The Fish School Theory of Practical Wisdom: A Process Unification

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Abstract

The *Fish School Theory of Practical Wisdom* is an analogy-based theory derived from empirical PhD research which elicited the constituents of enacted practical wisdom in a population of family medicine practitioners (Jameel, 2021). This empirical work addressed calls to look at the character of wisdom exemplars (Sherman, 1989) in the real world (Glück, 2020). As philosophers and psychologists come closer to a Common Wisdom Model (Grossmann *et al.*, 2020a; Grossmann *et al.*, 2020b), the focus tends to be on specific constituents of wisdom rather than an appreciation of practical wisdom (or phronesis) as a process. The Common Wisdom Model has been criticised for lacking the emotional dimension of wisdom (Glück, 2020). The neo-Aristotelian 4-component model of phronesis (Darnell *et al.*, 2019) has been criticised for reproducing what psychologists have been alluding to for a while (Lapsley, 2019).

The *Fish School Theory* offers a novel heuristic to understand the process better, emphasising a purposeful direction towards morally orientated action. This in turn, can be tested and challenged by various academic disciplines, as well as by educators and practitioners. This would be an important part of theory validation. Aristotle's work on phronesis has inspired much of the current research on practical wisdom. In his lifetime academic disciplines were less distinct, and the creation of ideas were more of a connected ecology:

> *"Because Aristotle himself does not attempt to distinguish the biological from the philosophical, it makes sense to read all Aristotelian texts as potentially representative of the same philosophical outlook."* *(Connell, 2001)*

The connection between phronesis and a school of fish is not accidental. Well before Aristotle produced his greatest metaphysical, ethical and political works he was an ichthyologist, fascinated by the scientific study of fish (Ganias, Mezarli and Voultsiadou, 2017). This resulted in Aristotle being labelled the father of marine biology. Aristotle's concepts of telos (purpose) and eudaimonia (flourishing) were inspired by studying animals (Grumett, 2019). Aristotle wrote that an animal's telos is identified by observing its function within its wider ecosystem. The *Fish School theory* of practical wisdom stays true to Aristotle's thinking and is inspired by the natural world. This essay is a call to revisit holism, to appreciate the importance of *reconstruction* after scientific *deconstruction*. To place scientific discovery back in its ecosystem.

The *Fish School theory* takes a collection of empirically derived constituents of wisdom (which may vary for different professions/disciplines) and places them in purposeful process. The constituents were derived by selecting exemplars using the Ardelt 3-Dimensional Wisdom Scale (Ardelt, 2003) and then taking the exemplars biographic narratives. The constituents, like fish in a fish school, move towards action in an organised but fluid manner. The narratives were analysed in two ways (panel interpretation of *lived life* and *told story* and corpus linguistic analysis).

The key tenet of the *Fish School theory* is that **the sum of the constituents is greater than the parts**. Together, as a school, the constituents have a purposeful direction (towards good) in which they move (telos to praxis). The constituents are protected and nourished in this community which results in flourishing (eudaimonia). Achieving practical wisdom through the constituents functioning in this way, is actualising personal potential. The process is about growth.

The paper will take the analogy further describing how the research on enacted phronesis informed the theory, inviting philosophers, psychologists, educationalists, and practitioners to apply the theory to their contexts. It is a plea to revisit academic holism.

Overview

This conference paper will present an innovative theory that seeks to describe phronesis in a way that advances current models. Current wisdom models describe phronesis/practical wisdom in terms of static components. The *Fish School Theory* uses analogy, along with empirically derived PhD data on phronesis, to describe the phronesis as a *process*. It incorporates some key concepts described by Aristotle. The theory derives from an assumption that Aristotle's life significantly influenced his scientific, philosophical, ethical, and political thinking, just as the biographies of wisdom exemplars influenced who they are and how they think, as demonstrated in my PhD research.

