in his use of the word ‘genius’ as he used in describing woman, John Paul II implicitly recognizes that man has his own particular characteristics that mark his genius. In his 1989 letter on the Guardian of the Redeemer, John Paul II described the particular qualities

of St. Joseph as a paradigm for the genius of man. As for a woman's fulfillment is to become a mother, so too does John Paul II (1989) see in St. Joseph,

“the fulfillment of man in becoming a father to Jesus whose fatherhood is expressed concretely in his having made his life a service, a sacrifice to the mystery of the Incarnation and to the redemptive mission connected with it; in having used the legal authority which was his over the Holy Family in order to make a total gift of self, of his life and work; in having turned his human vocation to domestic love into a superhuman oblation of self, an oblation of his heart and all his abilities into love placed at the service of the Messiah growing up in his house.” (n.8)

St. Joseph's fatherhood has a special significance on many levels as fact and as mystery:

“In this mystery, as in the Incarnation, one finds a true fatherhood: the human form of the family of the Son of God, a true human family, formed by the divine mystery. In this family, Joseph is the father: his fatherhood is not one that derives from begetting offspring; but neither is it an "apparent" or merely "substitute" fatherhood. Rather, it is one that fully shares in authentic human fatherhood and the mission of a father in the family. This is a consequence of the hypostatic union: humanity taken up into the unity of the Divine Person of the Word-Son, Jesus Christ. Together with human nature, all that is human, and especially the family, as the first dimension of man's existence in the world, is also taken up in Christ. Within this context, Joseph's human fatherhood was also "taken up" in the mystery of Christ's Incarnation.”

(no. 21)

As guardian and protector of his family, St. Joseph mirrors the charge given to Adam in the Garden of Eden in Genesis 2:15 to “till and keep it” (NRSV, 1977). John Paul II extols devotion

of St. Joseph as guardian and protector in order to exemplify the distinctive character of the man who sacrifices his life for the sake of the home. It is St. Joseph, who motivated by a shared sense of dignity and respect, protects his wife and his Child as evidenced by his obedience to God in both of his intrepid journeys to Bethlehem with the pregnant Mary, and after the birth, to Egypt to flee the murderous Herod.

By way of his craftsmanship as a carpenter, he works to provide the livelihood for the family.

As John Paul II (1989) notes:

“The growth of Jesus "in wisdom and in stature, and in favor with God and man" (Lk 2:52) took place within the Holy Family under the eyes of Joseph, who had the important task of "raising" Jesus, that is, feeding, clothing and educating him in the Law and in a trade, in keeping with the duties of a father”. (no 16)

In this role of provider are the echoes of Edith Stein’s formulation distinctive of man as one who has a general characteristic of being able to focus intently on his work who is “consumed by his enterprise expect[ing] others will be interested and helpful” (Stein, 1932/1996, p. 82). St. Joseph’s work as a carpenter is the activity that materially sustains the Holy Family providing a stable base for growth and development as a sign of his self-gift of work:

“This "submission" or obedience of Jesus in the house of Nazareth should be understood as a sharing in the work of Joseph. Having learned the work of his presumed father, he was known as "the carpenter's son". If the Family of Nazareth is an example and model for human families, in the order of salvation and holiness, so too, by analogy, is Jesus' work at the side of Joseph the carpenter”. (no.22)

Implied in this view is another of St. Joseph’s distinctive male characteristics as a task-focused, planner who works with rigorous precision and excellence. Again Stein’s insights on male

characteristics applied to St. Joseph are illuminative: “The masculine species strives to enhance individual abilities in order that they may attain their highest achievements” (Stein, 1932/1996, p. 187-188).

St. Joseph is also a teacher and mentor to Jesus which is an important role for the father to offer to his children. As Burke (2015) notes:

“The healthy relationship with the father ensures that the child is able to identify himself or herself properly as a person in relationship with others; this stable sense of self is critical for both boys and girls..... A child’s relationship with their father is key to a child’s self-identification, which takes places when we are growing up. We need that very close and affirming relationship with the mother, but at the same time, it is the relationship with the father, which is of its nature more distant but not less loving, which disciplines our lives. It teaches a child to lead a selfless life, ready to embrace whatever sacrifices are necessary to be true to God and to one another”.

