



# La linguistique darwinienne

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# Introduction

- Darwinien Vs. Darwiniste
  - Darwinien = corpus entier
  - Darwiniste = descendance avec modification *au moyen de la sélection naturelle*
    - Sélectionnisme: paradigme réaliste-cartésien
- Langage
  - Origine: Faculté Vs. Expressivité
  - Langage passionnel
    - Nécessité d'une éthologie darwinienne

# Ethologie darwinienne et champ de l'inutile

- Patrick Tort (2008):
  - effet réversif de l'évolution
  - Changement du mode opératoire de la sélection naturelle
  - Sélectionnisme confirmé

# Ethologie darwinienne et champ de l'inutile /2

## **Diachronie**

- *Transmutation Notebooks* avant septembre 1838
- Réaction organique à l'inorganique
- Lamarckisme darwinien
- Intelligence animale?

## **Synchronie**

- *Transmutation Notebooks* post-1838. *Origine des espèces*
- Réponse organique à l'organique
- Assimilation de la diachronie
- Insecte social comme paradigme

# Ethologie darwinienne et champ de l'inutile /3

## **Panchronie**

- *Transmutation Notebook, Sketch 1842, Essay 1844, Natural Selection, Filiation de l'homme, Expression des émotions*
- Conciliation diachronie et synchronie par modification de la cible de la sélection naturelle
- Champ de l'inutile
- Phylogénie humaine

« Thus a large yet undefined extension may safely be given to the direct and indirect results of natural selection; but I now admit, after reading the essay by Nägeli on plants, and the remarks by various authors with respect to animals, more especially those recently made by Professor Broca, that **in the earlier editions of my 'Origin of Species' I perhaps attributed too much to the action of natural selection or the survival of the fittest. I have altered the fifth edition of the 'Origin' so as to confine my remarks to adaptive changes of structure;** but I am convinced, from the light gained during even the last few years, that **very many structures which now appear to us useless, will hereafter be proved to be useful,** and will therefore come within the range of natural selection. Nevertheless, **I did not formerly consider sufficiently the existence of structures, which, as far as we can at present judge, are neither beneficial nor injurious; and this I believe to be one of the greatest oversights as yet detected in my work.** I may be permitted to say, as some excuse, that I had two distinct objects in view; firstly, to shew that species had not been separately created, and secondly, that natural selection had been the chief agent of change, though largely aided by the inherited effects of habit, and slightly by the direct action of the surrounding conditions. I was not, however, able to annul the influence of my former belief, then almost universal, that each species had been purposely created; and this led to my tacit assumption that every detail of structure, excepting rudiments, was of some special, though unrecognised, service. Any one with this assumption in his mind would naturally extend too far the action of natural selection, either during past or present times. Some of those who admit the principle of evolution, but reject natural selection, seem to forget, when criticising my book, that I had the above two objects in view; hence if I have erred in giving to natural selection great power, which I am very far from admitting, or in having exaggerated its power, which is in itself probable, I have at least, as I hope, done good service in aiding to overthrow the dogma of separate creations.

It is, as I can now see, probable that all organic beings, including man, possess **peculiarities of structure, which neither are now, nor were formerly of any service to them, and which, therefore, are of no physiological importance.** We know not what produces the numberless slight differences between the individuals of each species, for reversion only carries the problem a few steps backwards; but each peculiarity must have had its efficient cause. If these causes, whatever they may be, were to act more uniformly and energetically during a lengthened period (and against this no reason can be assigned), the result would probably be not a mere slight individual difference, but a well-marked and constant modification, though one of no physiological importance. **Changed structures, which are in no way beneficial, cannot be kept uniform through natural selection, though the injurious will be thus eliminated.** Uniformity of character would, however, naturally follow from the assumed uniformity of the exciting causes, and likewise from the free intercrossing of many individuals. During successive periods, the same organism might in this manner acquire successive modifications, which would be transmitted in a nearly uniform state as long as the exciting causes remained the same and there was free intercrossing. **With respect to the exciting causes we can only say, as when speaking of so-called spontaneous variations, that they relate much more closely to the constitution of the varying organism, than to the nature of the conditions to which it has been subjected.** » (*DM* : 61-62)