The paper will address some of the contemplative questions posed by the Jubilee Centre for this 10th anniversary conference – *"Integrating Research on Character and Virtues".* The conference invites the different disciplines, particularly psychologists, philosophers, educationalists, and practitioners to reflect on their virtue work. They ask, *"Is there anything singular and unified in the new discourses about character and virtues or are different disciplines simply addressing different issues?"* and, *"What are merits and demerits of cross-disciplinarity in the character-and-virtue research fields".*

This paper will look specifically at practical wisdom (phronesis as an intellectual virtue) in Medicine but will be of interest to all disciplines. True medical professionalism has been defined as the *Morality of Medicine* (Bontemps-Hommen, Baart and Vosman, 2019). Medicine is a wonderful culmination of many disciplines, with a moral orientation at its core. The first section will critique the concept of disciplines in relation to wisdom development. This will be followed by a summary of current wisdom models and their shortcomings. I will then present the importance of understanding phronesis as a morally orientated process leading to action. I will give an overview of my PhD research on enacted practical wisdom in medical practitioners and outline the empirically derived 34 constituents of phronesis. Finally, I will link these constituents with Aristotle and with fish, to make phronesis conceptually more accessible to a wider audience. Most importantly, it reconstructs deconstructed knowledge. This quest to reconstruct holism is an important part of wise science.

Disciplines – Friend or Foe?

> *"We must not forget that what is called science is…. a mass of sectional views of reality. The various natural sciences are like so many vultures falling on the dead body of nature, and each running away with a piece of its flesh. Nature as the subject of science is a highly artificial affair, and this artificiality is the result of that selective process to which science must subject her in the interest of precision.*
>
> *(Chittick 2007 p54)*

This fascinating passage evokes strong images of the predatory, selfish nature of disciplines. Chittick cites work by Iqbal in this passage, offering commentary that to achieve precision, modern science extracts things from their overall context. This has resulted in huge advances in specific knowledge but is often devoid of wider moral and ethical considerations. Predating this work, is the work of Leo Tolstoy (1862-1910), who resonates with this sentiment and writes in 'War and Peace'.

> *"Human Science fragments everything in order to understand it, kills everything in order to examine it."* *(Tolstoy, 1993)*

The science of wisdom has an obligation to preserve, or at least reconstruct context and connection. One if the defining features of phronesis is that it is contextual and it adjudicates conflicting values with a 'big picture' in mind.

In an excellent critique by environmentalist David Orr entitled *"The problem with disciplines/ The discipline of problems",* he writes:

> *"We've organized education like mailbox pigeonholes, by disciplines that are abstractions organized for intellectual convenience."* *(Orr, 1993)*

He goes on to say:

> *"Professionalized and specialized knowledge isn't about loyalty to places or to the earth, or even to our senses, but rather about loyalty to the abstractions of a discipline."* *(Orr, 1993)*

This argument about disciplines and knowledge is as much about the global crisis we face now as it is about the focus of this conference. The world needs more wisdom to infuse every aspect of our lives. Almost thirty years on from Orr's paper, we are no further on with the powerlessness of which he speaks:

> *"The great ecological issues of our time have to do in one way or another with our failure to see things in their entirety. That failure occurs when minds are taught to think in boxes and not to transcend those boxes or to question overly much how they fit with other boxes. There is a connection between knowledge organized in boxes, minds that stay in those boxes, and the inability of these minds to perceive the causes of degraded ecologies and global imbalances. The situation is tragic in that many suspect where all of this is leading, but believe themselves powerless to alter it."* *(Orr, 1993)*

A recent powerful editorial in the British Journal of General Practice reiterates this need to *'rewild'.* To value and restore the ecosystems in which we function. This take's Orr's thoughts further by including the moral imperative:

> *"The concept of rewilding has the potential to forge clear links between medical research, primary healthcare, and the health of the planet. All need nurturing and protection from exploitation. All need to be underpinned by a commitment to social justice and equity…. Let's rewild general practice, reconnect with the crucial relationships that really do matter, and rebuild hope for the future of us all."*
>
> *(Heath, 2021)*

I fully appreciate how far disciplinary knowledge has brought us in scientific understanding and advancement, but the pendulum needs to swing to an appreciation of intellectual interconnections and ecosystems. An appreciation of the notion of gestalt – the whole is greater than the parts.