(p.3)

For John Paul II, St. Joseph represents the true characteristics of the genius of man shared with Jesus, his Son in the context of his loving relationship with his wife Mary as a family built and perfected on a mutually shared vocation of love. John Paul II (1989) also points out how important it is to see these vocational male characteristics of St. Joseph in complementarity with St. Mary’s distinctive female characteristics (nos.17-20). Her maternal love of Jesus fostered in Him the attributes of compassion and empathy. His paternal love and virtuous example to Jesus built a discipline to help Him avoid excessive self-love ensuring that He be able to identify Himself properly as a person in relationship with other others (Burke, 2015). Jesus’ human nature is thus fulfilled by human virtue through a well-formed expression of the vocation of a

virtuous family life that is augmented by that divine infused virtue that came from His union with His heavenly Father.

The Neuropsychology of Gender Characteristics

The term “gender” has for decades described, “learned and cultural behaviors loosely associated with biological sex” (Gappa & Pearce, 1982, p. xii). However, for Tiefer (2000) and other social constructivists there is something of a minimalism to associate the term gender with one’s biological sex at all. One’s *sex* may be male or female, but one’s *gender* is “masculine” or “feminine.” In the contemporary social construct conception, “man” and “woman” are more commonly associated with gender roles and behaviors typical to either gender while almost typically disassociating underlying biological structures and processes with behavior. The origins of such disassociation come from Money (1969) and other sex psychologists that advocate sex reassignment surgery.

While neuropsychologists point increasingly to observed differences in the brain between the male and female (Kaiser, 2012, p. 133), it is a matter of further debate whether or not one’s *perceived* gender is a matter only of socialization. Either way, it is currently unpopular to think of gender as intrinsically linked to one’s sex. Furthermore, it is becoming increasingly common for young people to “choose their pronoun,” where they simply select what they would like to be called (“he,” “she,” or even a host of other chosen self-descriptors). The singer Prince at one time opted out of any gender reference by preferring a symbol.

Advances in brain imaging and hormone research have moved science beyond the theories of human androgyny and social construct. Sex differences are detectable even before conception and birth. Shettles (1996) in his attempt to find the ‘gender gene’ identified the difference between the androperm (e.g. the Y-chromosome bearing sperm producing male babies) and the

gynospem (e.g. the X-chromosome bearing sperm producing female babies). Rhoads (2004) makes compelling arguments based on brain research that sex differences between men and woman should be taken seriously, and not seen simply as a mere social construct:

“Sex differences are large, deeply rooted and consequential. Men and women still have different natures, and generally speaking, different preferences, talents and interests... These differences can be explained in part by hormones and other physiological and chemical distinction between men and women. Thus they will not disappear unless we tinker with our fundamental biological natures”. (pp 4-5)

These major differences start to occur early in a child’s development. Studies have found that one-day-old female babies look longer at a picture of a human face, whereas male babies look longer at objects (Baron-Cohen, 2004). Day-old female infants cry longer than male infants when they hear the sound of other crying infants (Baron-Cohen, 2004). The Fatherhood Foundation (2007) notes:

“Girls like cooperation more than boys do, and competition less. They care more about playmates’ feelings and can read others’ emotions better than boys. Girls like one-on-one relationships..... Boys are more self-centered. They have a harder time learning to share. They act up more and are less likely to be team players in school. Boys develop strong passions for particular things...and these things change through time. A boy might be unable to get enough of cars, trucks, tractors, toy dinosaurs, then music, then computers”. (p.4)

New imaging techniques gives researchers a tool to begin and understand sex differences of the brain. Studying the neural structural disparities, endocrine system, and environmental influences

on the brain may further advance our understanding of the feminine and male genius. (Brizendine, 2006, 2010).

While this burgeoning area of cognitive neuroscience is still relatively young, the conclusive truth is evident that men's and women's brains are to a significant extent 'wired' differently from the beginning (Kimura, 1996, p.259). An example of directions in this emerging field is epigenetics (e.g. the study of the relationship between genetics and environment). This field seeks to discover how environmental factors, trigger, activate or alter genetic origins which in turn control endocrine production that has such a dramatic effect on *in utero* sexual characteristic formation. (Halpern, 2012). In the search for links between genes and behavior, the frontier of contemporary research seeks to discover more about the subtle ways by which chemical processes activate or suppress genetic activity that, in turn, affects behavior. Epigenetic studies show that genes do not act independent of environment (Halpern, 2012). This means that inferences about the interaction between structural brain differences, hormonal effects as well as environmental interactions of behavior are highly complex and resist independent analysis in favor considering interdependencies (Halpern, 2012).