# Ethologie darwinienne et champ de l'inutile /4

- Limites opératoires de la sélection naturelle
- Nécessité d'un champ de l'inutile
- *Origine des espèces* comme manuel du transformisme
- Ultra-sélectivisme rejoint la théorie fixiste de la création indépendante des espèces
- Limitation du champ de l'inutile
- Dépassement par l'éthologie darwinienne



# Ethologie darwinienne et champ de l'inutile /5

## Sélection sexuelle

- Sélection sexuelle distincte de la sélection naturelle
- Adaptation n'est pas reproduction différentielle
- 2 principes: lutte entre les mâles et choix des femelles

## Deux questions

- comment déterminer s'il y a bel et bien des animaux dotés de pouvoirs mentaux suffisamment élevés pour atteindre un certain sens de l'esthétisme et pour permettre alors l'opérativité de la sélection sexuelle ?
- comment les comportements séducteurs se sont-ils réellement développés ?

**« With respect to female birds feeling a preference for particular males, we must bear in mind that we can judge of choice being exerted, only by analogy. If an inhabitant of another planet were to behold a number of young rustics at a fair courting a pretty girl, and quarrelling about her like birds at one of their places of assemblage, he would, by the eagerness of the wooers to please her and to display their finery, infer that she had the power of choice. Now with birds, the evidence stands thus; they have acute powers of observation, and they seem to have some taste for the beautiful both in colour and sound. It is certain that the females occasionally exhibit, from unknown causes, the strongest antipathies and preferences for particular males. When the sexes differ in colour or in other ornaments the males with rare exceptions are the more decorated, either permanently or temporarily during the breeding-season. They sedulously display their various ornaments, exert their voices, and perform strange antics in the presence of the females. Even well-armed males, who, it might be thought, would altogether depend for success on the law of battle, are in most cases highly ornamented; and their ornaments have been acquired at the expense of some loss of power. In other cases ornaments have been acquired, at the cost of increased risk from birds and beasts of prey. With various species many individuals of both sexes congregate at the same spot, and their courtship is a prolonged affair. There is even reason to suspect that the males and females within the same district do not always succeed in pleasing each other and pairing. »**

# Ethologie darwinienne et champ de l'inutile /6

- Vérité de sentiment
- Ethologie darwinienne anthropomorphique

**« He who thinks that he can safely gauge the discrimination and taste or the lower animals may deny that the female Argus pheasant can appreciate such refined beauty; but he will then be compelled to admit that the extraordinary attitudes assumed by the male during the act of courtship, by which the wonderful beauty of his plumage is fully displayed, are purposeless; and this is a conclusion which I for one will never admit. » (*DM* : 400)**

- Champ de l'inutile VS. Champ de l'inexplicable
- Preuves directes et indirectes

**« The various ornaments possessed by the males are certainly of the highest importance to them, for in some cases they have been acquired at the expense of greatly impeded powers of flight or of running.** The African night-jar (*Cosmetornis*), which during the pairing-season has one of its primary wing-feathers developed into a streamer of very great length, is thereby much retarded in its flight, although at other times remarkable for its swiftness. The "unwieldy size" of the secondary wing-feathers of the male Argus pheasant are said "almost entirely to deprive the bird of flight." The fine plumes of male birds of paradise trouble them during a high wind. The extremely long tail-feathers of the male widow-birds (*Vidua*) of Southern Africa render "their flight heavy;" but as soon as these are cast off they fly as well as the females. As birds always breed when food is abundant, the males probably do not suffer much inconvenience in searching for food from their impeded powers of movement; but there can hardly be a doubt that they must be much more liable to be struck down by birds of prey. Nor can we doubt that the long train of the peacock and the long tail and wing-feathers of the Argus pheasant must render them an easier prey to any prowling tiger-cat, than would otherwise be the case. Even the bright colours of many male birds cannot fail to make them conspicuous to their enemies of all kinds. Hence, as Mr. Gould has remarked, **it probably is that such birds are generally of a shy disposition, as if conscious that their beauty was a source of danger, and are much more difficult to discover or approach, than the sombre coloured and comparatively tame females, or than the young and as yet unadorned males.**