Jack of all trades, master of none?

I am a medical generalist, a family medicine practitioner. As a profession we pride ourselves on attending to our patients as a whole person. Not just as a hip joint, a liver, or a brain. Not just as a diabetic, a hypertensive or a schizophrenic. Sometimes it's all these things with all the complexity that that brings. Wisdom equips us to deal with uncertainty, it is a characteristic feature (Meeks and Jeste, 2009), so why does wisdom research shy away from the complexity by remaining in disciplinary silos? Doctors learn about psychology, anatomy, physiology, pathology, pharmacology, heath economics, to name but a few disciplines within medicine, but we then must marry this with the narrative reality of the patient in front of us.

> *"Knowledge of biology must be combined with an understanding of the power of biography."* *(Lawson, 2021)*

We must attend to both the technical rationality (positivist orientation), and the professional artistry (constructivist orientation) of the job (Fish and Coles, 1998). The work results in action, morally orientated action. There is a Japanese proverb *"Vision without action is a daydream, action without vision is a nightmare"*. Phronesis is about vision and action. Wisdom transcends disciplinary divisions; how can we know what a moral orientation towards 'good' is if we don't think expansively? Yet, science in its disciplines is essentially reductive. Science has become arrogant in its certainty, yet the most prominent scientist of our age e.g. Einstein, Faraday and Darwin were humble enough to recognise uncertainty in their assertions (Rovelli, 2015).

A generalist is not quite a polymath, but there are similarities. Both approach problems with a diverse portfolio of mental understanding and knowledge. They can make abstract connections that others will not appreciate, this could result in radical creativity and innovation. Aristotle was considered one of the greatest polymaths of all time. When we imagine what he meant by phronesis, we need to appreciate his expansive mind.

> *"What polymaths realise by studying different branches is that many of them have the same foundation, and if this foundation is deeply understood then all they need to do is apply that ingrained knowledge to a different context rather than do the work of surface level specialisation."* *(Rana, 2018)*

Current Wisdom models and their shortcomings

Over the last 30 years the psychologists have been prolific in their conceptualisations of generalised wisdom (Sternberg, 1990; Sternberg and Gluck, 2019). These models, which often lead to measurement, can be categorised as performance based or self-reported. These often lack a moral orientation and do not quite equate to Phronesis. Over the last 5 years much progress has been made in aligning psychological and neo-Aristotelian wisdom models. This is evident in the Common Wisdom Model (Grossmann *et al.*, 2020a; Grossmann *et al.*, 2020b). This model includes moral aspiration and perspective metacognitive skills. Yet, the common wisdom model has been criticised for lacking the important emotional dimension of practical wisdom (Glück, 2020). The neo-Aristotelian Virtue Ethicists have devised a 4-component model of phronesis, and this shows promise, but it has been criticised for duplicating what psychologists have been suggesting for a while (Lapsley, 2019). All the models seem to be deficient in some respect. Wisdom is poorly

defined, and it means different things to different people (self-transcendence/personality type/stait or trait?), therefore coming up with a model is challenging. One of my biggest criticisms of the models to date is that they do not convey practical wisdom as a growth orientated process.

The Enacted Phronesis in General Practitioner Study (EPGPS)

'Enacted Phronesis in General Practitioners' was the title of my PhD work (available on the UBIRA e-Theses database). Following an extensive literature review looking at *'Phronesis in Medicine'* across six databases from 1946 to Feb 2020, 68 papers were critically analysed. The literature review was then divided into twelve sections which summarised the past, present, and future applications of phronesis in medicine and medical education. It was evident that there was little empirical work on phronesis, particularly looking at wisdom exemplars. Some authors had expressed the necessity to study exemplars (Grossmann, 2017; Glück, 2020). This gap in the literature was the starting point for the empirical work.