These interactions however, should not leave the researcher tentative as to distinctive structural differences between male and female brains and the behaviors such differences come to express especially when noted in large population studies over time. This study uses scientific neuropsychology studies that have statistically congruent results over time within large populations of study. These results corroborate the neuropsychological basis of many of woman's and men's essential characteristics Stein and Wojtyla noted earlier. These distinctive characteristics find many of their neuropsychological origins in the brain's structures, its

regulation of hormones as well as the behavioral effects of prenatal hormones. This thesis considers examples from all three areas.

Neuropsychological Characteristics of Women

Rhoads (2004) presents substantial arguments based on brain research that sex differences between men and woman should be taken seriously, and not seen simply as a mere social construct. By using Eagly's (1999) and Cashdan's (1998) research to investigate these constitutive structures, Rhoads references the emerging preponderance of empirical research showing that men and women in fact do conform to some attributes shown in the work of Stein and Wojtyla. Halpern (2012) shows how women are typically characteristic in expressing social sensitivity, being friendly, tender-minded, more empathetic, and able to express emotions as well as show concern for the welfare of others in nurturing kinds of ways. She sees how men are typically characteristic in focusing on work, organization, function, provisioning, planning, acquisition and abstract thinking in working with themselves within an environment.

For the structural examples, Rhoads references the early research of Kimura (1999) and Sommers (1999) and the newer imaging research of Jahanshad (2012) of which Hotz (2013) reports. Jahanshad (2012) and her team began to employ a new imaging technique called Diffusion Tensor Imaging (DTI) to trace how water molecules align along the brain's trillions of critical connection white-matter nerve fibers which form the physical scaffolding of thought. While organ size was formerly not an altogether accurate reference in regards to any indicator of function, DTI now allows the researcher to gauge comparative function by way of imaging the internal neural pathways. Jahanshad (2012) shows in her research that women in their 20's have more connections between the two brain hemispheres. She calls this phenomenon a woman's cerebral 'networking' structure. DTI studies on average with large population samples reveal that

women are better connected left-to-right and right-to-left across the two brain hemispheres (Rhoads, 2004, p.28). This phenomenon may help to explain why women are more naturally disposed in talking about their emotions. With trans-hemispheric neuron movement augmented by more neural connectors, DTI research shows that the cognitive and emotive parts of each hemisphere come easier into play (Rhoads, 2004) (Jahanshad, 2012). This research supports Stein's earlier reference to the primary strength of a woman's genius as abiding in the emotional life and language strengths which act as the basis for the woman's predominance in the personal life of relations with others.

Brizendine (2006) in her work on the structures of the female brain points out how subcortical structures when compared to a typical masculine brain vary with important behavioral consequences. There are two brain centers which are notably larger and, by comparative imagining, more active in women: the anterior cingulate cortex (ACC), which weighs options and makes decisions as well as the insula, which processes emotions and feelings. Brizendine (2006) notes that the former is the 'worry-wort' center (p.5). The latter is the center that processes 'gut feelings' (p.5). The hippocampus, which is the principle hub of both emotion and memory function, is also typically larger and more active in comparative imaging in women than in men. She further notes how

“the female brain has tremendous unique aptitudes such as outstanding verbal agility, the ability to deeply connect in friendship, a great capacity to read faces and tone of voice for emotions and states of mind, and the ability to diffuse conflict.” (p.8)

These brain structures help to explain some of the biological structural underpinnings that account for many of the behavioral characteristics Stein and Wojtyla point to that distinguishes

the genius of women in predisposing them in caring for, cultivating, helping, understanding and encouraging the gifts of the other as extensions of the true feminine qualities of feeling, intuition, empathy and adaptability that their brain structures indicate. While the comparative biology of brain structures point to specific functions of the brain that prompt behavior, environment and hormones along with cognitive and emotional dispositions can greatly affect how basic comparative brain structures can express the essential characteristics of men and women (Brizendine 2006, p.7).

