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Membra(I)nes as Resonance Bodies of Refusal: A Speculative Resounding of Vulnerable Stress Performances in the University

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Abstract: Stress is an intimate and familiar concept, yet it is often hard to address and deal with in practice. This article focuses on the autobiographical writings of recurring stress in the university that were produced by a group of gender studies students using the method of memory work. It explores stress as a potentially injurious and wounding force as well as possible ways of collectively responding to and “caring with” stress. Drawing on historical and early psychoanalytical work on nervous exhaustion and the role of mucous membranes, the author examines stress in relation to the concept of membra(I)nes, arguing that this concept presents a new starting point for listening to the students’ writings about stress. Here, stress is audible as a form of nervous muscular agitation that affects different parts of the body and the gut. Read with feminist theory, the act of refusal becomes one potent concept in the students’ regeneration of power. The author also explores the stomach growl, or borborygami, and the underlying intersection between the brain and the digestive system, in borborygami’s potential for care and collective response.

Keywords: Body, Care, Gut, Stress, University

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"They knew, they had not enough time. As usual. Stress is already coming to them. It was as if something inside their body tied every part with a rope. On their chest something sat down really heavy." (03)

"She did put on makeup today, but she can't stop thinking about her neck and wild pulse. She is turning red because she is not able to answer most of the questions... She doesn't know where she should be looking. Her stomach hurts. Her fingers are pressing on a pen, playing with it, clapping with it. [...] A strange sound is coming from her stomach, she is trying to move and make it stop but it doesn't help." (15)
– Graduate students in gender studies 2015, 2017

Introduction

When I received the call for papers by the German Gender Studies Association proposing to "think with or think as membranes" or "membra(I)nes" – a spelling that points to the possibility that membranes might be uncannily mindful – I felt compelled to revisit some narratives of stress at the university written by students in my course „Gender and the Body“ already before the pandemic.¹ Together with Elizabeth Wilson's (2015) call for a mode of engagement that is speculative and curious about the pathways and capacities of the biological which she considers "indispensable to feminism's conceptual and political efficacy" (49), I began to think about pulsating mucous membranes and their thin layers of muscle fibres (*muscularis mucosae*), which line the gastrointestinal, respiratory and urinal-genital tracts – pathways that can contract and produce the constricted breathing, speaking, ingesting and thinking that the students' stress

1 This writing has been a long time in the making. In a smaller student collective, we had endeavoured to write a paper collectively but the cooperation turned out to be short lived. As one of the participating Ph.D. students wrote "As much as I am excited about the whole project... I find myself utterly exhausted pretty much all the time and I haven't been able to write down anything yet" (pers. com. 16.3.2016). Some students have taken the work on stress into their own projects such as a master's thesis on gaslighting. That I am able to return to these concerns attests to the privilege of holding a stable(ish) academic position and to have received funding for participating in the Membra(I)ne conference.

narratives described. The students had employed and adapted the feminist method of memory work (Haug 1988), where group members write autobiographically but anonymously about a situation of concern that they collectively analyse and rewrite or recompose (Lorenz-Meyer 2015). In 2015 and 2017, the students wrote about situations in which they had felt stressed at the university as part of their graduate course work in gender studies. Their writings often focused on examinations and schoolwork, but also on the silent stresses of transnational relocation and feeling alone or feeling like an imposter in academia. In an ironic twist of doing feminist pedagogy in the academy, some considered the memory work writing to be a stress-full “assignment”, one that required them to “recall[ing] the moments of fear, tensed stomach almost ready to vomit” (02)² and that contributed to the general feeling of exhaustion and overload, which we set out to explore.

