

# A systemic explanation of denial of pregnancy fitting clinical observations and previous models

Patrick Sandoz

Institut FEMTO-ST, Université de Franche-Comté, UMR CNRS 6174, Besançon, France

## ABSTRACT

**Introduction:** The etiology of denial of pregnancy remains poorly understood. Neither necessary nor sufficient conditions can be synthesized from the risk factors identified from psychological analyses. Furthermore, the involvement of mother-fetus interactions cannot result only from psychology causes in the mother. Although instructive, the few available evolutionary and systemic explanations proposed remain insufficient. This article synthesizes and extends previous knowledge within a systemic model which is fully compatible with clinical observations.

**Methods:** A systemic intrapersonal conflict theory opposing primitive, evolutionary-inherited forces to psycho-sociological forces embodied across individual's childhood is developed.

**Results:** As members of a social species, human beings have a dual character of independent organisms and of social group members that is a source of customized intrapersonal conflicts. Authors explain denial of pregnancy as a *standby-in-tension* response to such an unresolved intrapersonal conflict between for- and against-pregnancy forces. As long as the woman's brain is unable to renounce one option in favor of the other, denial of pregnancy offers a standby-in-tension means to postpone conflict resolution. It may thus be considered as temporarily adaptive response.

**Conclusions:** The proposed systemic psycho-evolutionary explanation of denial of pregnancy is fully consistent with clinical observations. It brings into agreement the previously reported models with the advantage of being more synthetic. It is thus compatible with a large diversity of causative events in accordance with the actual life story of each woman concerned.

The systemic intrapersonal conflict approach developed herein provides a new means of investigating body-mind problems, especially pseudocyesis.

Keywords: Denial of pregnancy, Etiology, Intrapersonal conflicts, Standby-in-tension, Pseudocyesis

## INTRODUCTION

Denial of pregnancy is among the human dysfunctions which best illustrates the mysteries of mind-body interactions. While the signs of pregnancy are usually obvious to the concerned woman as well as to her surroundings after several weeks or months, some women remain unaware of their gravid state during an abnormally long period of time; sometimes up to a totally unexpected delivery (Brezinka et al., 1994; Wessel et al., 2002). In these cases, physiological manifestations of pregnancy can be misinterpreted, significantly reduced or even absent (Brezinka et al., 1994; Milstein and Milstein, 1983; Milden et al., 1985; Spielvogel and Hohener, 1995; Bascom, 1977; Lee et al., 2006; Spinelli, 2010). Even labor and delivery pain can be minimized (Spinelli, 2010). The denial may also extend to the patient's social network and may continue through the postpartum period (Finnegan et al., 1982; Saunders, 1989).

Denial of pregnancy is an obvious cause for lack or absence of prenatal care and thus puts both fetus and mother at risk; especially in the case of sudden unattended deliveries in inappropriate places (Wessel et al., 2003; Jenkins et al., 2011; Chaulet et al., 2013). Denial of pregnancy has to be clearly distinguished from concealed pregnancies in which women are aware of their gravid state but consciously keep it secret for diverse psychological reasons. Miller classified denial of pregnancy within three subtypes: affective, psychotic and pervasive (Miller, 2003). The absence of pregnancy signs occurs in the pervasive case in women with otherwise intact reality testing (Spielvogel and Hohener, 1995; Alby et al., 2014).

Denial of pregnancy remains diversely acknowledged by health professionals (Janati Idrissi et al., 2014) despite it was popularized by judicial affairs of neonaticide. The relationship between denial of

pregnancy and neonaticide is however highly asymmetrical. Whereas denial of pregnancy is a common accompaniment of neonaticide (Lee et al., 2006; Green and Manohar, 1990), neonaticide remains an exceptional outcome of denial of pregnancy (Brezinka et al., 1994; Navarro et al., 2011; Seigneurie and Limosin, 2012; Dayan and Bernard, 2013).