In the female brain, the hormones Estrogen, Progesterone and Oxytocin predispose brain circuits toward female-typical behavior of feeling, intuition, empathy and adaptability (Brizendine, 2006). Udry's (1995) work suggests that the presence or absence of particular sex hormones during critical stages of postnatal development play a role in sexual differentiation of the developing brain. He measures the effects of androgenic hormones in adolescent boys (1985) and young adult women (1995). His research suggests that the hormonal environment of the fetus in the mother's womb to be a major factor in explaining gender role behavior in later in life. Dabbs (2000) furthers this work with his studies on congenital adrenal hyperplasia (CAH). When CAH occurs for female fetuses, they are exposed to high levels of testosterone in pre and neo natal stages of development effecting dramatic and persistent effects in later life. CAH females typically show later in life a liking for boys' toys, are more aggressive, competitive and self-assured. They tend to act in the long-term as 'tom boys' who want careers, have better spatial skills and seemed less maternally inclined to want children.

While all brains produce Oxytocin, the woman releases large amounts compared to the man during intercourse, pregnancy and breastfeeding. This release helps the woman especially to sense a deeper bonding and accounts for her proclivity towards being especially relational.

Oxytocin goes further to help her naturally bond with her baby, to differentiate between the kinds of cries the baby makes. These findings are based on Baker (1987) whose research confirmed that females are better at detecting pure tone beginning in early childhood through most of adulthood. The combination of bonding and tone detection accounts for how a mother can differentiate between the kinds of cries her baby makes.

While the early work detected a woman's ability to detect her baby's particular smell from that of her husband's (Dabbs, 2000), further research has supported this distinctive ability. Doty & Cameron's (2009) further research showed in women an ability to detect faint smells over the period of an entire lifetime. Researchers attribute this characteristic in women who have borne children, to the effect of Oxytocin on bonding with husband and child that heightens the woman's ability to distinguish both parties by subtle differences in smell even while blindfolded.

The research of Rehman & Herlitz, (2006) suggests that women are better at recognizing faces than men. These findings seem to corroborate Stein's earlier understanding of women's comparative strength in relating better to others than men. Sasson (2010) extends this research by attempting to explain how this characteristic is due to females being better at reading facial emotions which act as better recognition cues. This may be due to a woman's ability to process more prominently through the MNS (e.g. 'mirror neuron system) regions of the brain in conjunction with the facial-recognition part of the brain (Brizendine, 2006). The ease with which females tend to process faces and emotions supports differential hemispheric processing. Brain imaging has advanced research concerning the sex differences in bodily-kinesthetic ability. While there are numerous examples of outstanding male ballet dancers, the vast majority of accomplished ballet dancers are female. Kimura's (1996) research attributes this to fine motor movements that women possess. As a gender, they typically excel in their noted dexterity of

hand manipulation of small objects. Kimura (1996) believes that this ability also translates to refined foot movements as well.

Tests given across cultures show women have better verbal abilities, language production, writing skills, memory for words, algebra and reading than males (Gazzaniga, Ivry, & Mangun, 1998). This may be for the reason that women as a specific gender have a distinctive ability in the cognitive process of rapid access and retrieval of information. While all behavior results from the joint action of the biological, psychological, and social environmental (Halpern, 2012), more research on comparative brain structure and hormone effects both in the pre and post natal stages of development will help to further substantiate the areas to which a woman has distinctive advantage.

In increasing the age of development, Dabbs (2000) research shows a woman's ability to produce larger amounts of oxytocin, dopamine and ovarian estrogen occurs at the onset of puberty than men. The behavior this endocrinal fact leads to in teenage girls is the characteristic pleasure they derive from connecting with others in parties, Face book, clothes sharing, hair play, gossiping, and shopping (Brizendine, 2006). This distinctive quantitative hormone combination may also corroborate John Paul II's (1989) note of why the female tends to have a stronger mind-body unity than the male. Throughout their development, neuropsychological studies corroborate the feminine's appreciation of the unity of the lived experience of the body because of how female corporeal life, as structured by these underlying hormone combinations, is "oriented toward supporting the growth of new life within her as a mother from initial ovulation to puberty to pregnancy into later menopause" (p. 29).