While the students found their everyday experiences unacknowledged also in the scholarly literature on stress, stress was something they were intimately familiar with. Its recurrence was often anticipated with feelings of regret and apprehension, a longing for connection and recognition, a fear of failing, and a sense of being stuck and out of place. In the vein of *écriture féminine*, memory work as we practised it, is not so much a writing *on* or *about* stress as it is “a writing *of* a body, written in blood, sweat and tears” (Diprose 2002, 279). In their co-edited landmark anthology with Ana Mendita’s 1974 “Body Tracks” (blood traces of the artist’s descending arms) as cover art, Gloria Anzaldúa (2002 [1981]) had termed this “organic writing” and explained, “It’s not on paper that you create but in your innards, in the gut and out of living tissue” (191). Indeed, it was the organs – mouth, throat, lungs, stomach, bladder, eyes, skin – that performed much of stress’s doings, as I will explore below. Unbiddenly, “telling flesh” (Kirby 1997) effected an *incapacitation*, even an *undoing*, of the academic bodymind that contravened the academic norms of preparedness, confidence, coherence, fluency and clarity of thinking, and obstructed a solid grasp of the matter at hand. This incapacitating agitation was at once considered ordinary and akin to what Lauren Berlant and Lee Edelman (2014) call a “relational out-of-synchness traversing body and world” (66). Afterwards, it could sometimes generate “a short time of special happiness that almost nothing but successful and completed study work can bring them.” (02)

Rosalind Gill (2010) has named stress “a hidden injury of the neoliberal university.” In a culture of individualism and productivism, it is “largely secret and

2 The students chose random identification numbers and preferred pronouns when sharing and discussing the memory works with their peers. In so far as their writing often unsettles the idea of a bounded subject that pseudonyms usually suggest, these numbers seem fitting for tracing the materialisations of stress.

silenced in the public spaces of the academy" (229). Stress is often experienced as shameful, or "hearable as a 'moan', as an expression of complaint or unhappiness rather than being formulated as an analysis or a (political) demand for change" (230). Despite urgent research on the long-term racialised cumulative effects that chronic stress has on shortening health-spans and lifespans notwithstanding (Geronimus 2023), there is still little feminist work on stress concerning students that that would offer more than just individualised strategies of stress management, mindfulness and resilience training aimed at fostering cognitive skills and strategies to better deal with the challenges of overload, competition, and productivism and help students to just "bounce back" (Gill/Donhague 2016). Such strategies rarely address underlying conditions. Nor do they concern themselves with the biology of stress, which is still widely understood as a reflexive "fight-or-flight response" to a threatening stimulus. Sense receptors and the brain "transduce" specific signals or cues into bodily activation (increased heart rate, blood pressure and so on) by activating a hormonal signalling cascade along the hypothalamic-pituitary-adrenocortical (HPA) axis (Geronimus 2023; Landecker 2024).

Against this backdrop and inspired by the concept of membra(I)ne the following questions began to ferment: (i) How exactly was recurring stress in the university injurious or wounding? (ii) How might we tune into, respond to, and solidarise and "care with" (Schrader 2024) stress's disruptive agitations when stress is often hidden and human sociality seems out of reach? Considering the stress's temporal undoing of the hubris of intellectual mastery (Singh 2018) and possibly cruel pleasures (Berlant 2011), could memory work help us to speak from and through stress rather than simply writing against it? What spurs these lines of inquiry in a feminist vein is the hope of doing stress (and university) otherwise and collectively, in ways that take seriously stress's discontents and pleasures, and contribute to making academic lives more liveable and joyful. This likely includes what Monika Rogowska-Strangret and Olga Cielemecka (2021) call "vulnerable academic performances" that "call in the embodied, the experiential, the excitable, and the personal aspects of our existence and, consequently, disturb, if only momentarily, the rigorous norms of speaking in academia" (28) which are themselves open to question.

My wager in this speculative essay is that these endeavours can be aided by listening to the students writing along and through mucous membranes. Before I turn to the energetic (and pleasurable) conceptions of a mucous membrane and its muscle fibres in early psychoanalytic work and begin to listen to membranes' vibrations in the students' stress writing, I briefly want to recall

stress's classed, racialised, gendered and ablist history and its entanglement with methods of learning in elite European universities.

