The new pandemic: Parkinson's

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By Luc Sala August 2022

Is there a root cause for Parkinson's to be found in inferiority feelings and one's mindset?

As we are recovering from the Corona pandemic and fear of yet another viral infection has kept governments and medical institutions like the WHO on alert, the hidden and alarmingly growing pandemic might well be Parkinson's Disease (PD). The human and economic impact of PD is enormous, as the number of patient-years is high and the cost of the necessary care in money, time and family disruption are staggering.

In this essay I suggest the psychological prodromal indicators for PD are not a symptom, but point at a mental cause or predisposition of the disease. The actual incidence and development of the disease is then a matter of generic hereditary disposition and epigenetic (environmental and psychological) factors, like pollution (pesticides etc.) and as I will explain, mindset.

The Corona context

The relevance of this might be, that the Corona crisis has affected the mindset of the general population in such a way, that their trust in science, in the system, in society, in information in general has been damaged to such an extent, that their self-confidence has been lowered, one might even speak of moral injury. This might lead to a lower psychological immunity, an increase of many general diseases, as the surge in excess death seems to indicate, but notably to an upsurge in PD in the coming years.

There may also by a psysiological link between Covid-SARS-19 and the incidence of PD or between vaccination and PD incidence.

The risk of neurodegenerative and cerebrovascular, but not neuroimmune, disorders was increased (threefold increased risk of Alzheimer's disease (AD) and a doubling of Parkinson's disease (PD) risk) among COVID-19 positive outpatients in a large (June 2022) published study[1]. There is some research indicating that the N-protein of the virus maybe affects a-synucleïne, which plays a role in PD[2].

Pandemic proportions

Parkinson's disease (PD), or simply Parkinson's, is one of the fastest growing diseases and some speak of a Parkinson pandemic as the numbers of patients rise, especially in the Western world, where PD is the second most common neurodegenerative disorder. It's a long-term degenerative disorder of the central nervous system that mainly affects the motor system and in later stages many organs and leads to dementia. It mainly affects older people, but there are many younger patients too. The symptoms usually emerge slowly and, as the disease worsens, non-motor symptoms become more common. There are a number of prodromal indicators (early warning signs) for PD like loss of taste and some psychological markers. PD patients often experience symptoms such as olfactory dysfunction, constipation, fatigue, and behavioral and mood changes.

1 https://www.frontiersin.org/articles/10.3389/fneur.2022.904796/full

2 Slav A. Semerdzhiev, Mohammad A. A. Fakhree, Ine Segers-Nolten, Christian Blum, and Mireille M. A. E. Claessens. Interactions between SARS-CoV-2 N-Protein and a-Synuclein Accelerate Amyloid Formation. ACS Chemical Neuroscience; DOI: 10.1021/acschemneuro.1c00666

Meta-analysis of gender-specific PD incidence

Age group	Gender-specific incidence proportions	
	female	male
	pooled total	pooled total
40–49	2.94	3.59
50–59	13.40	19.68
60–69	58.53	55.10
70–79	104.99	132.72
80+	66.02	110.48
Total	37.16	44.21

DOI: 10.1159/000445751 data 2014

The incidence of Parkinson's

Over seven million people worldwide have Parkinson's disease, and it is the fastest growing brain disease in the worldwide, in 2040 one expects 13 million patients[3], partly but not all because of the "greying". Men are 1.5 times more likely to have Parkinson's disease than women. The number of people that are diagnosed with Parkinson's each year and the total number of patients of course varies[4] depending on local situations. For instance in China the number and health burden of Parkinson's disease increases rapidly. PD is an long and expensive disease, the combined direct and indirect cost of Parkinson's, including treatment, social security payments and lost income, is estimated to be nearly $52 billion per year in the United States alone[5].

Medications alone cost an average of $ 2,500 a year and therapeutic surgery can cost up to $100,000 per person.