The etiology of denial of pregnancy remains mysterious even if, with the exception of del Giudice (Del Giudice, 2007), all authors converge to an unconscious defense mechanism involving some kind of psychological processes. Finnegan reports that 70 years ago, Deutsch suggested intuitively that denial of pregnancy serves to hide pregnancy to the woman's awareness because of internal conflicts (Finnegan et al., 1982). Since that time a significant amount of clinical data has been accumulated from systematic surveys and case reports (Jenkins et al., 2011). A list of risk factors has thus been identified and the most common causes claimed for non-psychotic denials of pregnancy include: low socio-educational status (Dayan and Bernard, 2013; Struye et al., 2013); lack of social support (Dayan and Bernard, 2013); the woman's own maternal deprivation (Spielvogel and Hohener, 1995); acute or chronic psychosocial stressors (Brezinka et al., 1994); a history of emotional, physical or sexual abuse in childhood (Dayan and Bernard, 2013); conflicting or repressed sexuality (Bonnet, 1993; Spielvogel and Hohener, 1995; Friedman et al., 2007); rejection of the fetus (Spielvogel and Hohener, 1995); anger toward the baby's father (Spielvogel and Hohener, 1995); fear of abandonment (Friedman et al., 2007); memory or anticipation of custody loss (Miller, 2003; Friedman et al., 2007). Denial was also observed in women that respond to none of these conditions (Jenkins et al., 2011). This diversity of bibliographic accounts support Wessel et al.'s statement: "*Sociodemographic maternal parameters describe, to a certain extent, some risk factor, which, however, are insufficient for the identification of the majority of women with pregnancy denial. Rather, our findings highlight the heterogeneity of affected women, and clearly show that we are unable to describe an 'unambiguous' typology of a pregnancy denier*" (Wessel et al., 2007).

Del Giudice opposes well-established evolutionary biology knowledge to these psychological explanations of denial of pregnancy (Del Giudice, 2007). A major argument is that pregnancy is not a mother-driven process but involves in-depth mother-fetus interactions subject to parent-offspring conflicts (Trivers, 1974). Evidence for these interactions can be found in the effects of placental hormones on the mother's physiology (Davis, 2004). Del Giudice thus addresses denial of pregnancy from a parent-offspring conflict perspective. He claims that as a conflict outcome, denial of pregnancy is beneficial to the mother and detrimental to the fetus. From the consideration of several costs and conflict sources, he raises three explanatory hypotheses for denial of pregnancy: *i*) nonadaptive byproduct of conflict resolution; *ii*) missed abortion and *iii*) forced cooperation in a threatening environment.

Despite a worthwhile expansion to evolutionary biology, Del Giudice's contribution does not answer the question as he acknowledges himself. Two major issues with Del Giudice's work can be noted: *i*) He considers the mother as a non-conflicting entity. Only rational social costs are considered and human subjectivity is not taken into account. *ii*) The evolutionary approach seems unable to explain some aspects of denial of pregnancy; especially changes triggered by denial disclosure (Wessel and Endrikat, 2005). Indeed the announcement of her pregnancy to a woman denying a six, seven or eight month pregnancy usually triggers drastic changes: sudden appearance of abdominal swelling, weight gain, perception of fetal movements, breast enlargement... (Bascom, 1977; Dayan and Bernard, 2013). Sandoz provided an in-depth analysis of the silhouette effect of denial disclosure; *i.e.* the sudden transformation of the woman's body shape triggered by pregnancy announcement (Sandoz, 2011). Such clinical observations demonstrate the ability of the woman's body to function normally and that denial results therefore from a "*software*" problem. Psychological explanations of such sudden changes in the woman's shape and perceptions are much more plausible than evolutionary ones.

As intuited by Deutsch, the only systemic model previously reported explains denial of pregnancy as a coherent response to subconscious paradoxical realities with the aim to hide the gravid state to the woman's awareness (Sandoz, 2011). Despite being consistent with clinical observations, the intimate processes of the psychic mechanisms involved in this explanation are not elucidated. The proposed paper addresses this issue by developing an intrapersonal conflict explanation grounded in the combination of psycho-sociological and evolutionary knowledge. Conflict theory, commonly developed in evolutionary biology at the genetic level (Dawkins, 2006), is transposed to the highest levels of human organization; *i.e.* the individual and social levels of organization. The existence of intrapersonal conflicts thus appears as a natural consequence of the highly sophisticate pattern of social interaction characteristic of the human species. Denial of pregnancy is then discussed as a subconscious response to an unresolved intrapersonal

conflict about procreation.

## METHODS

The human species is a recent result of the billion year evolution of life. Along this slow process, the living structures that appeared first constituted raw material favoring the emergence of new creatures of higher complexity; among which the best adapted to current life conditions were favored by natural selection. As Jacob says: “*Novelty comes from previously unseen association of old material. To create is to recombine*” (Jacob, 1977). Eukaryotic cells thus arose from several prokaryotic ancestors and multicellular organisms arose from single-celled ancestors. The human species is no exception as confirmed by the composition of the human genome (Griffiths et al., 2001).