Neuropsychological Characteristics of Men

Jahanshad's (2012) conducted DTI studies researching men and women in their 20's to determine if there were more connective fibers within each hemisphere as compared to the general population. They found that men presented with greater front to back connections within hemispheres than those of women. She calls these findings 'intra-hemispherical' or 'compartmentalized' structures (Rhoads, 2004, p.28). These findings suggest men excel at brain processing functions that require greater intra-hemispherical neuron connectivity. With greater neuron connections proceeding front-to-back within the hemisphere, men's brains exhibit more compartmentalized thinking that tends to excel at specialization, focused attention and greater degree of spatial visualization. Males apparent ease of processing information that is rational, logical, abstract and hierarchical appears to be related to intra-hemispherical organization, thus predisposing them to more systematic ways of thinking that are characteristic of mathematics, philosophy and science. This organization of the male brain this way may help to explain why males are typically better at math problem-solving, generating and using info in visual images, mechanical reasoning, theoretical mathematics and science. Males under 40 have better dynamic visual acuity (e.g. the ability to detect small movements in the visual field) which helps to account for a male's ease of process in Visio-spatial skills that are prominent throughout cultures and large international studies (Moore & Johnson 2008). This research helps to corroborate Stein's insight (1932/1996) that one of the distinctive characteristics of the masculine is the ability to focus almost exclusively on the work at hand or task to be done with a sense of accomplishing it in an excellent way. "The masculine species strives to enhance individual abilities in order that they may attain their highest achievements (Stein, 1932/1996, p. 187-188).

Regarding hormonal influences on forming distinctive masculine characteristics, testosterone and vasopressin play key roles (Brizendine, 2010). *In utero*, these hormones have the effect of forming the male fetus. At puberty, these hormones combine with cortisol, a stress hormone, that in approaching puberty, supercharge the young male's brain preparing him for the male fight or flight response in reaction to challenges to turf or status (Brizendine, 2010 p.33).

Jahanshad's (2012) characterization of the hemispheres as compartmentalized and tendency toward motor action presupposes males to focus on work and physical activities. Simultaneously, there is improve focus and less emphasize on those things emotional, perhaps due to greater inter-hemispheric modulation by the frontal lobes. The effect of this distinctive male psycho-neurological phenomenon could be the basis of male mind-body disassociation Stein observes when she writes that "for a man's body has more pronouncedly the character of an instrument which serves them in their work and which is accompanied by a certain detachment" (Stein, 1932/1996, p.95).

Neuropsychology that Aids Complementarity

Much of the previous material on brain structures, endocrine activity and genetic interaction with environment might lead the reader of this research to believe that such material structures are the only determinants of the human psychology of gender differences. As stated earlier, Stein sees established in woman's unique strengths of intellect, language skills, emotion, relationality, potential maternity and empathy as a correspondence to a man's strengths of functional abstractive intelligence, planning, protecting, providing and potential paternity (See Table 1). This is one of Stein's best estimations for how the functional complementarity between the sexes that strengthens and augments each other. Modern neuropsychology, seventy years later, points to deeper structures that help to explain the expression of these characteristics. With innovative

brain imaging is in its early inception (Halpern, 2012), scientists can probe the comparative areas of the male and female brain to better understand this complementarity of the sexes, especially when in relational situations they go awry.

Brizendine (2010) points to research that suggest brains have two emotional systems that work simultaneously: the mirror neuron system (MNS) and the temporal-parietal junction system (TPJ) that work differently between men and women (p.96). Males seem to use the TPJ more. Females seem to use the MNS more. Brizendine bases these conclusions on the Schulte-Ruther (2008) team research who found movement in scanned males away from the MNS and switched increased neural activity in the TPJ. Scanned females however, showed increased activation and a tendency to remain in the MNS, specifically the inferior frontal mirror neurons.

