

## Cérebros femininos vs. cérebros masculinos

### Female brains vs. male brains

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• This article has been published in English in *International Journal of Psychotherapy*, Vol. 8, Nr 2 (July 2003). and a *lecture* has been given - in a more or less developed form - in : Belgrade, Bucarest, Budapest, Bruxelles, Cannes, Cracovie, Fort-de-France, Frankfurt, Kiev, Lviv, Malte, Marrakech, Montalivet, Moscou, Orléans, Paris, Rome, San Francisco, St Petersburg, Strasburg, Tokyo, Vladivostok.

## RESUMO

Este artigo oferece aos psicoterapeutas um caminho para lidar com os diferentes gêneros com base nas muitas diferenças que realmente existem na forma pela qual trabalham os cérebros de cada um deles. Pesquisadores têm concordado que homens e mulheres desenvolveram durante a evolução da espécie, características e habilidade que deram a cada gênero o que era necessário a sobrevivência. O artigo também propõe que, de acordo com neurocientistas, nossa personalidade é determinada por fatores hereditários, pela vida intra uterina e pelo que é adquirido do ambiente após o nascimento.

Junto a esses fatores, temos os hormônios (Testosterona e Estrogênio) estimulando comportamentos masculinos ou femininos, dependendo da reação que causam nos respectivos corpos. O artigo também nos alerta que a identidade de gênero é diferente da identidade sexual.

Para concluir o artigo propõe algumas aplicações do que foi levantado em psicoterapia, encorajando aos terapeutas a olharem com cuidado para as peculiaridades de cada gênero. Para terminar lembra a todos os leitores que nossa percepção do mundo é muito diferente, mas prazerosamente complementar.

**Palavra-chave :** Cérebro, Homens, Mulheres, Masculino, Feminino, Diferentes, Espécies, Orientação, Neurocientistas, Hereditariedade, Personalidades, Hormônios, Testosterona, Estrógenos, Psicoterapia, Psicoterapeuta.

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## ABSTRACT

This brief offer to psychotherapists a way to deal with the different gender based on the very real differences about how their brains work. Researches now agree that men and women developed during the specie evolution characteristics and skills, providing to which gender whatever was needed to the surveillance.

The brief also proposes that, according to neuroscientists our personality is determined by heredity, intra-uterine life and what is acquired from the environmental after birth. Besides there are the hormones (Testosterone and Estrogens) stimulating masculine and feminine behavior depending on the reactions it causes into the respective bodies. But it also warns that gender identity is different from sexual identity.

To conclude it proposes some applications in psychotherapy encouraging the therapists to look carefully to the peculiarities of which gender. To finished this brief reminds every reader that our perception of the world is very different, but pleasantly complementary.

**Keywords :** Brains, Men, Women, Masculine, Feminine, Different, Species, Orientation, Neuroscientists, Heredity, Personalities, Hormones, Testosterone, Estrogens, Psychotherapy, Psychotherapist.

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## Two lectures in the same time

You're lucky to-day: you'll have *two lectures*,

And — as I have a short time — I'll give these *two lectures... at the same time!*

One for women; another one for men!

In fact, I already began: *right now, men and women haven't heard the same message!*

## Hearing with both hemispheres

For instance — *in average, of course* (with many individual variations)<sup>2</sup> — *women hear me twice as loud* (2,3 more loud) as men. So, they hear me “shouting” (and they think I'm angry) while men have the feeling I'm speaking in a confidential manner, with some kind of complicity...

The women hear me with *both their hemispheres* (left brain *and* right brain), while men listen to me with mostly their *left* brain — verbal, logic...and consequently with criticism! Women have more links between the two hemispheres (through *corpus callosum*)<sup>3</sup> and my speech is colored with emotions, perceived *subjectively* through their wishes and their fears, through their ethical or social values (like feminism!). They hear *what* I'm saying, but mostly *how* I do it, sensitive to the tune of my voice, to the rhythm of my breath, to my supposed feelings...

Of course, this predominance of *audition* and *subjective hearing* is only a detail, but its main interest is that we can observe it *here and now*.

