A Scientific Basis for Humanae Vitae and Natural Law: The Role of Human Pheromones on Human Sexual Behavior Preferences by Oral Contraceptives and the Abortifacient Effects of Oral Contraceptives

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Abstract

This article will review *Humanae Vitae*'s predictions of the effect of oral contraceptives (the pill) on male–female relationships and societal behaviors. A scientific, biochemical basis underpinning these predictions is made. Evidence of human pheromones will be given. Evidence for the changes in male and female pheromones caused by the pill is given. Observational and experimental evidence of changes in primate and human behaviors by pheromones is detailed. The role these changes have caused in attractiveness and selection of mate by both males and females in preferences concerning major histocompatibility genes is examined. These changes have also resulted in societal changes in sexual behavior and family structure and have led to increased violence against women. Biochemical evidence for the abortifacient properties of the pill is given. The use of natural family planning is given as a needed alternative to the harms of the pill.

Summary: The human biological bases of *Humanae Vitae*'s predictions of the effect of the pill on male–female relationships are examined. Evidence of the presence of pheromones in primates and humans is given. The pill changes human pheromones, odors which are subconsciously detected. These pheromones cause humans to change what they find attractive in a mate. Choosing a mate while on the pill can result in unstable and more violent unions. The biological basis for the fact that the pill causes abortion of human embryos is given. A healthy alternative for fertility control is explained.

Keywords

Humanae Vitae, pheromones: major histocompatibility genes, the pill, oral contraceptives, human mate selection, abortifacient, violence against women

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Humanae Vitae instructed that sexual activity should be observant of natural law (Paul VI, 1968). Natural law asserts that by virtue of our human nature (endowed by our Creator), there are universal human values and rights knowable through reason. There is also a scientific basis that was unknown prior to the publication of *Humanae Vitae* in 1968 that supported the veracity of the conclusions of Pope Paul VI. It is the role of human pheromones in human sexual behavior and the changes in those natural pheromones by synthetic unnatural hormones found in hormonal contraception that have made the words of Pope Paul VI so prescient. Recent medical research has affirmed that the pill not only acts as a contraceptive but also frequently acts as an abortifacient.

Our fallible human nature often causes a response of “Prove it!” when a restriction meant for our well-being is placed upon what is considered our freedom for our cherished choices. We want to have a reason for the restriction. Prove why it is better for me to restrict my behavior. Prove to me why it is wrong and will hurt me.

In the same way, the US Supreme Court’s 1973 decision in *Roe v. Wade* may have been changed by the scientific knowledge gained after 1973, so may have the Church’s clergy and faithful embraced rather than rejected the teachings of *Humanae Vitae*. Surely, if a moving and audible ultrasound image of a three-week-old embryo’s beating heart had been available to the jurists, they may have been swayed to protect the life they could see and hear with their own senses. Ideally, while the clergy and practicing Roman Catholics should have acceptance as a default position even when faced with uncomfortable restrictions on perceived private spousal behavior, the bolstering of that acceptance with clear scientific data could be welcomed. The science illustrating the reason oral contraceptives (the pill) affected sexual behavior and “mate” preference could only be obtained after the majority of women used the pill, and the sociological changes in the male/female relationship became painfully apparent. Although in 1968 induced abortion was clearly seen by most as immoral and was illegal, the known abortifacient effects of the pill were not yet known. Ironically, many of the proofs of the abortifacient effects of the pill were derived from data obtained through in vitro fertilization (IVF) studies. IVF routinely sacrifices the lives of human embryos as does induced abortion.

***Humanae Vitae*’s Prescient Predictions on Human Behavior**

The commission of lay experts and clergy initiated by Pope John XXIII in 1963 gave a report to Pope Paul VI that endorsed the family planning aspects of the pill, that is, the spacing of children and limiting of family size in light of “overpopulation” concerns. However, Pope Paul VI (Catholic Church and Paul 1968) noted that there were things in the report “at variance with the moral doctrine on marriage constantly taught by the magisterium of the Church”.