The modern abhorrence of nervous exhaustion

As a reference to specific organism-environment relations, stress is a thoroughly modern concept. A shortening of the word distress, the term (from Latin *strictus*, "tight, compressed, drawn together") has retained an ambiguity as to whether it refers to forces from outside or inside the body, or both. In 18th century physics and engineering, the notion drew on a physical model of force, counterforce and distortion, referring to the *internal forces* that neighbouring particles of a material object exert on each other, particularly when "being acted upon by forces from without, resisting the distorting effects of these forces, attempting to maintain [the object's] integrity" (Hinkle 1974, 337). The popular writing of neurologist George Beard (1881) described the rise in nervous exhaustion caused by the "stress and friction of civilisation" (160) – urbanisation, market competition, technological acceleration as well as changes in air, diet and (in)digestion. Beard compared the "nerve-force supplying all the organs of the body" (98) with "[a]n electric machine of definite horse-power [...] to supply the electricity needed to run a certain number of lamps" (98). When new demands are inserted in the electric circuit the lamps "burn faintly and feably" (99). While he did concede the stress of poverty, his chief concern about "nervous debility" (17) centred on the "brain working classes" – including women. Encapsulating the coloniality of stress concerns, Beard reproduced the racist trope that in contrast to the "barbarian [who] carries through life but one burden – that of the present... [o]n the highly civilised man there rests at all times a three-fold burden – the past, the present and the future" (130).

While Beard was critical of modern competitive examination, I want to turn to how overwork, anxiety and exhaustion were built into the technologies of learning in European higher education in order to build machinic learning and masculine character – discipline, perseverance, emotional stability and intellectual competitiveness of (colonial) men (Warwick 2003). This was nowhere more apparent than in the infamous Cambridge Mathematical Tripods. Drawing on student diaries, Warwick traces the shift from oral disputation at the end of 18th century to competitive study and written examination that not infrequently induced so called "funking fits" (drawing on the Scottish slang expression *funk*, "to become afraid, fail through panic") to refer to students' passing out.

Viscerally abhorred, nervous debility was produced through excessive study and to be overcome by entraining "a robust and unshakable rationality of mind

and body" (Warwick 2003, 216). In personal letters and diaries students recalled how those already "pale and death-like from excessive reading... grew paler and paler as the examination proceeded" (Wright 1827 cited in Warwick 2003, 187) over consecutive days.

„Some entered the examination hall clutching 'a handful of the very best pens, although there is an ample supply upon every table, so fearful are they lest a moment should be lost in mending the same'... The enforced silence was broken only by the ominous footfall of the examiners ... while the peculiar sound of 'the scratching of some hundred pens all about you [made] one fearfully nervous.'" (Bristed 1852 cited in Warwick 2003, 128)

While fearfully anxious, the sounds of the professor's footsteps and clasped and scratching pens still echoes in the agitated writings of stressed-out students today as I will explore after turning to some generative conceptions of membrane.

The agencies of pulsating membra(I)nes

Leaving aside the history of early 20th physiology that, indebted to thermodynamics and studies of animals and war veterans, fostered the notion of physiological stress together with bodily homeostasis, stress as disequilibrium, the "stress reaction" and general adaptation, tethered to biological functionality (Cooper/Dewe 2004; Robinson 2018), I now examine early psychoanalytical conceptions of membrane that provide starting points for thinking about stress's injuries.

An inspiring energetic conception of membrane has been proposed by Sigmund Freud (1961 [1920]) in his metapsychological speculation in "Beyond the Pleasure Principle" on the ectoderm becoming ontogenetically and phylogenetically the system of consciousness. Constituting an ostensible interior and exterior of the organism, membrane in Freud's ontogenetic account, separates from the organism as a protective layer – one that is both open to and buffers vital but potentially deadly energies emanating from without, while remaining open to further energetic flows. In his example of "an undifferentiated vesicle of a substance that is susceptible to stimulation" (Freud 1961 [1920], 21), the vesicle's

"outermost surface ceases to have the structure proper to living matter, becomes to some degree inorganic and thence-forward functions as a special envelope or membrane resistant to stimuli. In consequence, the energies of the external world are able to pass into the next underlying

layers, which have remained living, with only a fragment of their original intensity" (Freud 1961 [1920], 21)

Importantly, for being able to receive, dampen and transduce energy into another medium, the membrane "is supplied with its own store of energy, ... also receiv[ing] excitations from *within*" (22). Towards the inside however, the membrane does not act as a shield: "the excitation in the deeper layers extend into the system directly and in undiminished amount, in so far as certain of their characteristics give rise to feeling in the pleasure-unpleasure series" (23). Inside/outside are hence in a pulsating exchange through membrane.

Injury or trauma occur when excitations from without breach or overwhelm the protective membrane: in more complex organisms,

"such an event ... is bound to provoke a disturbance on a large scale ... Cathectic energy is summoned from all sides to provide sufficiently high cathexes of energy in the environs of the breach. An 'anticathexis' on a grand scale is set up, for whose benefit all the other psychical systems are impoverished, so that the remaining psychical functions are extensively paralysed or reduced" (Freud 1961 [1920], 24).