## Two different species

To speak frankly, we belong to *two different “species”*. In our times, we just finish the deciphering of the *human genome* and you perhaps know that it's proofed that humans and monkeys have about the *same genetic inheritance*: common at a rate of 98,4 % — which means only *1,6 % of differences* between men and monkeys (male

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<sup>2</sup> It's estimated that 20 % of men have a *feminine* brain and 10 % of women have a *masculine* brain.

<sup>3</sup> It allows women to have several tasks at one time.

monkeys!)... while there is 5 % difference between men and women! So, a human male is physiologically more near to a monkey than to a woman!... And, as you already guessed it, woman is near to a female monkey!

Of course, such provocative and *quantitative* calculations neglect the *qualitative* aspect: for instance, the genes which contribute to development of language, art, philosophy, etc. but they underline the big *gap between genders* — within all animal species, including human species. This *gender identity* is different from sexual identity.

Usually, I teach to my students the *impact of brain functioning on psychotherapy*, during a *four days* workshop (with some demonstrations)<sup>4</sup>, but to-day, I've only some minutes to mention it rapidly, and I'll only give a *listing* of about *twenty main differences* between men and women.

### **Right brain is masculine**

All researchers of all countries agree now to consider that :

- the *left brain* is more developed among *women* ;
- the *right brain* (the so-called “emotional brain”) is more developed among *men* — contrary to what is often thought by general public (and sometimes even by psychotherapists!). It's under the influence of sexual hormones and neurotransmitters (*testosterone*, etc.).

So, the woman is more involved in *verbal sharing and communication*, while the man is more prepared for *action and competition*.

Already, in the kindergarten, during 50 minutes of a class, small girls talk during 15 minutes and boys, only 4 minutes (four times less). Boys are rowdy 5 minutes; they fight *10 times more often* than the girls : 30 seconds, in average. When they are 9 years old, girls are 18 months ahead. When they are adults, women talk in average 20 minutes at each phone call, while men speak only 6 minutes, just to give an ur-

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<sup>4</sup> During this kind of seminars, I summarize *40 000 pages* of scientific readings on this subject, in French and English (which means about 150 specialized books and the same amount of articles). See a resume of this topic in both my books (chapters on *Brain* and *Dreams*).

gent information! The woman needs to *share* her ideas, feelings, emotions, while the man withdraw and *control* his emotions and try to find a *solution*. He interrupts his wife to propose a solution... and the wife don't feel to be listened to! In fact, *men are more emotional* than women, but *they don't express* their emotions and this point must never be neglected in conjugal life... and during psychotherapy.

### **Orientation**

- Woman is concerned by *Time* (left brain);

Man is concerned by *Space* (right brain): the advantage of men in three dimensional spatial rotation tests is massive, since the childhood (Kimura, 2000).

- The woman finds her way with *concrete markers*: the advantage of women in memorization or denomination of concrete objects is massive.

The man finds his way through an *abstract direction*: he is able to improvise a short cut to reach his car or his hotel.

### **Sense organs**

Globally speaking, the woman is more *sensitive*<sup>5</sup>:

- Her *hearing* is more developed: hence the importance of sweet words, of voice tune, of music;
- Her *sense of touch* is *much more* developed: she has 10 times more skin receptors, sensitive to contact; *oxytocin* and *prolactin* (hormones of *attachment* and cuddle) increase her need to touch and to be touched;
- Her *olfaction* (smell) is much more sharp: 100 time more at certain periods of her menstrual cycle!
- Her *Vomero Nasal Organ* (VNO), the real "6<sup>th</sup> sense" (*chemical* and *relational* organ) seems to be more developed and perceives sharper the *pheromones* — which

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<sup>5</sup> More "sensitive" (sense organs), but not more "emotional".

express different kinds of emotions: sexual desire, anger, fear, sadness... Perhaps it's what is called "*intuition*"?

- As for *sight*, it's more developed among men, and *eroticized*: hence their interest and excitement for clothes, make-up, jewellery, nakedness, pornographic magazines... However, women have a better *visual memory* (for recognizing *faces*, tidying of objects...).