This evolutionary process of creating new living systems from already existing constituents generates conflicts since previously independent structures become dependent on each other despite potentially divergent interests. Such conflicts of interest exist at different levels of organization and were explored for a long time; for instance by means of game theory.

Conflict theories focus however on the genetic level since evolutionary-biology theories consider gene replication criteria rather than individual survival and well-being criteria (Dawkins, 2006). Diverse works addressed the possibility of genetic conflicts in different species and configurations, for instance inside the genome of a single individual (Hurst, 1992). Conflicts between parents and offspring were also investigated (Trivers, 1974), including during pregnancy (Haig, 1996).

In social species, individuals are submitted to diverse social forces, especially in the case of humans that present the most sophisticated pattern of social interaction. Conflict theories were thus successfully applied to individual *versus* group conflicts of interest with the aim of understanding social behaviors and identifying the selective advantages provided by diverse competition or cooperation strategies. However, these studies do not distinguish between the different sources of social forces and the possibility of intrapersonal conflicts was barely considered (Haig, 2006).

From our point of view, the understanding of the human functioning requires acknowledging that social forces are distributed within two clearly different classes; *i.e.* external and internal. *i) External:* Damasio talks of sociocultural homeostasis when considering the whole set of sociocultural rules and systems (judiciary, political, economic...) to which individuals are submitted in our societies (Damasio, 2012). This corresponds to a centralized level of social regulation that applies to individuals from outside. *ii) Internal:* A decentralized form of social regulation also exists in humans. It takes place in each individual’s brain that elaborates during childhood a customized set of rights and duties toward himself and his fellows (Swain et al., 2007; Fonagy et al., 2007).

Let us consider in more details the consequences of postnatal development in the human brain that requires caregivers’ stimuli and occurs under the influence of a customized sociocultural environment. In accordance with Mahler’s description of the psychological birth of the human child, the newborn’s separation-individuation process is progressive, spreading over several years, and starts only 4 or 5 months after birth for its first sub-phase (Mahler et al., 1975). The child’s relationship with his surroundings, especially with his mother as the main attachment figure, provides his first social experiences from which he builds his own representations of what he can expect from others and how to best answer their expectations (Swain et al., 2007). Brain development thus allows the acquisition of customized knowledge about the world through interactions with his caregivers (Fonagy et al., 2007). M. Small even asserts: “*Societies raise their children so that they grow into adults who behave in a way valued by that society*” (cited by Sapolsky (2004)). The customized socio-cultural knowledge thus accumulated during childhood is structurally “*written*” in the synaptic networks that are established and reinforced continuously following selective processes (Edelman, 1992).

As a result of such a long brain development process intertwining genetic data with unshared life experiences and sociocultural environment, each human being elaborates his own social identity; *i.e.* subjective representations of himself as a social member. The latter constitute thus a customized set of embodied psychosociological forces that act mainly at a subconscious level and participate in determining his actual functioning as a person.

A major conclusion of this application of conflict theory to the individual and social levels of human organization is that human beings present a dual character: *i)* From a physiological perspective, our body is autonomous. We are independent organisms like our solitary animal ancestors that always interact with environment to the best of their individual interests. *ii)* From a psycho-sociological perspective, we

are connected social members with an embodied and customized set of subjective representations and expectations that determine our actual interests as a person. For the sake of conciseness, later on this dual character intrinsic to the human condition will be referred through the respective denominations of “solitary forces” and “social forces”.

This solitary *versus* social duality emerged progressively across evolution and it affects the human brain that results from the same evolution process. The ability of our brain to deal adaptively with this duality is thus an associated result of life evolution and natural selection. Indeed, our brain commands all aspects of our lives. The human brain has thus the dual function of controlling the solitary and social human characters accordingly. The interdependence of the different brain areas, especially the ANS and the CNS (Damasio, 2012), confirms this view. This dual function of the human brain is also consistent with the “*Social Brain Hypothesis*” that attributes the large brain volume of primates, especially that of the neocortex, to the wide social abilities that it provides (Dunbar, 1998).

Let us consider denial of pregnancy from the perspective of this solitary *versus* social duality.