The study design required much deliberation, largely because of the commitment to holism and the desire to resist the reductionism that comes with positivism. The methodology had to align with the philosophy of phronesis. Another challenge was a commitment to select exemplars in a just, equitable way. Previous research (on non-medics) used networks and snowball samples, which I felt was inherently bias and non-inclusive (Krafcik, 2015; Massingham, 2019). A wisdom scale measurement was felt the best way to obtain a representative sample, but to this day there is no reliable, validated measure of phronesis, though the Jubilee Centre feel they are close to finalising an instrument (Kristjansson *et al.*, 2020). Having reviewed a selection of wisdom scales, a scale was chosen that best aligned with the concept of phronesis. The Ardelt 3-dimensional wisdom scale encompassed elements of cognitive processing, reflective thought, and a predisposition towards having compassionate character (affect). Clinical authors have agreed this is a good approximation of the wisdom required to practice medicine (Plews-Ogan *et al.*, 2016; Kaldjian, 2019).

Wisdom exemplars were identified by the questionnaire (approx. 10% of whole sample N=211 met the criterion for a high wisdom score), but this was not enough in satisfying the moral orientation of phronesis. Biographic narratives were taken from the outliers. Narrative is thought to be the best way to understand moral motivations (MacIntyre, 1981). The transcripts were deconstructed in two ways. One was by utilising a panel to interpret the *lived life* and *told story* of the exemplar. This was using Wengraf's BNIM method (Wengraf, 2016). This resulted in a vignette statement for each outlier. A second method looked at the transcripts as a collective to determine what the exemplars were thinking about when narrating their story (corpus linguistic analysis). It must be stressed at this point that only one single question was asked, meaning their narrative flow (gestalt) was uninterrupted. The single question inducing narrative (SQUIN) was:

> *"I am interested in your experience in the things/events and influences that have made you the doctor you are now. I'd like you to tell me all about it, in your own way. Tell me what has been important for you. I won't interrupt. I'll just take some notes, so please do begin".* *(Wengraf, 2016)*

By collating the themes from the deconstructed empirical findings, 34 constituents for practical wisdom were derived. They were specific to the family medicine practitioners studied. Other professions may end up with slightly different constituents. The methods are relatively reproducible.

Qualities	Contexts	Mental Habits	Knowledge of Self	Relational
Intellectual Humility	Broad life experience	Optimism	Self-competitive	Commitment to Justice
Openness	Difficult times	Embrace different perspective	Best version of self	Value human connection
Value Driven	Enjoy Challenge	Critical thinking	Strong sense of Agency and self determination	Feeling love (giving and receiving)
Self-Aware	Reframe	Accept uncertainty as normal	Healthy Boundaries	Good communicator
Intuitive	Failing is falling forward	Judgement in context	Internal motivators	Empathy and the Golden Rule
Reflective learner		Guidelines are just guides		Other-centred
Growth orientated		Innovative		Compassionate action
		Forward thinking		Activism
		Resilient		

These 34 constituents mean little when presented as nested lists on a page. They are interesting and useful as a checklist for developing phronesis, many align with the psychologists work on wisdom. It may even be helpful in devising medical curricula which focusses on metacognitive aspects of the practice. This list does not explain what phronesis is. Therefore, further reconstruction was considered, and this led to *The Fish School Theory of Practical Wisdom* conceptualisation.

Phronesis – A process unification

Phronesis has a moral orientation and results in action, it is not stagnant. It involves movement towards ethical action. Phronesis is practical wisdom, it is inherently pragmatic. Any model that purports to represent phronesis must make this a central feature. Not only is it a process that leads to action it is also integrative, adjudicative, and holistic. Cognition can affect emotions, just as emotions can affect cognition (these are often linearly described in psychological literature). The constituents are interconnected, often inseparable. They are an integrated eco-system.

Does it really matter which comes first (cognition or emotion)? I would argue it does not matter, the most important thing is the direction and motivation behind the aggregation. Reflected in the underlying values and the moral aspirations exhibited in the character of an

individual. That is why it is so important to look at exemplars, their thought processes, their influences, and motivations. Has anyone done this for Aristotle? Has anyone contemplated "*the experiences, the things/events and influences"* that have made him the magnificent polymath he was?