In addition to cognitive impairment and sleep disorders, PD-patients often have neuropsychiatric symptoms such as depression, anxiety, apathy and impulse control disorders (ICDs) as common non-motor symptoms. The symptoms of the disease result from the death of cells in the substantia nigra, a region of the midbrain, leading to a dopamine deficit, affecting the reward, pleasure and happiness mechanisms, in medical terms the motivational salience and the approach and avoidance behavior. Neurotransmitters like

3 Bastiaan R. Bloem, Michael S. Okun, Christine Klein. Parkinson's disease.The Lancet. DOI: 10.1016/S0140-6736(21)00218-X

4 The Incidence of Parkinson's Disease: A Systematic Review and Meta-Analysis by Lauren Hirsch, Nathalie Jette,Alexandra Frolkis, Thomas Steeves, Tamara Pringsheim; in Neuroepidemiology 2016;46:292–300 DOI: 10.1159/000445751

5 https://www.parkinson.org/Understanding-Parkinsons/Statistics

dopamine are correlated to the nervus vagus and HPA-axis, connecting the gut biome with the brains, dysbiosis in the gut flora helps to diagnose PD.

The material cause of PD seems unknown, with mention of both inherited and (epigenetic) environmental factors like exposure to pesticides as playing a role in the susceptibility to PD. Experiments with mice have shown this could indicate RNA/DNA manipulation as a potential cure for PD.

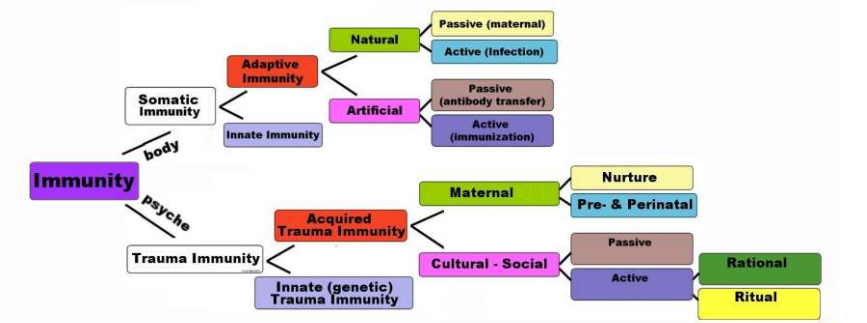
There is, however, at this time no general cure for PD; treatment aims to improve the symptoms; there are now medications like L-DOPA, MAO-B inhibitors, or dopamine agonists that do help at the symptomatic level and limit the impact of the disease.

Could it be the disease (given genetic likelihood) is the result of a mind-state? Almost all studies point to personality disorders as a consequence of Parkinson, not a result of a personality disorder.

The question I ask has to do with observations in a limited group of PD patients, and noticing improved motor functions for some hours after taking mild psychedelics, indicating that PD might be limited to one personality of a patients identity-matrix. But there is more. PD is not a new disease, already in the industrial revolution in England the symptom were well-known. The English doctor James Parkinson published the first detailed description in „An Essay on the Shaking Palsy, in 1817. This was the time farmers were turned into factory workers, without much autonomy or conditions that would stimulate self-esteem.

The research into PD has been almost exclusively into the biological (somatic) effects, looking at the neural and neurotransmitter mechanisms at play, the mechanical perspective of cause and effect. Much has been published about environmental or endogenous toxic agents and PD incidence. Little can be found about biomarkers for PD, like blood values, gut biome, lifestyle, diet, type of work, IQ, psychological types. etc.

The idea, that specific personality or better identity factors play a role and could be used as an indication for susceptibility of PD has not been at the forefront of research. Stress his-



Biological and Psychological Immunity (with trauma immunity as part of the psychological) © Luc Sala 2021

tory and trauma-immunity might play a role here, but there are no conclusive studies. For instance, one has established an association between PTSD and Alzheimer's but the association between PTSD and Parkinson's disease remains unclear.

Since 1913 patients with Parkinson's disease (PD) have been described as particularly industrious, devoted to hard work, inflexible, punctual, cautious, and moralist. These psychological characteristics have been so constantly reported that the concept of "Parkinsonian Personality" emerged. This type of "parkinsonian personality" has been described by means of several case reports, case series, twin studies, and case-control studies.