## RESULTS

Considered within this solitary *versus* social duality framework, the elucidation of the etiology of denial of pregnancy is straightforward. Let us consider the intrapersonal conflict raised by the following appraisals of the gravid state by solitary and social forces respectively: *i*) For solitary forces pregnancy exists and responds satisfactorily to evolutionary-inherited procreation needs. *ii*) For social forces pregnancy is not an option. Such a possibility threatens the subjective woman’s identity and triggers an intense stress.

In such a configuration, the woman’s brain is challenged by opposite forces and has to elicit the most appropriate outcome. The latter depends on the actual proportion between solitary and social forces as subconsciously appraised. A social option would trigger abortion with the solitary cost of a missed reproductive opportunity. A solitary option would infringe the subjective pregnancy ban and make the gravid state conscious with the social cost of psychological disturbances. Both options would result in the woman’s normal functioning.

Let us now consider a deadlock configuration in which neither the solitary nor the social costs are acceptable. In such an inextricable situation, the brain remains unable to solve the conflict despite the burden produced by the conflicting forces. The value of denial of pregnancy becomes obvious in this context since it provides an unconventional way to comply with the deadlock and to postpone conflict resolution. In this perspective, denial of pregnancy results from a subconscious holding program aimed to gain some extra-time to solve the problem. Its function is to temporarily comply with respectively solitary and social demands that are actually incompatible with each other: to continue the pregnancy without being pregnant. The etiology of denial of pregnancy is then elucidated as: **A *standby-in-tension* response to an unresolved intrapersonal conflict opposing pro- and against-pregnancy forces.** The latter are associated with the dual character of the human condition, namely an independent organism and a social member.

It must be noticed that during the early weeks of pregnancy the physiological cost of denial of pregnancy is low. Therefore, within a timescale of a few hours or days, denial of pregnancy can be seen as adaptive. The actual problem appears when denial of pregnancy extends over several weeks or months because of the persistence of the intrapersonal conflict without the emergence of a more appropriate outcome. In such protracted circumstances, the physiological cost of denial of pregnancy increases day after day, especially in the pervasive case that involves the reduction or suppression of normal pregnancy symptoms. As suggested by Sandoz, such a conspicuous absence of pregnancy signs results from the brain ability to fulfill the imperative need to control pregnancy beyond the pregnant woman’s awareness (Sandoz, 2011). The existence of such a well-structured “*software*” program is consistent with diverse bibliographic accounts from Milden: “*Is physiology compliant with a powerful psychological need not to know?*” (Milden et al., 1985) or Gershow: “*The need for denial may be so great as to influence the biologic manifestations of pregnancy*” (cited by Finnegan et al. (1982).

We also note that this evolutionary-based explanation of denial of pregnancy is consistent with the psycho-pathological concept of dissociation. The conflict between the solitary and social forces can indeed be seen as an internal cause for a dissociation state resulting from the impossible combination of the subjective woman’s identity that prohibits procreation with the ongoing pregnancy.

This systemic elucidation of denial of pregnancy also sheds a new light on the denial disclosure resulting either from pregnancy announcement or from unexpected delivery. Two major consequences of denial disclosure can indeed be expected: *i*) The sudden release of the previously subconscious internal tension produced by the conflicting forces that should induce a stress discharge associated with the transgression of the subjective pregnancy ban. This may explain the transient state of dissociation frequently reported at time of unexpected deliveries. *ii*) The costly program aimed to hide temporarily the gravid state to the woman's awareness loses its purpose. It can thus be switched off in favor of a normal course of pregnancy. This may explain the fast transformation of the pregnant woman silhouette or her ability to perceive fetus movements as reported in many cases after denial disclosure (Bascom, 1977; Dayan and Bernard, 2013).

**Remarks:** A *standby-in-tension* condition was already described by Laborit in the concept of action inhibition (or behavioural inhibition) (Laborit, 1979, 1991). The conflict raised by the contradictory pregnancy appraisals could also be described by means of paradoxical injunctions or double bind concepts as introduced by Bateson in his theory of schizophrenia (Bateson et al., 1956).

## DISCUSSION

The etiology of denial of pregnancy proposed in this synthesis is fully compatible with the diversity of clinical observations and the concerned women's characteristics reported in the literature. Furthermore it completes and brings into agreement the previously attempted explanations. The improvements and refinements achieved here are summarized in the following paragraphs in reference to earlier psychological, evolutionary and systemic studies.