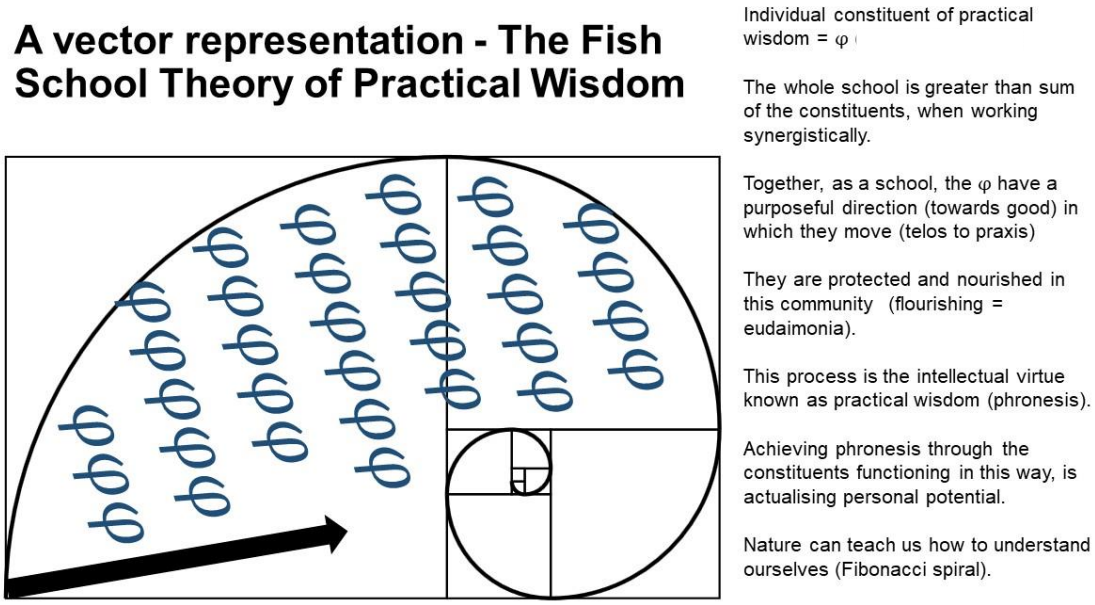
Detailed accounts of Aristotle's life are absent, but it is thought both his parents were medical. His father being the physician to the King of Macedonia at the time. Aristotle was born in 384 B.C in Stagira, Northern Greece. He was Macedonian, and there was occasional ethnic tension between the Macedonians (ancient Greeks) and the 'Greeks'. His parents died when he was young. At the age of 17 he was enrolled to Plato's Academy in Athens. He spent 20 years at the Academy both as a student and a lecturer. Most of his greatest work were not written in books but captured in the form of lectures he delivered. Aristotle left the Academy when Plato died. He fled to the coast of Asia Minor where he lived on the Islands of Lesbos and Assos. He stayed there for 5 years, he married, started a family and he spent the majority of his time studying fish (History.com, 2021). In that time, he wrote 21 books on fish. He is known as the first Ichthyologist (Marine Biologist).

> *"Aristotle's inquiry was not limited or focused on fish that were of human interest, but he also reported or described species that fascinated him by their peculiar life history. He was interested in a wide array of aspects of fish biology ranging from body structure and function, reproduction and development to fish feeding habits, migrations, and diseases. As evidenced by his work, Aristotle should be considered the first ichthyologist, preoccupied with the zoological, scientific study of fish".*
>
> *(Ganias, Mezarli and Voultsiadou, 2017)*

Aristotle was fascinated and curious. Have you ever pondered on the beauty and elegance of a fish school? Why do they do that? What is the benefit? Nature often holds the secrets to wise existence. Imagine you immerse yourself in the study of a natural environment for years. Your reflections and your learning from this environment become hardwired in your conscious and subconscious mind influencing your ideas and thoughts. This is why narrative is so insightful in understanding people.

The quote by Connell in the abstract of this paper suggests that Aristotle himself did not distinguish different disciplines, but instead Connell suggests we must approach his work as representative of his whole philosophical outlook. In a commentary on the wider scientific work of Aristotle on animals, Grumett makes some remarkable observations. He suggests that Aristotle's concepts of *telos* and *eudaimonia* were inspired by studying animals (Grumett, 2019). Aristotle wrote that an animal's telos is identified by observing its function within its wider ecosystem. The *Fish School theory* of practical wisdom stays true to Aristotle's thinking and is inspired by the natural world. The *Fish School theory* reconstructs phronesis as a process, diverging from previous wisdom research that has not attempted this.