Drawing on a distinction between free and bound energy or cathexis, Freud posits that a highly cathected system is more capable of binding incoming energy psychically than one with low cathexis in processes of condensation and displacement that are of interest chiefly in their significance for "traumatic neurosis" (25). What I want to draw out here with respect to the role of membrane is that Freud's passive formulations ("cathectic energy is summoned") appears to gesture to the agency of the mental system and the unconscious while not ruling out the possibility that the membrane itself, as membra(I)ne, actively attracts and binds energy rather than merely being a passive hinge, absorber and muffler.

Following Freud's reminder that "in higher organisms the receptive cortical layer of the former vesicle has long been withdrawn into the depths of the interior of the body, though portions of it have been left behind on the surface... [as] the sense organs" (1961 [1920], 22), I want to focus on some of the capacities of the *mucous membrane* as the primary interface of the world and the interior of the body. These membranes are known for secreting mucus that serves as lubrication and protection by trapping particulate matter and pathogens in it, preventing their entry into deeper tissues. Lining the respiratory, urinal-genital tracts and digestive tracts (from mouth to anus), in adult humans the total surface area of the *mucosa* is about 400 square meters compared to two square meters of skin (Sompayrac 2023). Elsewhere Freud had considered mucous

membranes as being “the erotogenic zone par excellence” (1953 [1905], 167). Hinting at their capacity for contraction he notes the significance of “a rhythmic character” (183) for the membrane’s creation of (sexual) pleasure. This is evident in the infant’s rhythmic sucking, or its wilful holding back its stool able to produce sensations of pleasure and/or disobedience.

Elizabeth Wilson (2015) has suggested that the work of Freud’s disciple Sándor Ferenczi is more attentive to the dynamic capacities of biological substance such as the smooth musculature of the alimentary tract and lumps in the throat: their subtle motives, plasticity and agentic materialisations. In his phylogenetic and ontogenetic account, Ferenczi (2002 [1926]) posits an earlier form of the psychic apparatus where excitation is not bound by psychic cathexis but disposed by motor discharge in the form of a physiological reflex that he terms the “protopsyche” (97). This is “a stage to which indeed the highest psychic elaboration always remains inclined to regress” (98). As Ferenczi put it in later work, under certain traumatic conditions, “it can happen that the (organic, perhaps also the inorganic) substance recovers its psychic quality, not utilized since primordial times. In other words, the capacity to be impelled by motives [*Bewegtwerden durch Motive*], that is, the psyche, continues to exist potentially in substances as well. [...] In moments of great need, when the psychic system proves to be incapable of an adequate response, [...] the organism begins to think” (1988 [1932], 5–6).

For Ferenczi then, a substance such as mucous membrane is not so much a passive surface for psychic innervation but through the tendency to regression in both psychic and organic life, the membranes of stomach walls are capable to contract, swell and secrete and in so doing “expressing wishes, sensations of pleasure-unpleasure, or even complicated thoughts, through changes in their structure or function (the language of organs)” (1988 [1932], 7). And under conditions of distress, this is the case also “in the affective states in normal people” (Ferenczi 2002, 96). Since “an exchange and interchange of energy goes forward also in the economy of purely organic sphere and thus in the mutual relations of the organs themselves” (Ferenczi 1968 [1924], 82), the mechanisms of condensation and displacement are not merely ideational but can also be organic. To make this more succinct, Ferenczi proposes that we turn from a “flat” conception of vital phenomena tethered to the utility of organs and “limited to a single interpretation of the data” (1968 [1924], 84) to what he calls “deep biology” – one that is able to “comprehend the more subtle motivations of all those remarkable vital phenomena” (83) and “describe the operation of regressive tendencies in their process of disintegration as well as in those of repair” (86). As Wilson (2015) argues taking the example of the contraction of smooth muscles in bulimic vom-

iting, “the vicissitudes of indigestion and vomiting are complex thinking enacted organically: binging and purging are the substrata themselves attempting to question, solve, control, calculate, protect and destroy” (63) in processes where psyche and soma are “always already coevolved and coentangled” (66).