« It is a more curious fact that the males of some birds which are provided with special weapons for battle, and which in a state of nature are so pugnacious that they often kill each other, suffer from possessing certain ornaments. Cock-fighters trim the hackles and cut off the combs and gills of their cocks; and the birds are then said to be dubbed. An undubbed bird, as Mr. Tegetmeier insists, "is at a fearful disadvantage; the comb and gills offer an easy hold to his adversary's beak, and as a cock always strikes where he holds, when once he has seized his foe, he has him entirely in his power. Even supposing that the bird is not killed, the loss of blood suffered by an undubbed cock is much greater than that sustained by one that has been trimmed."<sup>94</sup> Young turkey-cocks in fighting always seize hold of each other's wattles; and I presume that the old birds fight in the same manner. It may perhaps be objected that the comb and wattles are not ornamental, and cannot be of service to the birds in this way; but even to our eyes, the beauty of the glossy black Spanish cock is much enhanced by his white face and crimson comb; and no one who has ever seen the splendid blue wattles of the male Tragopan pheasant, distended in courtship, can for a moment doubt that beauty is the object gained. **From the foregoing facts we clearly see that the plumes and other ornaments of the males must be of the highest importance to them; and we further see that beauty is even sometimes more important than success in battle.** » (*DM* : 403-404)

« We may now consider Mr. Wallace's arguments in regard to the sexual coloration of birds. He believes that the bright tints originally acquired through sexual selection by the males, would in all, or almost all cases, have been transmitted to the females, unless the transference had been checked through natural selection. I may here remind the reader that various facts opposed to this view have already been given under reptiles, amphibians, fishes, and lepidoptera. **Mr. Wallace rests his belief chiefly, but not exclusively, as we shall see in the next chapter, on the following statement, that when both sexes are coloured in a very conspicuous manner, the nest is of such a nature as to conceal the sitting bird; but when there is a marked contrast of colour between the sexes, the male being gay and the female dull-coloured, the nest is open and exposes the sitting bird to view. This coincidence, as far as it goes, certainly seems to favour the belief that the females which sit on open nests have been specially modified for the sake of protection; but we shall presently see that there is another and more probable explanation, namely, that conspicuous females have acquired the instinct of building domed nests oftener than dull-coloured birds.** Mr. Wallace admits that there are, as might have been expected, some exceptions to his two rules, but it is a question whether the exceptions are not so numerous as seriously to invalidate them. » (*DM* : 452-453)

# Ethologie darwinienne et champ de l'inutile /7

- Extension du champ de l'inutile: du non-adaptatif à l'anti-adaptatif
- Développement des pouvoirs mentaux
- Réaction panchronique: structure-relations-environnement
- Sélection naturelle comme simple couperet



« Sufficient facts have now been given to shew with what care male birds display their various charms, and this they do with the utmost skill. **Whilst preening their feathers, they have frequent opportunities for admiring themselves, and of studying how best to exhibit their beauty. But as all the males of the same species display themselves in exactly the same manner, it appears that actions, at first perhaps intentional, have become instinctive.** » (*DM* : 402)

« It has also been argued, that the song of the male cannot serve as a charm, because the males of certain species, for instance of the robin, sing during the autumn. But **nothing is more common than for animals to take pleasure in practising whatever instinct they follow at other times for some real good.** How often do we see birds which fly easily, gliding and sailing through the air obviously for pleasure? The cat plays with the captured mouse, and the cormorant with the captured fish. The weaver-bird (*Ploceus*), when confined in a cage, amuses itself by neatly weaving blades of grass between the wires of its cage. Birds which habitually fight during the breeding-season are generally ready to fight at all times; and the males of the capercailzie sometimes hold their *Balzen* or *eks* at the usual place of assemblage during the autumn.<sup>34</sup> Hence it is not at all surprising that male birds should continue singing for their own amusement after the season for courtship is over. »

« **But the males will sometimes display their ornaments, when not in the presence of the females, as occasionally occurs with grouse at their balz-places, and as may be noticed with the peacock; this latter bird, however, evidently wishes for a spectator of some kind, and, as I have often seen, will shew off his finery before poultry, or even pigs.** » (*DM* : 394)

# Ethologie darwinienne et champ de l'inutile /8

- Instinctivation par habitude plus que de l'instinct
- Expression de soi dans le cadre passionnel d'un appel à la relation
- Partage de l'amour de soi
- Animal de passions et non pas seulement de besoins
- Culture et civilisation?