In section 17 of *Humanae Vitae*, Pope Paul VI makes three predictions of the effects of the pill on human behavior. First, he said that the pill would “open wide the way for marital infidelity and a general lowering of moral standards”. The divorce rate has risen dramatically since 1968. He also said that young would be especially vulnerable when exposed to the temptation of premarital sex, thinking themselves free of the worry of pregnancy. Few can deny that premarital sex and even cohabitation has become almost the norm rather than the exception (Copen et al. 2012). Second, he said the pill might reduce a man’s wife to “being a mere instrument for the satisfaction of his own desires” (p. 17). We now see the widespread objectification of women in our culture today (Szymanski 2011; Swim, Cohen, and Hyers 1998; Swim et al. 2001). Third, he warned against the power of contraception falling into governmental hands. In the United States, there is the imposition of “Obamacare” that mandates free birth control to women, even by religious institutions that object. We have only to look at China’s one-child policy to know where that can lead.

Humanae Vitae also reaffirms natural family planning (NFP) methods to achieve or postpone pregnancy as a way married people can rightly control their fertility and plan families.

The Pill and Human Sexual Behavior

Had Pope Paul VI known the physiological changes caused by the pill, which result in behavioral changes, he would have come to the same conclusions on the pill’s effect on human behavior that he arrived at by moral doctrine on marriage taught by the magisterium of the Church and natural law.

In 2010, fifty years after the debut of the pill and celebrated by a *Time* magazine cover story, the *British Medical Journal* published a study regarding the mortality of pill users (Hannaford et al. 2010). The only statistically significant difference found

between users and nonusers of the pill was the risk of dying a violent death. Violent death was almost double among pill users. There was a 192 percent statistically significant increase in risk of dying a violent death. For women who took the pill for eight years or longer, the risk increased and more than doubled. The authors reported that their finding was real but that they could not explain them. Almost immediately, a "rapid response" was published online in a letter to the editor by S. Craig Roberts, then a senior lecturer at the University of Liverpool in the United Kingdom. He wrote:

Hannaford et al. (2010) report convincing evidence for reduction in mortality from several forms of cancer and other diseases in women who have used oral contraception compared to never users. However, they also find a higher rate of violent death among ever users, and that the rate of violent death increases with longer duration of oral contraceptive use, but they are unable to explain these intriguing results. I suggest that recent evolutionary insights into human partner choice may provide a clue.

There is evidence that use of oral contraception alters women's baseline preferences for men (Roberts et al. 2008; Alvergne and Lummaa 2010) such that pill users prefer men who are relatively similar to themselves at loci in the major histocompatibility complex (MHC). One consequence of being partnered with relatively MHC-similar men is that such women express lower sexual responsivity toward their long-term partner compared with women in relatively MHC-dissimilar couples, reject sexual advances from their partner more frequently, and report having had more extra-pair partners (Garver-Apgar et al. 2006). Other evidence points to MHC-similar couples being more likely to experience problems conceiving children, and having less healthy children due to lower MHC heterozygosity (Havlicek and Roberts 2009). Cumulatively, these effects could have real impact on the quality of spousal relationships (Roberts 2010).

It is not unreasonable to suspect that such effects could also influence rates of intimate partner violence. This is the most common cause of nonfatal injury among women (Kyriacou et al. 1999) and accounts for more than a third of women murdered in the US (Kellermann and Mercy 1992). Furthermore, ex-partners are a key

risk factor, which could further emphasise the risk for pill users if the behavioural effects of pill use ultimately influence rates of marital breakdown. (Roberts 2010)

In short, those couples close in MHC genes will have less sex and more infidelity. The increased numbers of MHC-similar pairings through the influence of the pill with their attendant conflicts caused by the females' more common rejection of sex and "extrapair" bondings have resulted not only in injury but also in death by their partners. Several studies have reported that the leading cause of death in pregnant women is homicide by "intimate partners." A 2001 study published by the *Journal of the American Medical Association* said 20 percent of Maryland women who died during pregnancy were murdered (Horon and Cheng 2001). Researchers found the same trend in New York from 1987 to 1991 and in the Chicago area from 1986 to 1989. According to the Centers for Disease Control (CDC), approximately 324,000 pregnant women are hurt by an intimate partner or former partner each year.

MHC genes are those genes that determine the favorability of donors for organ transplants. The closer a donor matches the recipient, the more likely a favorable outcome. Women choosing men who are similar to them in those genes can be choosing those men more closely related to them genetically. It is thought that a woman who is already pregnant or in a pregnancy-like state induced by the pill would prefer close relatives for support while those women who are not pregnant would seek men who are genetically different and not closely related as possible mates. Preferring men closely related in the MHC genes would likely tend to select for the kind of illness prevalent in communities that closely intermarry.