Let me now turn to the students’ autobiographical memory work writings and listen to “the language of organs”, particularly the (in)activities of the mucous membranes and their smooth muscle fibres.

Listening to stress through membra(i)ne

Whether the students wrote of stress of an approaching assignment or student exchange, an exam, or the everyday vicissitudes of finding community, the advent of stress was frequently anticipated and dreaded. Stress made itself felt as a wave of nervous muscular agitation that propagates through the body: organs accelerated their habitual movement and rhythms, produced pressure, sounds, vibration and changes in temperature. In this staccato of unrest, it was the organs that were the subject of action.

“They felt the usual wave of anxiety and blunt pain in the stomach which comes every time they do school assignments at the last minute. Usually at the last minute because they work full-time and are not able to prepare for school step by step every evening after work as she feels mentally exhausted almost all the time... Fear of failure leads to moments of hard breathing, evening attacks of horror with constricted lungs, clenched teeth, staring to darkness and prolonged efforts to fall asleep.” (02)

“Hands shaking, heart beating, voice shaking, sweating, red in the face, blunt pain in the stomach. She felt the stress in her body was spreading through her whole body into her legs and she felt so weak.” (3073)

There is no unified subject or set of relations or techniques capable of wrestling control as agitation spread along the mucosa including those of the eyes, the mouth and the throat, which acts as a switch point between the different organic capacities of ingestion, breathing, vocalizing, hearing and smelling (Wilson 2015). Mucous membranes dry up, get irritated, itchy and contract or “knot”, blocking the pulsating passageways between inside/outside evident in the difficulties or inability to breathe, speak or see clearly.

“Her eyes start to feel tired and dry. She almost can’t see the deadlines written on the board.” (666)

"Breathing was hard because there was a knot in her throat as if her vocal cords were tangled. She couldn't speak. She pressed her teeth together." (9)

"Her gut churns knotted and liquid all at once. She feels she is about to vomit." (191)

Amidst tension and agitation, shivering fingers and growling stomachs, "haze", frost and a "foggy mind" descended like heavy weather, thwarting or negating attempts of purposive planning and prioritising orderly academic performances. Agitation and inertia in the same body.

"She sits at the table, struggling though papers. She doesn't know where to start. It is here again – feelings of irresoluteness what to first. She starts to feel freezing through the whole body and shivers in her fingers." (01)

"It blurs when she looks at the screen and everything in her head is a mess." (111)

"She felt numbness and distractedness at the same time. She could not focus. She started to write but her fingers were heavy like stone." (77)

"Strange emptiness, a blanket of fog – there is no chance of forging their way through it." (234)

Tension, shaking and numbing in and through the membra(I)ne thwart a clear grasp, as things slip out of hand and head; heads are "a mess", actions erratic or arrested, draining the energies of those who often already felt exhausted. In his treatise on negativism, psychoanalyst Eugen Bleuler (1910) has remarked on the "queer impulses" when actions or gestures express opposing tendencies: extending the arm for a handshake and withdrawing the hand to the back. Bleuler suggested the neologism "ambivalence" (and "ambitendency") for holding and enacting two opposing valences at the same time. Agitation and "foggy mind" traversed, inhibited or delayed academic performance and social interactions in the university.

Feminist theorisations of refusal have shown that negation can have generative potentials (Campt 2019). They often take inspiration from the unexpected refusal of racialised subjects to share or disclose certain knowledges and affect by falling silent, changing the topic or staring into the camera with seemingly blank expressions. As Eve Tuck and K. Wayne Wang (2013) point out, such refusals do more than just saying "no"; they redirect attention to terms and ideas otherwise unacknowledged or unquestioned: "Refusal turns the gaze back onto power" (307). It presents not so much opposition or resistance but in Tina Campt's terms *"a rejection of the status quo as liveable and the creation of possibility in the face of negation"* (2019, 83). In so doing, refusals implicate the listener or analyst, making consequential demands about what can and cannot be known, and shared.

Attending to refusal tends to direct research away from “damage-centred” towards “desire-based research” (Tuck/Wang 2013).

While the students’ memory works did rarely oppose what was demanded of them in words, the drying out and agitations of mucous membra(I)nes effectively refused or deferred the students’ submission to “an order of schedules”, disciplined machine learning, and external evaluation and judgement. Thinking through membra(I)ne’s entanglement of matter and motive, disordering agitation and cerebral numbness might help us to listen more attentively to the articulations of conflicting affects, hopes and disillusionment, with/in the university that students had added for context in rewriting their memory work in reponse to queries by the course tutor and their peers (additions marked in italics).