There has, however, not been a conclusive study relating Parkinson's to a specific clear personality or identity type, although there are some indicators in the various typology approaches that do indicate correlations. Relating such correlations to broader societal and socio-psychological and socio-economic circumstances, like low self esteem or the stress levels or sense of disenfranchisement in a population, has not been a popular subject. Here the interest in psychological immunity[6], as we see in placebo, has been growing and might be a more important factor than physical conditions.[7]

6 Christian Schubert: Psychoneuroimmunology of the Life Span: Impact of Childhood Stress on Immune Dysregulation and Inflammatory Disease in Later Life. DOI: 10.1055/s-0033-1357175

7 Psychological interventions and the immune system: A meta-analytic review and critique; January 2001 Health Psychology 20(1):47-63 DOI: 10.1037//0278-6133.20.1.47

Conclusion

Is there a relationship between a general sense of failure, of being unable to provide for myself or my family, between inferiority complex (low self esteem) and the incidence of PD? Could we relate the peaks in PD incidence in the past and in today's competitive world to a lack of self-worth, in distrust, and doubt about one's abilities? Are Fear Of Missing Out (FOMO), the demand to succeed, to show off one's achievements, the competitiveness of the whole educational system, the living in the shadow of one's peers or bosses, these could be markers for ensuing PD later in life?

But such questions are very relevant, for PD is on the rise, PTSD is on the rise, I fear it's becoming like a pandemic; the psychological and physical health of large parts of the populations is at stake and the costs of dealing with this, in material and human terms, are frightening.

A different perspective

The expression of certain DNA sequences, which may have inherited egenetic is what what causes the physical aspects of PD, the symptoms and degeneration. A wider perspective I adopt here looks at the root causes of PD emergence. Could it be that the mindset (conscious and unconscious) is at the root of the whole process? And can such a mindset be identified by means of bio- or psychomarkers, as a means to predict the susceptibility for PD and take preventive action?

The potential relationship between socio-psychological and socio-economic conditions and the susceptibility to the disease deserves more study, but this requires an approach that looks beyond the mechanical and biological and into the mindset of PD victims. The now prevalent focus on material factors that are indicated and studied as the causes of PD, like specific toxins is of course relevant as these may be the epigenetic factors that trigger and cause the actual emergence of the disease.

More References

Personality traits and the risk for Parkinson disease: a prospective study by Sieurin, Johanna, Petter Gustavsson, Caroline Elise Weibull, Adina Leiah Feldman, Giselle Maria Petzinger, Margaret Gatz, Nancy Lee Pedersen, and Karin Wirdefeldt;

in Eur J .Epidemiol. 2016; 31: 169–175. Doi; 10.1007/s10654-015-0062-1 PMC4819915 PMID: 26130127
This study explored the association between the personality traits, neuroticism and introversion, and risk of Parkinson disease (PD) and concluded both were associated with an increased risk of PD after adjustment. In conclusion, the study provides evidence that neuroticism is associated with an increased risk of PD that is in part suppressed by smoking. There was a weak association between introversion and PD and this effect was at least partly mediated through smoking. The observed effects may partly be explained by familial factors shared by twins.

Accidental discovery leads to Parkinson's disease cure in mice

Brianna Sleezer: in Brain, Health & Medical, Science & Technology, June 2020
After using the chemical to kill dopamine neurons in the mice, researchers silenced PTB, a protein known for its general role in activating or deactivating genes within a cell. Researchers, led by Xiang-Dong Fu, silenced the PTB gene using a technique called siRNA. This has led to the development of a treatment that eliminates symptoms of Parkinson's disease in mice.

Novelty seeking and introversion do not predict the long-term risk of Parkinson disease

Arabia, G, Grossardt, BR, Colligan, RC, Bower, JH, Maraganore+DM, Ahlskog, JE, Geda, YE, Rocca, WA;
Neurology 2010 Jul 27;75(4):349-57. doi: 10.1212/WNL.0b013e3181e a15fd.

A Novel Approach for Investigating Parkinson's Disease Personality and Its Association With Clinical and Psychological Aspects

Laura Carelli, Federica Solca, Silvia Torre, Jacopo Pasquini, Claudia Morelli, Rita Pezzati, Francesca Mancini,Andrea Ciammola, Vincenzo Silani, Barbara Poletti.
Frontiers in Psychology. 2019; 10: 2265. 10.3389/fpsyg.2019.02265, PMC6798168 PMID: 31681080
Parkinson's disease patients did not show a different personality profile according to the cognitive-constructivist model with respect to controls. However, in this population, a general enhancement in the tendency to codify experience by means of specific cognitive and emotional patterns was associated to disease progression and to a poorer QoL.