Pheromones Affect Human Behavior and Are Influenced by the Pill

Pheromones are chemical compounds produced and secreted that influence the behavior and development of members of their own species. In animals, there is a vomeronasal organ (VNO) that detects pheromones. It was thought that humans may not have pheromones. Although the VNO exists in the human fetus, there is not such a clear organ in adult humans. However, there are pits in nasal mucosa that react to pheromones in mammals even when the VNO duct is obstructed. It is now believed that

humans can react to pheromones, and there is a rich and deep literature that supports this belief.

Information from Primate Studies

In 1999, anthropologist Dr. Lionel Tiger wrote a book titled *The Decline of Males* in which he examined how the pill brought about profound sociological changes in the relationship of men and women. In 1972, less than ten years after widespread use of the pill, when searching for the reasons for this sea change in male–female relationships, he and colleagues from Rutgers University and its medical school created an experiment which Tiger described in his book. They established a colony of macaque monkeys on an isolated island of Bermuda that closely mimicked their natural African environment. The first phase was a three-month period of documenting natural the behavior of the troop. The alpha male had three consorts with which he had regular sexual episodes. There were another five mature females and some immature females and adult males on the island.

After the first phase, five adult females were injected with Depo-Provera, a hormonal contraceptive that has an effect for three months. Two of the females who were injected were the alpha male's consorts. Although he was still interactive with them, he stopped sexual activity with them and replaced them with two hormone-free females for sexual episodes.

After three months when the effect of the Depo-Provera was dissipated, the other adult females were injected with Depo-Provera. This again caused the alpha male to reject the injected females, replacing them with noninjected ones.

The last three-month phase was observation when all adult females were injected with Depo-Provera. According to the book, this caused the adult alpha male to “attempt rape, masturbate and behave in a turbulent and confused manner. He approached females, inserted his fingers into their genitalia, stroked and sniffed them, however anxiously” (Tiger 1999, 39). He stopped having sexual intercourse. Once the Depo-Provera effects dissipated, behavior returned to baseline.

These studies on monkeys may not be completely applicable to human behavior. However, its implications may be responsible for a millennial generation adage, “I started on the Pill because I started having sex. Now I’m on the Pill, and I’m not having sex.” According to the CDC, 85 percent of all women of reproductive age have taken the pill. If women do feel they are perceived as less desirable by males

while on the pill, it may explain women's provocative fashions of lower necklines, higher hems, and more exposed skin as an antidote, a plea to be seen by males who are uninterested.

In his book, Dr. Tiger makes a very strong case that the pill caused a major shift in male–female sexual relations. Separating sexual from reproductive behavior has led to the restructuring of the human family from a male–female pair raising children to the growth of large numbers of single-parent families. These families are usually headed by females, with the attendant financial stresses and greater difficulties in providing for the care of children. Tiger bemoaned the fact that men who had largely used condoms before the pill were now unaware whether contraception was being used or not. He also wrote of the counterintuitive problems brought on by the pill such as an increase in unplanned pregnancies and induced abortions.

Human Observations

The first evidence of pheromone effects in humans was from an observation of Martha McClintock. McClintock first noticed menstrual synchrony in the 1970s when soon after moving into a female college dormitory, all the women had menstrual cycles that were near synchronous. Data addressing how one woman could affect the hormonal cycle of another were nonexistent. It was plausible that pheromones were responsible. There were data that these pheromones were associated with underarm secretions (Stern and McClintock 1998; Weller 1998). It was not until 1998 that a study showed that fluids collected from a donor woman's underarms, when applied to the upper lip of another female, could hasten or delay the recipient's menstrual period. The study by Kathleen Stern, PhD, and McClintock (1998) fell short of identifying the exact chemicals responsible, but even many skeptics agree that it provides strong evidence for the existence of human pheromones.

In 1999, Noam Sobel, PhD, used functional magnetic resonance imaging (MRI) to show that the human brain responded to androstadienone even when subjects were unable to smell it (Sobel et al. 1999). In 2001, Ivanka Savic, PhD, using Positive Emission Tomography (PET) scans and MRIs, reported that androstadienone and estratetraenol (male and female compounds, respectively) affected men and women's brains differently. The male compound stimulated hypothalamic activity only in women, while the female compound increased hypothalamic activity only in men (Savic 2001).