Brizendine (2010) applies behavioral analysis to imaging scans for a male-female couple working on conflict management skills scenario to show something of the neuropsychology of complementarity between emotional empathy and cognitive empathy. In our hypothetical DTI brain scans, she imagines scanning a male and female brain. As she complains about her problem and starts to cry, his system for reading emotions (MNS) would switch on allowing him to briefly feel the same emotional pain he was seeing on her face. Brizendine (2010) calls this emotional empathy. The man's response is to try and 'fix the situation'. His brain's 'analyze and fix-it circuits', the TPJ, searches for a solution. Brizendine (2010) calls this cognitive empathy. The male brain is able to use the TPJ starting in late childhood, but after puberty, a male's reproductive hormones may cement a preference for it. Researchers have found that the TPJ keeps a firm boundary between emotions of the 'self' and 'other' (Brizendine 2010). "This prevents men's thought processes from being unduly influenced by other people's emotions,

which strengthens their abilities to cognitively and analytically find a solution” (Brizendine (2010, p.97).

This processing difference between males and females may account for the shift in areas of processing when an event is assessed as emotionally laden when men and women are in conflict. A possible cognitive analysis of the situation might proceed as such: Since a man’s TPJ would be busy working out a solution, his MNS would no longer be activating. A woman whose MNS tends to stay in the activated mode, preferring to work with the processing trans-hemispherical neural connective strengths between thoughts and emotions, would be convinced that the man’s analytical response meant that he did not understand how she felt or that he did not care (Brizendine, 2010, p.98). Scientists still do not understand why the female brain stays in the MNS longer, while the male brain quickly switches over to the TPJ.

What is of interest in the neuropsychological analysis of these aspects of complementarity are the relationships between emotional and cognitive empathy and their respective MNS and TPJ centers. Understanding the respective switching between these two centers and how the resulting behaviors are interpreted in either conflicting or supporting ways can lead therapeutically to a resolving appreciation of the distinctive ways male and female brain structures process information. Does this kind of mental processing effect the ways men differ from women in making moral decisions. Researchers know that action-oriented impulses are more central motor and frontal lobe function. There is not as much subcortical processing (Halpern, D. 2012). ‘Impulsive’ processing when referring to it as a neuro-function, occurs when the frontal lobe is ‘disinhibited’ either by increase stimulation and/or poorer modulation between cingulate/subcortical and prefrontal/frontal lobe (Halpern, D. (2012). These processing gained from new Neuroimaging, may be the keys to figuring out more of the process.

How might the new methods of Neuroimaging illustrate areas of the brain where men and women consider moral scenarios? If there is a difference between logic, analysis and solution-based (TPJ) processing versus emotional (MNS), what effect would more risky/costly situations have on the processing? Does the brain process ethical dilemmas differently? What of the underlying hormonal and epigenetic factors that affect brain processing based on age and stress levels? With continuing research into these initial findings, researchers will continue to unlock discoveries in the distinctive ways that males and females process and understand based on the elaborate structural and hormonal patterns of gender complementarity.

How Marriage Best Expresses Gender Complementarity

Vitz (2014) provides a good analysis of gender attributes refined from a therapeutic analysis (see Table 3). Women are more physically suited for children and interpersonal intimacy. They are softer, smoother, have a friendlier higher pitched voice and tend to relate well to others. Men are physically rougher, hairier, have a lower pitched voice and are less sensitive to temperatures, smells, sounds, tastes and to social communication of emotions (Vitz, 2014). Men's hands and feet are bigger than a woman's which are both a strength and a liability. In terms of instruments of strength, powerful hands and feet can do rough and heavy work. They can build, fight, engage in difficult competitive sports, defend a family, and protect the weaker. With the aggression that is typically masculine, a man can forcefully take the initiative, take large risks, set out to explore new regions. This is why, for the most part, a majority of explorers have been men (Vitz, 2014). As a liability, men may tend to act by impulse when they instead should listen and deliberate. Pride can make strength imposing and lead to bullying, domination or abuse of others.

Women on the other hand, have a tendency toward superior trans-hemispheric brain processing between emotion and cognitive centers. With small fingers and fine muscle coordination, they engage successfully in sewing, knitting, ballet, languages, verbal ability, empathy, emotion and appreciate the beauty of the body. Given Stein's understanding of the unity between their physical body and 'psychic' body (Stein, 1932/1996), women are more involved in their body, a body that changes more over time than does a man's body. They often express their concern for preserving and enhancing their bodily beauty by way of make-up, hair styling, body protection, lotions, and pedicures. In complementarity, men can share their strength with women who in turn can model social relationality enabling them to live well with others.