Personality and Parkinson's disease: a meta-analysis.

Santangelo G., Garramone F., Baiano C., D'Iorio A., Piscopo F., Raimo S., et al. (2018). in Parkinsonism Relat. Disord. 49 67–74. Doi; 10.1016/j.parkreldis.2018.01.013
Personality changes are considered pre-motor features of Parkinson's disease (PD). Cross-sectional studies revealed that PD patients were more introvert, apprehensive, and cautious than healthy subjects (HS), whereas other studies failed to disclose these behavioural traits. Some studies found mixed results concerning Novelty Seeking (NS) and Harm Avoidance (HA) profiles in PD patients. To better clarify the personality profile in PD we performed a meta-analysis on studies exploring such topic according to both Cloninger's Psychobiologi-

cal Model (PM) and Big Five Model (BFM). As for PM, PD patients scored higher on HA and lower on NS than HS. No difference was found on Reward Dependence, Perseverance/Persistence and on character level. As for BFM, higher levels of Neuroticism, but lower levels of Openness and Extraversion were associated with PD.

Association of Stress-Related Disorders With Subsequent Neurodegenerative Diseases

Huan Song, Johanna Sieurin, Karin Wirdefeldt, Nancy L. Pedersen, Catarina Almqvist, Henrik Larsson, Unnur A. Valdimarsdóttir, Fang Fang.
2020 Mar 9. doi: 10.1001/jamaneurol.2020.0117; PMCID: PMC7063561
PMID: 32150226

Posttraumatic stress disorder (PTSD) has been associated with increased risk for dementia. Less is known, however, about other stress-related disorders and their associations with neurodegenerative diseases. In a nationwide cohort study of individuals with stress-related disorders and those without such disorders, the exposed individuals were at a considerably higher risk of developing neurodegenerative diseases compared with their matched unexposed counterparts. This risk elevation was more pronounced for vascular neurodegenerative diseases (risk increase of 80%) than for primary neurodegenerative diseases (risk increase of 31%). The population-matched cohort included 61 748 exposed individuals and 595 335 matched unexposed individuals. A statistically significant association was found for Alzheimer disease (HR, 1.36; 95% CI, 1.12-1.67) but not Parkinson disease (HR, 1.20; 95% CI, 0.98-1.47) or amyotrophic lateral sclerosis (HR, 1.20; 95% CI, 0.74-1.96).

These findings suggest that stress-related disorders may be associated with the subsequent risk of neurodegenerative diseases, possibly through a cerebrovascular pathway.

Multimodal frontostriatal connectivity underlies individual differences in self-esteem

Robert S. Chavez and Todd F. Heatherton, doi:10.1093/scan/nsu063
Social Cognitive and Affective Neuroscience Advance Access published June 16, 2014

A heightened sense of self-esteem is associated with a reduced risk for several types of affective and psychiatric disorders, including depression, anxiety and eating disorders. However, little is known about how brain systems integrate self-referential processing and positive evaluation to give rise to these feelings. Using DTI, we found individual variability in white matter structural integrity between the medial prefrontal cortex and the ventral striatum was related to trait measures of self-esteem, reflecting long-term stability of selfesteem maintenance. Using fMRI, we found that functional connectivity of these regions during positive self-evaluation was related to current feelings of self-esteem, reflecting short-term state self-esteem. These results provide convergent anatomical and functional evidence that self-esteem is related to the connectivity of frontostriatal circuits and suggest that feelings of self-worth may emerge from neural systems integrating information about the self with positive affect and re ward. This information could potentially inform the etiology of diminished self-esteem underlying multiple psychiatric conditions and inform future studies of evaluative self-referential processing.

Re-examining the Parkinsonian personality hypothesis: a systematic review.