**Psychological clarifications:** The etiology of denial of pregnancy is now synthesized within a generic intrapersonal conflict formulation. The explanation obtained presents the advantage of complying with a huge diversity of actual causative events as expected because of interindividual variability in life experiences and sensibility. In some women the subjective and subconscious prohibition of pregnancy may indeed result from causes such as abuses during childhood, lack of social support, repressed sexuality, fear of abandonment, etc (Brezinka et al., 1994; Spielvogel and Hohener, 1995; Miller, 2003; Dayan and Bernard, 2013; Friedman et al., 2007). Such factors constitute however neither necessary nor sufficient conditions for denying pregnancy as concluded by Wessel et al. (2007). In fact such causative events are only risk factors for the elaboration of the subconscious pregnancy ban. The ability of the latter to oppose primitive pro-pregnancy forces and thus to trigger an intrapersonal conflict was not elucidated. The proposed synthesis thus refines the psychological models reported in literature and brings them into accord.

**Evolutionary clarifications:** The synthesized model proposed allows del Giudice's explanations and hypotheses to be updated as follows: *i*) Del Giudice claims that denial is beneficial to the mother and detrimental to the fetus. Our view suggests that denial of pregnancy provides indeed an answer to a mother's barrier; *i.e.* her subjective pregnancy prohibition. Denial of pregnancy induces however significant physiological costs, especially in the pervasive case, that are not considered by del Giudice. Because of such additional costs a normal pregnancy remains more adaptive than a denied one, even from the restrictive perspective of the mother's interests only. *ii*) Del Giudice's first hypothesis is that denial of pregnancy is a nonadaptive byproduct of conflict resolution. We claim firstly that the intrapersonal conflict remains unresolved and constitutes a continuing source of internal tension. We argue secondly that from the subjective perspective of the concerned women's subconscious mind, denial of pregnancy can be seen temporarily as adaptive, especially during the early weeks of pregnancy. *iii*) Del Giudice's second hypothesis is that denial of pregnancy results from missed abortion. In our view, abortion is not missed but forbidden by solitary forces. *iv*) Del Giudice's third hypothesis is that denial of pregnancy results from forced cooperation in a threatening environment. We fully agree with this proposal and fetus cooperation may indeed be necessary to hide pregnancy to the mother's awareness, especially in the pervasive case.

**Systemic clarifications:** The systemic model proposed by Sandoz (2011) was lacking biological background to support the "software" program claimed. The synthesis proposed here corrects this deficiency by providing the necessary combination of psycho-sociological, evolutionary and conflict theory developments. Furthermore this multidisciplinary approach provides insight into how elementary

physiological processes can be involved in this systemic dysfunction. For instance, the effects of placental hormones on the mother's physiology are indeed thought to take part in the observed reduction of vomiting and nausea symptoms (Brezinka et al., 1994; Davis, 2004). Such a contribution of low-level physiological processes could result directly from the forced fetus-mother cooperation claimed by del Giudice.

Finally, achieving a satisfactory etiology of denial of pregnancy should help in defining what can be expected or done from the perspectives of prevention, clinical practice and psychotherapy. On this point, the main observation confirms Wessel's statement that no unambiguous pregnancy denial profile can be elaborated from observable risk factors only. Instead denial of pregnancy results from a conflicting combination of causative events or conditions with the customized individual's sensitivity. As Sapolsky (2004) says: "*It's not just the external reality; it's the meaning you attach to it*".

This clarification may also be very useful for forensic purposes, *i.e.* the proper understanding of the psychological state and functioning of women who fail to provide adequate care to their own newborn after experiencing an unexpected delivery. The sudden tension release triggered by denial disclosure at time of an unexpected delivery may explain some irrational behaviors in otherwise normal reality testing women.

As noted previously by Mildren and Kenner, pseudocyesis and denial of pregnancy can be seen as inverse dysfunctions (Mildren et al., 1985; Kenner and Nicolson, 2015). The intrapersonal conflict perspective developed here for denial of pregnancy could apply to pseudocyesis by considering conflicting forces directed in opposite directions; *i.e.* social forces demanding pregnancy opposed to solitary forces threatened by such a possibility. In both syndromes, subconscious representations seem to be strong enough to deviate complex physiological processes and thus to induce "*software-caused*" dysfunctions. The complete elucidation of the mind-body mechanisms responsible for these women's dysfunctions may provide insights into the etiology of diverse human pathologies.

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