### **Why such differences? The Theory of Evolution**

The researchers explain these important *biological and fundamental differences* between men and women by the *natural selection* through more than one million years of evolution of the human species<sup>6</sup>. Such adaptative evolution is supposed to have shaped our brain and sense organs through the combined action of *hormones and neurotransmitters*:

- Men adapted to *hunting* on large space and distance (and also to struggle and *war* between tribes). Usually they had to *silently* pursue game (animals), sometimes during several days, and then to find back their cavern (sense of orientation). Very *few verbal sharing* (it has been estimated that a prehistoric man met not more than 150 persons *during his whole life*).

- During the same period, women's brain adapted to *children's breeding* and education — which implies *verbal sharing* in the limited space of the cave.

So, on a *biological* level, men are programmed for *competition*, while women are programmed for *cooperation*.

And so, everybody can see that *biologically, psychotherapy is a women business!*<sup>7</sup>

These predispositions seem to be linked to *biology* (hormones and neurotransmitters). They are constituted during the *very first weeks of intra-uterine life* and seem to be very few influenced by education and culture.

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<sup>6</sup> On the face of a clock, 10 000 years of civilization, out of one million years of human evolution, represent about half a minute.

<sup>7</sup> See KRAUSE-GIRTH Cornelia (2001). *The Position of Women in Psychotherapy*.

## Nature and nurture

To-day, neuroscientists and geneticists seem to consider that our personality is determined:

- for about 1/3, by heredity: chromosomes from the nucleus of our cells and *mitochondrial* DNA heredity, coming from the *mother*;
- for about 1/3, by intra-uterine life: during the *first weeks after conception*; the embryo (fetus) is *feminine* (Durdeen-Smith & Desimone, 1983; Badinter, 1992; Magre & al.; 2001) and *masculinity* is a slow and hard hormonal and educational *conquest*. So, the girl is not a boy who *lost* his penis (Freud's hypothesis), but the boy is a girl who *won (gained)* a penis. The psychoanalytical so-called *envy or need for penis* is an hypothesis which has never been controlled. Among *transsexual* people, one can find five times more men wishing to become a women than women wishing to become a man...

During the war, two times more *male homosexuals* were born, probably because of mother's stress, disturbing her hormonal balance (Durdeen-Smith & Desimone, 1983; Le Vay, 1993).

These two *hereditary and congenital* parts seem to be important: for instance, if a male twin is homosexual, his *identical* twin is also homosexual in 50 to 65 % of the cases<sup>8</sup>; if he is only a *fraternal* twin, it's the case in 25 to 30 %, which means two times less — but still 5 times more than in the general population! Homosexuality could be predicted since the age of 1 or 2 years, in many cases (Le Vay, 1993).

- for about 1/3, acquired after birth: cultural bath or steep, education, training, occasional circumstances... or psychotherapy!.

In a more general approach, the global correlation between personalities is estimated<sup>9</sup> at:

- 50 % between *identical* twins (heredity)<sup>10</sup>

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<sup>8</sup> According to different studies.

<sup>9</sup> PLOMIN R. & al. (1997). *Behavioral Genetics*. New York : Freean & Company.

- 25 % between *fraternal* twins (hormonal impregnation during intra-uterine life)
- 10 % between *brothers and sisters* (education)
- 0 % between *strangers*.

These *three thirds* (heredity, acquired *in utero*, acquired during life) have been found — in different proportions — in many fields of abilities: intelligence, music, sports, and even optimism<sup>11</sup>.

Depending on the amount of pessimistic or optimistic genes you've inherited, you could formulate this researches in different manners:

- “Our personality is *predetermined* — since our *birth* — at about 2/3”.
- “Our personality is *constructed* — since our *conception* — at about 2/3”.

## Hormones

When you put a ball on the earth, boys give it a kick; girls take the ball and clasp it to their heart. It seems to be independent of their education and culture, and directly related to their hormones.

Testosterone is the hormone of *desire, sexuality and aggression*. It could be called the “hormone of *conquest*” (military or sexual!). It develops<sup>12</sup>:

- *Strength* of muscles (40 % muscles for men; 23 % for women);
- *Speed* (reactions) and *impatience* (92 % of drivers who hoot at a traffic light are men!);
- *Aggression, competition, domination* (the dominant male maintains the quality of the species);

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<sup>10</sup> Which leaves 50 % freedom !