As noted above in Jahanshad's (2012) study of male-female comparative brain structures, man's logical, abstract and hierarchical thinking which comes from the preponderance of intra-hemispherical processing, gives him the advantage as scientist, thinker, mathematician, and many forms of systematic thinking (Vitz, 2014). By no means does this tendency exclude women from the field. Baron-Cohen (2003) has described male hemispheric brain processing as autistic and proposes that extremely autistic thinking is 'hyper-masculine' noting that autism is more common in males by about a 4-1 ratio. Right-side hemispheric processing in men leads to an emphasis on visual-spatial abilities. These qualities make for superb athletes, pilots, hunters, and gamers who can picture objects in space and react to them in a fluid, spontaneous fashion. Left-side hemispheric processing in men leads to an emphasis on the cognitive and intellectual development. Men who are hyper-developed in either hemisphere tend to be 'mind-blind', incapable of understanding other people as having minds, thoughts, feelings and intentions (Vitz, 2014). People for these types of men tend to be seen as objects or things related to the rest of the

inanimate world. Extrapolating from Stein's negative masculine tendencies (Table 1) Vitz (2014) notes of the tendencies and history of hyper-male brain processing:

“Most scientists and abstract thinkers are not truly autistic, but a little bit of autism probably helps. Such disciplines with their rejection of emotions as bias, requirement of logical connections only, emphasis on abstraction and systematic hierarchical order, even their rejection of intention in the material world can be seen as incorporating an underlying autistic set of assumptions. This understanding of science arrived with Bacon, Descartes and Galileo and created the modern model of the lonely, empty, machine-like universe almost devoid of meaning. By rejecting the relevance to science of a personal God and by rejecting as relevant to understanding the universe any property like intention or purpose or end to which thing tend, set up today's autistic scientific naturalism as conceptualized by the isolated objective observer”.

Vitz (2014) sees a complement to the hyper-masculine mode of thinking in the hyper-feminine that further extends Stein's negative feminine tendencies gone awry (table 1). Since emotion is the key to a woman's life, hyper-feminine trans-hemispheric processing would “express itself in seeing persons everywhere and responding very emotionally to them, overriding regulations, laws, logic and normal rational constraints” (Vitz, 2013). Examples could range from over-dependency/self-identification with another to identifying self with animals, pets, nature, and perhaps seeing spirits in inanimate objects and places in a world filled with spiritual or ghostly causes without regard to normal reasonableness. Vitz (2013) calls this an ‘animist’ or an ‘anthropomorphic’ mode or mentality. These gender studies give good trend

analysis of gender dispositions and abilities. Exceptions to trends do not disqualify trends once the corroboration between structures and gender behavior are understood.

While the attributes of masculine and feminine sex differences have an undeniable basis in brain, hormone and genetic studies, a theory of complementarity is unitive to the point of positing men and women equal in dignity, moral and theological importance. Vitz (2014) proposes that “many of the typical weaknesses of each sex are matched by a complimentary strength of the other” (see Table 3 p. 48).

On many levels, marriage helps men and women to fully experience how their distinctive complementary strengths and weaknesses can be important in the flourishing of life both in the procreation of children and helping each other in a bond of common friendship to love God and neighbor well. Allen (2014) points to four essential characteristics of the complementarity between a man and a woman: Equal Dignity, Significant Difference, Synergetic Relation, and Intergenerational Fruition. She shows the dynamism of these characteristics in play when she writes:

“At the level of biology, when a man and a woman contribute to generation, they have the same number and kind of chromosomes and the same kind in the sense that they are human. But the two of them are different. There is a significant difference between the XX and XY chromosomes, and the way they come together (e.g. a woman generates in herself. A man generates another). Their relationship is synergetic, not always every time, but it has the potential...to basically participate in bringing a new human being into existence. It is generational because they have fathers, mothers, and grandparents” (p.3).

Conclusion

While average differences about any group of people does not say everything about individuals, understanding persistent similarities in brain structures and observed hormone influences can help in understanding the neuropsychological basis for gender characteristics. Although there are gender differences, they do not always translate to distinct real differences in brain processing and resulting behavior (although there will be a difference an example being in brain volume sizes of grey matter). We have to be careful making generalizations until we have the research that corroborates our philosophical and psychological theories. There may be some preponderance of the evidence in some things but not proof. Typically research with the brain is limited by lack of controls, ex-post factor/correlative studies, failure to capture and measure alternate explanations (e.g. double dissociation), individual differences and environmental factors/controls.