Since the hypothalamus influences the pituitary gland's release of hormones, it is in a key position to affect reproductive behavior. More recently, Savic found that the changes to the male compound in heterosexual women were more similar to homosexual men than lesbians who were similarly tested (Savic and Lindström 2008).

Almost twenty years later, there is a rich and deep area of research concerning human pheromones and unconscious social and psychological behavior. In a 2003 study, Seppo Kuukasjärvi et al. (2004) revealed that women were found to be most attractive to men at midcycle when they were fertile. There was no fluctuation of attractiveness in women on the pill. In 2007, psychologists from the University of New Mexico found that there was a connection between the menstrual cycles of female strippers and the tips they earned during a given night. Women in their fertile phase made higher tips than in their nonfertile phase (Miller et al. 2007).

There have been many studies confirming that women are most attractive in their fertile phase and that when they are not taking the pill find as most attractive men who are most dissimilar in their MHC genes, avoiding the problems of an MHC-similar pair with relational and reproductive problems as enumerated by S. Craig Roberts in the *British Medical Journal* (Roberts 2010). All of these studies make biological sense as increased sexual activity at the time of fertility would enhance chances of procreation.

The Abortifacient Effect of the Pill

It is inconceivable that *Humane vitae* would not have been embraced by clergy and faithful alike had they known that the pill was an abortifacient, that it is not a contraceptive which only prevents the ovum and sperm uniting to create another human being.

No doubt widespread access to the pill has resulted in increased sexual activity. Due to widespread popular belief in the complete efficacy of the pill, some of this increased activity occurs between men and women who would never consider nor want their partner as a parent for their child. However, according to the CDC (2011), 9 percent of women taking the pill will get pregnant each year, so we know that the pill does not always prevent conception. Increased sexual activity has led to increased conceptions and "unwanted" pregnancies causing increased demand for induced abortion. Women will still ovulate while on the pill. With progestin-only pills, ovulation occurs in approximately 50 percent of all cycles (Norgestrel 2017). Of the women who

do conceive while on the pill, some will unwittingly abort their pregnancy through use of the pill. The pill causes changes that interfere with successful implantation of the conceived embryo.

A 2000 paper authored by Australian pharmacist John Wilks (2000), "The Impact of the Pill on Implantation Factors-New Research Findings," makes a compelling argument that the pill interferes with the implantation of the human embryo. This article explains the requirement of a properly functioning interleukin (IL) system that plays a key role in the orientation of the embryo to the endometrial lining. The embryo must be properly oriented, like a space capsule to a docking station, in order to implant. High levels of estradiol, as found in the pill, interfere with the IL-1 system. IVF research showed a poor implantation rate of 8.5 percent when estradiol was high compared to 29.3 percent when estradiol levels were reduced (Simon et al., 1998). Normal endometrial thickness around ovulation is 10 mm. IVF studies have shown that 8.5 mm of thickness is needed for successful implantation. In one study, an estrogen-progestin pill produced a median endometrial thickness of 6.5 mm (Rabe, Nitsche, and Runnebaum 1997). The pill causes thinning of the endometrium that accounts for the "lighter" periods that women appreciate as a benefit of taking the pill. In his paper, Wilks (2000) also reviews the role of platelet-activating factor, integrins, and insulin-like growth factor in normal implantation and the mechanisms with which the pill interferes with those factors.

A Way Forward

NFP methods of fertility control can be used instead of the abortifacient and carcinogenic pill. Multiple studies have shown NFP to have the same efficacy as the pill (Warniment 2012; European Society for Human Reproduction and Embryology 2007). These methods rely upon a woman recognizing her own body's signs of fertility and communicating with her spouse to postpone or achieve pregnancy.

Some may argue that there is little difference between the use of the pill and the use of NFP as the end goal may be the same when postponing pregnancy. However, there is a very real difference. One involves taking a group 1 carcinogen and abortifacient that may be done without her partner's knowledge or consent; the other involves a natural awareness and communication with her partner. An analogy would be a woman who wants to lose excess weight. She could practice bulimia and eat her food only to vomit after eating or she could use self-

control and moderation in portion control of healthy foods.

There are many negative aspects of the pill concerning male–female relationships leading to social disruption of the male–female relationship and family. More importantly, is the clear abortifacient nature of the pill. Armed with this information, both the laity and the clergy could educate the faithful in the beauty and intelligence of *Humanae Vitae* so that it will be embraced today, as it should have been forty years ago.

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