<sup>11</sup> LYKKEN & TELLEGEN (Minnesota University).

<sup>12</sup> When in *optimal* concentration: not too weak, not too high (Kimura, 1999).



- *Endurance, tenacity*;
- *Healing of wounds*;
- *Beard and baldness* ;
- *Vision* (far away, as “teleobjective”);
- *Right side* of the body and fingerprints (Kimura, 1999);
- *Throwing* with precision;
- *Orientation*;
- Attraction by a *young female* (able to give birth).

Influence of oestrogens:

- *Dexterity*, separate movements of fingers (Kimura, 1999);
- *Left side* of the body (and fingerprints);
- In average, 15 % fat for a man *and 25 % fat* for a woman (to protect and nourish her baby);
- *Hearing*: women perceive larger range of sounds, they sing in tune 6 times more often, they have a sharper recognition of sounds and music (to recognize their baby);
- *Smell*: their *olfaction* is 100 times stronger (at certain periods);
- Nomination of *colors*: the cones, which recognize colors, are situated on the X chromosome;
- *Verbal and visual memory* of the localization of things;
- Attraction by a *dominant male*, strong, able to protect her, experienced, socially recognized — which means generally *older*.

To conclude: some applications in Psychotherapy

The research in neurosciences confirms a lot of traditional knowledge. It helps the everyday work in *psychotherapy* and *counseling* (with individuals or *couples*):

And now, to finish this brief lecture, *some concrete examples* of the daily impact of neurosciences. They help the Psychotherapist to:

- *Listen a woman* with patience, until she is finished, without trying to “solve” her problem (which would be a *male* reaction, oriented toward *action*: instead of “mother” her, he becomes her “father”);
- Encourage the man *to speak more* and to *express and share* his emotions;
- Underline the *importance of sight for men* and of *hearing for women*, especially in *erotic* preliminary (music and sweet voice);
- *Stimulate the ill persons*: install patients near a window (open on the outside world) helps healing; stimulate the aged : passive retirement accelerates aging;
- Exploit, during psychotherapy, the intimate *links between sexuality and aggression* (both of them, controlled by *hypothalamus* and by *testosterone*);
- Be very prudent about “*memories*” of *early sexual abuse*: the memory of a scene, real or only seen *in imagination*, is treated in the *same* brain regions, and creates the same neurochemical reactions (*40 % of the “memories” are false memories, reconstructed* from conscious or unconscious fears or desires);
- Mobilize the *frontal lobes*, center of *responsibility* and autonomy (be able to say “no”) ; hence, richness of *paradoxical and provocative therapy*;

### **Some general remarks:**

- To *make love* accelerates healing of wounds (testosterone);
- *Body oriented* therapies help to mobilize neurological paths: movement > right brain > limbic brain > emotions > deep engrammation (encoding) of experience...

- A certain amount of *emotion helps memorization*; verbalization afterwards helps to *recall* in the future;
- *Long term memorization* occurs mostly during *dreams* (REM sleeping); hence, in case of mental *trauma* (accident, death of a close person, rape, terrorist attack, earthquake...), usefulness of a *debriefing before the first dream* time (“emergency Gestalt”, Ginger, 1987).
- Women commit ten times more suicide *attempts* (they *express* their emotions); men *succeed* in their suicide (*enactment*);
- Women *speak* without thinking; men *act* without thinking!
- Women who are not happy in their *relations*, have problems in their job;  
men who are not happy in their *job*, have problems in their relations;
- Women need *intimacy* to appreciate sexuality; men need *sexuality* to appreciate intimacy.

Finally, it's fundamental to *follow the research in genetics and neurosciences*<sup>13</sup> and update in permanence (*weekly*) our knowledge.

- It's probably not indifferent to work with a *male or female therapist*: it *does matter*<sup>14</sup>, it makes the difference! (Krause-Girth, 2001).
- Our perception of the world is very different... but pleasantly complementary!

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<sup>13</sup> The simplest way seems to consult on the *Internet* the research engine [www.google.com](http://www.google.com), the only way to read *recent* studies, not yet published or translated.

<sup>14</sup> Contrary to psychoanalytical hypothesis, *not confirmed* by different studies.

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