Cerasa A. in Pers Individ Differ. (2018) 130:41–50. 10.1016/j.paid.2018.03.045
Under different points of view, the "Parkinsonian personality," as it has been consistently reported shares several clinical features with the obsessive compulsive personality disorder (OCPeD) as classified in the Diagnostic and Statistical Manual for Mental Disorders (DSM).

Covid-19-linked-to-increased-risk-for-parkinsons

P. Brundin, director of the Center for Neurodegenerative Science at Van Andel Research Institute, believes COVID-19 may make patients more likely to develop Parkinson's disease either sooner or later. Discussed in an article published online Oct. 21 in Trends in Neurosciences.
https://www.webmd.com/lung/news/20201106/Covid-19-linked-to-increased-risk-for-parkinsons

COVID-19 and selective vulnerability to Parkinson's disease

Pavel, Murray, Stoessl; https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(20)30269-6/fulltext Sept 2020
We postulate that antiviral a-synuclein accumulation following SARS-CoV-2 infection might compound pre-existing cell-autonomous vulnerability and lead to a-synuclein propagation and widespread neurodegeneration. The hypothesis is supported by evidence in animal models that viral infections can trigger a-synucleinopathies in the CNS.

Researchers Say COVID-19 May Raise Risk of Alzheimer's, Parkinson's, Stroke

A Danish study, presented at the 8th European Academy of Neurology (EAN) Congress, June 25-28, 2022 in Vienna included 43,375 individuals with COVID-19 and 876,356 individuals without the disease.
https://www.healthline.com/health-news/researchers-say-covid-19-may-raise-risk-of-alzheimers-parkinsons-stroke
https://www.frontiersin.org/articles/10.3389/fneur.2022.904796/full

COVID-19 Vaccine Associated Parkinson's Disease, A Prion Disease Signal in the UK Yellow Card Adverse Event Database

J. Classen, 30 July 2021 in Medicine, Biology, Journal of Medical – Clinical Research & Reviews
The analysis showed a highly statistically significant and clinically relevant (2.6-fold) increase in Parkinson's disease, a prion disease, in the AstraZeneca adverse reaction reports compared to the Pfizer vaccine adverse reaction reports (p= 0.000024).

Ted Dawson: New Animal Study Adds to Evidence of Parkinson's Disease Origins in the Gut, in the journal Neuron, 06/2019

Experiments in mice show transmission of nerve-killing protein from the gut into the brain.
"These findings provide further proof of the gut's role in Parkinson's disease, and give us a model to study the disease's progression from the start," says Ted Dawson, M.D., Ph.D., director of the Johns Hopkins Institute for Cell Engineering and professor of neurology at the Johns Hopkins University School of Medicine.

Psychosis in Prodromal Parkinson's disease

I. Pachi, M. Maraki, M. Kosmidis, M. Yannakoulia, E. Dardiotis, G. Hadjigeorgiou, P. Sakka, G. Xiromerisiou, M. Stamelou, N. Scarmeas, L. Stefanis (Athens, Greece)

at 2019 International Congress, September 23, 2019, abstract 377.
Participants who had transitioned to psychosis over the 3-year follow up (57 of 937) had approximately 40% higher probability of prodromal PD (OR [95%CI]: 1.398 [1.003, 1.947], p=0.048) compared to those without psychosis.

Researchers focus on use of psilocybin to treat Parkinson's disease

by Clara Furlong | Silo Pharmaceuticals USA Today; 2021/02/17
Silo has a research cooperation with Kim Kuypers of Maastricht University, for a Phase 2B Investigator Lead Study

Trauma-immunity; is there innate immunity, profylaxe and strengthening against mental disorders like PTSD?

by Luc Sala, April 2021, on www.academia.edu

Identity 2.0, the dance of our substitute identities and the illlusion of digital identity

Luc Sala with Stanley Krippner, Steve Speer & Denice Leverett
How multiple identity is far more common than assumed and is the root cause of many ailments and disorders. A 520 page perspective on substitute identity formation and the identity-matrix (update from Identity) . ISBN 9789492079350 (2019)

De Parkinson Pandemie

Prof Dr. Bastiaan R. Bloem ISBN 9789081932219

Video:

Prof. Dr. Bas Bloem about the pandemic aspect of Parkinson's. https://www.youtube.com/watch?v=R8Ub0aFE9aA