“They were excited to engage in what they hoped was the rigour and enthusiasm of a peer group attending a world class university. Whilst they had found some people to have the kind of conversations with that they loved so much, a great deal of University had disappointed them. People in the class wouldn’t speak, wouldn’t share their thoughts or laugh together about their different experiences of the same topic. This was the education that they so wanted.” (55)

“Her leg started moving back and forth under the table.... too many deadlines. She started counting how many hours were left in her week. She felt so angry. She felt angry at the professor, why she can’t understand how it is impossible to do all this. The anger came through her eyes that she almost couldn’t see the blackboard ... She felt so not in control. What time was two minutes ago, didn’t exist. Everything started work by an order of calendar, schedules, deadlines, hours and minutes.” (666)

These supplementary passages speak of teachers who appear indifferent or distant from students’ work(loads) and lives, a temporal rhythm structured by schedules and deadlines whose value is questioned, and a yearning for a lively peer community and impassioned intellectual engagement. In so far as these issues remain unresolved and unresolvable, attempts at reasoning, soothing, and even a flatmate’s embrace remain unable to pierce the “shell” of those who feel cut off and out of synch, as the following account shows in more detail.

“Her eyes go over the list of things she should do but nothing seems really important or motivating. She must impose herself a schedule since her teachers won’t really direct her, even though she will have to have at least three convincing projects that will allow her to pass the year. [...] She takes a deep breath and reminds herself that the most important thing for something to be possible is to believe in it yourself. But then

again, all the usual university teachers' complaints – 'Students of your course should already know how to do all this correctly', 'Only a few of you will become at least acceptable' – come to her head. She has to convince herself that she is not mediocre. She often receives compliments from her colleagues and classmates, but do they really mean it? Or are they also mediocre? What is so wrong about being average anyway? She doesn't want it. She wants to feel peaceful, achieve the feeling of being self-sufficient. She doesn't have that. She is not enough for herself. She feels lost, a foreigner. Why is she striving to do all the things that she put on her 'list' if it's not going to lead to happiness? Are these things useful? Are they good? [...] Her roommate tries to comfort her giving her a hug, but she won't stop [crying]. She doesn't really feel humanity in her roommate's arms, she feels not being able to perceive anything that is not in her own shell." (0909)

"Their feelings of stress at school are usually connected to their alleged inability to prepare adequately for the job required, the anxiety of being evaluated and actually false feeling of obligation to be always very good. These are burdens in their mind which they are unable to shake off, so they continue to disable their mental strength." (02)

How to respond to and solidarise with agitated stomachs and feelings of being lost and depleted when self-sufficiency appears as a fictitious idea(l) and educational fulfilment and connection out of reach? While a critical stance about debilitating conditions of the university and the self was often ready at hand (evident in phrasing of "an *alleged* inability" or "a *false* feeling of obligation" that suggests that things are, or could be, otherwise), critique did not make a difference in how recurrent waves of stress agitation and numbness were felt as a debilitating individual burden to be overcome.

It is time therefore to explore the sonic and haptic capacities of mucous membra(I)nes and consider how they might allow us to connect and solidarise with these possible refusals of the status quo.

Resounding stress otherwise

In her work on anonymous identity photographs of diasporic subjects, Camp (2017) has proposed that we listen to their "lower frequencies", "the lower range of intensities generated by images assumed to be mute" (6). Thinking-feeling with her father's hum of her mother's favourite song at her funeral and its "sublimely expressive unsayability" (4), Camp reminds us that sound (even when

it cannot be heard) resonates and is felt in and as vibration “through contact with parts of the body” (7). Through juxtaposing different image collections, the quiet aspirations and refusals of the photographed subjects become “accessible instead at the haptic frequency of vibration, like the vibrato of a hum felt more in the throat than in the ear” (8). Psychoanalyst Theodor Reich (1949) speaks of “listening with the third ear” to what is said as much as to what is not. To do so, the listener (analyst) must act “as a sounding board” (124) and “observe and record in his memory thousands of little signs and to remain aware of their delicate effects upon him [sic]” (145). As Reich succinctly put it in a haptic register, “These unconscious feelers are not there to master a problem, but to search for it. They are not there to grasp, but to touch” (145).