# Ethologie darwinienne et champ de l'inutile /9

## **Expression des émotions**

- Perspective de la communauté de descendance
- Exclusion de la sélection naturelle qui déboucherait sur une théorie analogue à celle de la création indépendante des espèces
- Animal comme meilleur objet d'étude: non trompeur

« I. *The principle of serviceable associated Habits.*—Certain complex actions are of direct or indirect service under certain states of the mind, in order to relieve or gratify certain sensations, desires, &c .; and whenever the same state of mind is induced, however feebly, there is a tendency through the force of habit and association for the same movements to be performed, though they may not then be of the least use. Some actions ordinarily associated through habit with certain states of the mind may be partially repressed through the will, and in such cases the muscles which are least under the separate control of the will are the most liable still to act, causing movements which we recognise as expressive. In certain other cases the checking of one habitual movement requires other slight movements; and these are likewise expressive. »

- Interdépendance des causes de l'expression
- Actions volontaires (utiles ou non) automatisées et rendues ineptes
- Possibilité d'intervention sur l'expression

« II. *The principle of Antithesis.*—Certain states of the mind lead to certain habitual actions, which are of service, as under our first principle. Now when a directly opposite state of mind is induced, there is a strong and involuntary tendency to the performance of movements of a directly opposite nature, though these are of no use; and such movements are in some cases highly expressive. »

- L'inutile dans le champ de l'inutile
- Pure expression

« III. *The principle of actions due to the constitution of the Nervous System, independently from the first of the Will, and independently to a certain extent of Habit.*—When the sensorium is strongly excited, nerve-force is generated in excess, and is transmitted in certain definite directions, depending on the connection of the nerve-cells, and partly on habit: or the supply of nerve-force may, as it appears, be interrupted. Effects are thus produced which we recognise as expressive. This third principle may, for the sake of brevity, be called that of the direct action of the nervous system. » (*EE* : 29-30)

- Néo-lamarckisme
- Transmission

# Origine du langage

« *Language*.—This faculty has justly been considered as **one of the chief distinctions between man and the lower animals**. But man, as a highly competent judge, Archbishop Whately remarks, "is not the only animal that can make use of language to express what is passing in his mind, and can understand, more or less, what is so expressed by another." In Paraguay the *Cebus azaræ* when excited utters at least six distinct sounds, which excite in other monkeys similar emotions. The movements of the features and gestures of monkeys are understood by us, and they partly understand ours, as Rengger and others declare. It is a more remarkable fact that the dog, since being domesticated, has learnt to bark in at least four or five distinct tones. Although barking is a new art, no doubt the wild parent-species of the dog expressed their feelings by cries of various kinds. With the domesticated dog we have the bark of eagerness, as in the chase; that of anger, as well as growling; the yelp or howl of despair, as when shut up; the baying at night; the bark of joy, as when starting on a walk with his master; and the very distinct one of demand or supplication, as when wishing for a door or window to be opened. According to Houzeau, who paid particular attention to the subject, the domestic fowl utters at least a dozen significant sounds.