What this research has attempted is an analysis of a portion of the perennial philosophical and theological thought of Stein and John Paul II that can be corroborated by authenticated structural and hormonal realities that constitute sexual differences. Scientists continue to document an astonishing array of structural, chemical, genetic, hormonal and functional brain differences between men and women (Brizendine, 2006). One aspect of this complementarity comes from appreciating how females and males are different in many important ways of brain structure, hormonal processes given distinctive environmental influences. These are critical differences despite the similarities of functional output and the fact that 99 percent of male and female genetic coding is exactly the same (Brizendine, 2006).

Groups with political agendas have misused sex differences in an attempt to stress equality based on comparative function (Zell, Krizan, Teeter, 2015). This method of 'metasynthesis'

disregards the constitutive underlying biological characteristics of both a women's and man's genius for purpose of supporting the brave new world of equal participation based on gender as merely a social construct. Equality based on function seems their overriding social re-engineering goal. Research that concludes such results finds pride-of-place as the basis of group-think that minimizes true sex differences.

While this study has tried to recover the biological basis of sex characteristics as expressed in brain hormone and gene structures, these structures and their interaction are only the beginnings of new attempts to represent a full and integrated neuropsychology that takes its rightful place in an integrated anthropological psychology that embraces the human being with an in-built complementarity for another. While brain, genetic and hormonal sex differences, though subtle, are profound and lead to distinctive sex characteristics, the expressive flourishing of these characteristics in personal and social behavior require the kind of moral and spiritual formation both St. Edith Stein and St. John Paul II consistently advocated so that each sex can contribute in distinctive and unique ways to the flourishing of the human species.

Table 1

Stein (1932)**Gender Characteristics/Complementarity****Positive**

Male	Female
Focus and specialized attention to work	Relationality and emotion
Functional/physical strength	Personal/soft, smooth, attractive
Abstractive, planning	Empathy and Concrete
Paternity, protecting, providing	Maternity, nourishing, bonding
Tends to dissociate mind/body	Mind/body unity
Gather , manage, organize	Holding, preserving, encourage growth
Consumed by enterprise	Heart of the Household
Individual abilities pursuing excellence	Psychosomatic unity; harmony of faculties
Physical body	Psychic body

Negative

Negative self-absorption	Lives vicariously through others
Excessive attention to externals	Excessive curiosity, gossip, criticism
Strength used to dominate/abuse	Excessive emphasis on family, profession,
Collect/hoard	Inability to take criticism; seen as personal attack
Overly pre-occupied	Emotions rule

Table 2

John Paul II (1988/1989/2006)

Male	Female
Positive/Negative of Continnence (arousal, emotion)	
Equilibrium between the sexes/ reciprocal	
Self-mastery of sexual impulse	Boundaries to the need to be needed
Wanting to possess..	Wanting to belong to..
Depersonalized objectification	Emotional response/dependent
Nuptial meaning of the body	
Receiving in a giving way	Giving in a receiving way
Gender Characteristics	
Excellence in strength, work	Ability/desire to pay attention to person
Efficiency/function	Capacity of the other
Protecting, providing	Nurturing/ protecting
Paternal self-gift	Maternal self-gift
Intrepid, risk-taking	Consolidate/ security
Judging, planning, focus, goal	Feeling, empathy, intuition, adaptability
Active, resolute	Passive, vulnerable
Distance/ discipline	Closeness/ intimacy

Table 3

Vitz 2013 (rev.1)

Male and Female Complementarity**Body-Based Psychological Strengths and Weaknesses**

	Male	Female
1.	+aggressive, initiating - angry, dominating	+ nurturing - controlling, smothering
2.	+risk-taking - impetuous, rash	+cautious/careful - timid, retiring
3.	+ logical - rigid	+ intuitive - irrational
4.	+abstractive - impractical	+ concrete/practical - too literal
5.	+ objective/problem-solving - cold/heartless	+ subjective/ sympathetic - overly emotional/ merged
6.	+systematic - closed-minded	+ open-minded - chaotic
7.	+mental toughness - insensitive, clueless	+sensitive to others -easily hurt, cries
8.	+skeptical - too skeptical	+trusting - credulous

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