Such haptic modes of attention can help paying attention to seemingly inconsequential minor nonhuman “things” and vibrations that provide barely perceptible non/human connection and companionship: the distracted clasping and clapping a pen or the hint of a friend’s perfume that unexpectedly propagate through mucous membrane and momentarily change the atmosphere, within and without.

“M. hugged her. They stood there for a bit. Even though her nose was completely stuffy, she could smell traces of M’s oriental perfume. You could always smell M’s perfume. She was one of those girls that you could smell even five minutes after they had left a room. Her heart finally calmed down a bit and her stomach started to feel a bit more relaxed.” (4866)

“Her heart is beating like crazy, she thinks that her blood circulating in her veins must be visible on her neck; she feels her pulse like never. She did put a make up on today, but she can’t stop thinking about her neck and wild pulse. She is turning red in her face because she is not able to answer most of the questions [...] Her stomach hurts. Her fingers are pressing a pen, playing with it, clapping it. She is starting to realize it is a little bit disturbing, in the room which is exceptionally quiet you can feel the breath of all the people who are present and so tapping the pen produces really loud sounds [...] A strange sound is coming from her stomach, she is trying to move and make it stop, but it doesn’t help.” (15)

What conversations are occurring here between an approaching exam, the mucous membrane of the nose, olfactory memory and the stomach, between pulse, pen and gut? To me, they echo the history of enforced silence, the fearful footsteps of the examiners and students’ “scratching of some hundred pens” (Warwick 2003) in the Cambridge examination hall mixing with the rumblings of

contracting intestines that reverberate through the students' bodies and memory writings. Touched by these unrestful vibrations, what if we lean into the stomach growls produced by the contractions of the helical *muscularis mucosae* – not to quieten the stomach but to resonate with and possibly synchronise, amplify and care *with* the stomach rumblings that the Greeks tried to imitate sonically in the word *borborygmi* (Andrews 2021)? What different thoughts and frequencies might we learn to discern, respond to and affect if we collectively let the rumbling resonate beyond the study through university classrooms, offices and corridors?

To conjure such a possibility of collective gut memba(I)ne agitation – where the term agitation, as Mel Chen (2023) reminds us, traverses the domains of the medical and political and always captures some form of unrest – it is instructive to recall that etymologically there is a close connection between thinking and the digestive system. Digestion from Latin *digerere* means to distribute, classify and comprehend. Latin *pensare*, to think, is also related to *pantices*, the gut (Da Silva 1990, 654). The rhythmic squeezing of the smooth muscle fibre of mucosa in humans involves a ring of contraction activated by the enteric nervous system (ENS) (Andrews 2021). Part of the autonomic nervous system, the ENS regulates gut motility and glandular secretion and, as Wilson's (2004) critical reading of biological science has shown, can act independently from the central nervous system. Its complexity and the similarity of its neurons to those in the brain have lent it the name "second brain" (34) which also fits the oft-neglected finding that more than 90% of the body's neurotransmitter serotonin are found in the gut.

Even though in contrast to the sound-vibrations of belching and flatus, *borborygmi* are found to act outside of conscious control or volition, psychotherapists have noted that the bowels can and do in Freud's words "join in the conversation", that is, act to "mark" or with Ferenczi express memory, feeling and thought (Da Cava 1990, 646). Stomach growls can respond to the rumble of another. As one research participant put it "Our tummies rumble together, so it's like a conversation at a deeper level" (King 2011, 168). Adrian Mackenzie and Celia Roberts (2017) bring brain/gut responses together with the capacity to care in their work on "brain-based parenting". In this science-based relational approach, chemical and neurological pathways are rerouted. (Adoptive) parents of children who have experienced severe neglect and abuse, for example, learn to steer their limbic responses away from punitive reactions towards encouraging the child to sit in their lap, using their own body "to regulate the child's flight or fight patterns" (143), and establish a positive circle of care. To be sure, such a material-semiotic process "that directly couples fluxes of signs (gestures

and words) with micro-perceptual flows of awareness of pulse, breathing, cortisol levels" (143) does open the spectre of a biopolitical (micro)management of life as the authors acknowledge.