The habitual use of articulate language is, however, peculiar to man; but he uses, in common with the lower animals, inarticulate cries to express his meaning, aided by gestures and the movements of the muscles of the face. This especially holds good with the more simple and vivid feelings, which are but little connected with our higher intelligence. Our cries of pain, fear, surprise, anger, together with their appropriate actions, and the murmur of a mother to her beloved child, are more expressive than any words. That which distinguishes man from the lower animals is not the understanding of articulate sounds, for, as every one knows, dogs understand many words and sentences. In this respect they are at the same stage of development as infants, between the ages of ten and twelve months, who understand many words and short sentences, but cannot yet utter a single word. It is not the mere articulation which is our distinguishing character, for parrots and other birds possess this power. Nor is it the mere capacity of connecting definite sounds with definite ideas; for it is certain that some parrots, which have been taught to speak, connect unerringly words with things, and persons with events. **The lower animals differ from man solely in his almost infinitely larger power of associating together the most diversified sounds and ideas; and this obviously depends on the high development of his mental powers.** » (*DM* : 84-86)

# Origine du langage /2

- Communauté de descendance
- *Hiatus*: capacité sémiotique
- Articulation: linéarité Vs. Spontanéité



« As Horne Took, one of the founders of the noble science of philology, observes, **language is an art**, like brewing or baking; but writing would have been a better simile. **It certainly is not a true instinct, for every language has to be learnt. It differs, however, widely from all ordinary arts, for man has an instinctive tendency to speak**, as we see in the babble of our young children; whilst no child has an instinctive tendency to brew, bake, or write. Moreover, **no philologist now supposes that any language has been deliberately invented; it has been slowly and unconsciously developed by many steps.** » (*DM* : 86-87)

- Conventiounalisme évolutif

« With respect to the origin of articulate language, after having read on the one side the highly interesting works of Mr. Hensleigh Wedgwood, the Rev. F. Farrar, and Prof. Schleicher, and the celebrated lectures of Prof. Max Müller on the other side, **I cannot doubt that language owes its origin to the imitation and modification of various natural sounds, the voices of other animals, and man's own instinctive cries, aided by signs and gestures. When we treat of sexual selection we shall see that primeval man, or rather some early progenitor of man, probably first used his voice in producing true musical cadences, that is in singing, as do some of the gibbon-apes at the present day; and we may conclude from a widely-spread analogy, that this power would have been especially exerted during the courtship of the sexes,—would have expressed various emotions, such as love, jealousy, triumph,—and would have served as a challenge to rivals. It is, therefore, probable that the imitation of musical cries by articulate sounds may have given rise to words expressive of various complex emotions.** The strong tendency in our nearest allies, the monkeys, in microcephalous idiots, and in the barbarous races of mankind, to imitate whatever they hear deserves notice, as bearing on the subject of imitation. Since monkeys certainly understand much that is said to them by man, and when wild, utter signal-cries of danger to their fellows; and since fowls give distinct warnings for danger on the ground, or in the sky from hawks (both, as well as a third cry, intelligible to dogs), **may not some unusually wise ape-like animal have imitated the growl of a beast of prey, and thus told his fellow-monkeys the nature of the expected danger? This would have been a first step in the formation of a language.** » (*DM* : 86-87)

- Onomatopées et interjections
- Voix Vs. Cri
- Appel à la communauté

« *The emission of Sounds.*—With many kinds of animals, man included, the vocal organs are efficient in the highest degree as a means of expression. We have seen, in the last chapter, that when the sensorium is strongly excited, the muscles of the body are generally thrown into violent action; and as a consequence, loud sounds are uttered, however silent the animal may generally be, and although the sounds may be of no use. » (*EE* : 89)

« The sexes of many animals incessantly call for each other during the breeding-season; and in not a few cases, the male endeavours thus to charm or excite the female. This, indeed, seems to have been the primeval use and means of development of the voice, as I have attempted to show in my 'Descent of Man.' Thus the use of the vocal organs will have become associated with the anticipation of the strongest pleasure which animals are capable of feeling. » (*EE* : 90)

# Origine du langage /3

## Interjections

- Triple contingence : biologique, circonstancielle, sociale

## Onomatopées

- Retour de l'utilité?
  - Passion satisfait le besoin
  - Sélection naturelle comme couperet
  - Désélection de la sélection naturelle: sociétés morales et expression de l'opinion (lien avec le rougissement)

# Conclusion

## **Apport général**

- Indépendance des sciences sociales (et humaines) : limites de la sélection naturelle

## **Linguistique**

- Question de l'origine : E-language plutôt que I-language
- Interprétation anthropomorphique non anthropocentrique