While sharing in the endeavour to work with stress's incited agitation and numbness rather than extinguishing them, the practice of caring with *borborygmi* is less certain that we already know what our stomach growls are saying and what a collective response might entail. It is an attempt to slow down and make space for resonating with and resounding "the mess" of stomach growls, and to do so collectively and as part of the doings of the university with an outcome that cannot be known in advance. In her manifesto for slow science, Isabelle Stengers (2023) proposes that slowing down the productivist university is not a return to an imagined past with time for thought outside the strictures of industrial science. Rather it is a practice that attends to what is messy in learning, knowing and valuing that gets cut off in fast science and scholarship. Here I want to suggest that this includes a responsive and accountable exploration of how stressed bowels and stomach growls shape what is considered, learned, known and connected with, and how – and how it could be otherwise.

Depending on the situated frequencies of stomach rumbles, sometimes resonances might combine to decrease the amplitude and institute a period of rest within our practice. Tricia's Hersey's (2024) "Rest is Resistance", takes inspiration from the radical practice of her African-American grandmother of "resting her eyes" each day. As the grandmother explained, resting is a regenerative listening practice: "'Every shut eye ain't sleep. I am resting my eyes and listening for what God wants to tell me'" (6). At other times, the growls might oscillate at resonant frequencies and produce a higher amplitude that, amplified by pens, keys and other companions if necessary, might effect a rumbling walk-out or strike as Sarah Jaffe (2022) suggests in "Work Won't Love You Back" (and Prague gender studies staff and students have started to do since 2023 in collective actions that advocate for better wages and working conditions in the social sciences, humanities and arts). Jaffe too had found resolve when she "listened to the rattling in [her] chest, allowing the feelings to stop [her] from doing what [she] was doing" (363) and "turn our desires back onto one another" (364). Inevitably, such sonic solidarities will harbour dissonances, tonal differences that cannot be denied or overcome and have to be contended with.

Outlook: Caring with mucous membra(I)nes

Inspired by the notion that membranes might already be mindful, in this article I have suggested that thinking through membra(I)ne can provide a new

starting point from which to address students' autobiographical writings about stress in the university, which speak of individual anguish and overload. Early psychoanalytic work offers conceptions of mucous membranes and muscles fibres, in which they are portrayed as energetic, sensuous and even thinking. An image of a membrane emerges as multifaceted: It connects as it divides, it expels as it contracts, it secretes and dries up, it knots and resonates, and it is a border that feels and even thinks! And this has not even touched on its capacity to store vibrational energy, the workings of mucus and its interfacing with the human microbiome. Thinking emerging potentialities together with the feminist theorisation of refusal and vibration underlines that what is at stake is a critical sounding out and incitation of possibilities, not science worship (Wilson 2015; Schrader 2024). Here my starting point was the reverberation of students' stomach growls and how a thinking with membra(I)nes can open new ways for attending to others through reverberation and producing differing amplitudes together, in ways that explore agitation and numbness as collective social and intellectual pursuits.

The idea of caring *with* mucous membranes is an invitation to listen and resonate with mucosa. It differs from the admonishment of healthcare professionals to care *about* or "care *for* cortisol" (Roberts 2018), which refers to the demand that people recognise, monitor and, when necessary, decrease levels of the so-called stress hormone in their body through practices such as meditation, exercise or laughter. "Caring with" is a more recent addition to the feminist lexicon that underlines how care does not emanate from a sovereign subject and is not a human-(or cerebral-)only affair. Astrid Schrader (2024) refers to Donna Haraway's practice of *sympoiesis* or "making with" in contrast to *autopoiesis* or self-making (159). Her project of "caring with microbes" in reading science denotes a way of doing science that allows science to become affected by haunting microbes. Caring with student stress resists a conventional subject-object divide and describes the material-semiotic agencies – including mucous membranes – that shape the capacity to care. Like Wilson (2015), Schrader proposed that a critical reading practice of microbiology that cares with microbes "might change the 'scene of writing' from within biology" (159), including the distinction between the empirical and the conceptual. In the case of student stress in the university, amplifying the refusal of agitation and numbness might help to incite joy and dishabituate a sensorium adapted to productivism and overload.

Data Availability Statement

The analysis in this study is based on students' memory work and can be requested from Dagmar Lorenz-Meyer if there is a legitimate interest.

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