> "*In all things of nature there is something of the marvellous."*
>
> Aristotle. Parts of Animals.



Each of the phi symbols (φ) represent a constituent of enacted phronesis, (we will refer to them as phish). There are 34 phish in the figure above equating to the 34 constituents of enacted phronesis as empirically derived from the EPGPS work There may be more or less phish when phronesis is enacted in a different discipline/profession. Each of the phi represent a fish in a school. The fish school theory is an analogy-theory where the characteristics of the fish school are compared to the process of phronesis.

A fish school is a collection of fish who swim in the same direction in a co-ordinated manner. The diagram above shows an arrow which indicates the collective direction of travel. The fish form an adaptive system. They have a purposeful direction, a telos. Compare this to phronesis which is orientated towards good, with moral grounding. The concept of moral grounding can be compared to a complex sensory system within a fish called a *lateral line*. It is thought to control behaviour and is particularly important for fish school synchrony (Popper and Higgs, 2009). This is analogous to the values (a collection of virtues) that a person brings to the process of phronesis; we can compare this to a moral compass.

The fish work together, sometimes behind, sometimes ahead of their neighbour, working in concert, co-ordinated but not fixed. If we note that some constituents of phronesis are cognitive and some are emotional, we can translate the positional flexibility as representing the concept of cognition creating feelings, as well as appreciating that feelings inform cognition. This interplay was suggested by Ardelt when she devised her wisdom scale. She states reflection, cognition and affect inform each other (Ardelt, 2003). De Caro and Marraffa suggest that reason and emotion should never be thought of as separate or hierarchically ordered (De Caro and Marraffa, 2016). Phronesis works through cognition and emotion in a way that cause and effect cannot be separated. For any particular profession, some virtues are exceptionally important, and not simply a part of baseline moral grounding, they become a constituent (phish) on their own, this can be seen in the case of compassion and justice for the doctors studied.

In the slip stream of another fish, some fish can function better (Marras *et al.*, 2015). This can be compared to the constituent phish that work synergistically in the six categories in the previous table (qualities, contexts, mental habits, knowledge of self, relational aspects, and

practical action). The fish school serves to efficiently protect the fish and ensure they are all nourished (Marras *et al.*, 2015; Pavlov and Kasumyan, 2000). This equates to eudaimonia, the goal of the fish school is flourishing.

There is unity and fluidity in the collective response of the school. This synchrony is the process of phronesis. The whole (school) is greater than the sum of its parts (fish). Phronesis is not simply its constituents. In Aristotle's time this was the study of merology. This also forms the basis of Gestalt theory which was integral to the BNIM data collection and analysis (Wengraf, 2001). The choice of research methods (3DWS and BNIM) has enabled the deconstruction and subsequent reconstruction of enacted phronesis.

Within this process is a prerequisite for intellectual humility because this process (phronesis) can alter long held beliefs. Openness is needed to accept that fact. The fish school theory recognises that a person brings their beliefs and values with them which in turn influence their perception.

If the social grouping of the fish is disrupted it can lead to stress, (the converse related to phronesis promoting wellbeing). Schools of fish rarely flourish in artificial environments. It has been observed that priorities change from the focus on swimming stamina to a focus on risk perception and (fear) behaviour (Lemasson, Haefner and Bowen, 2014). The school needs the right environment to work effectively. Phronesis needs a suitable environment to develop, this will be on a personal and organisational level.

Finally, this analogy refers to a school. A school is a mode of learning. Practical wisdom is a process to enhance personal and professional development. A person can actualise their potential if the process is optimised. The final element of the abstract representation is the Fibonacci curve, it is repeated through nature from micro to macrolevels (Newton, 1987). We can learn so much from nature and the *Fish School theory* seeks to aid a greater understanding of phronesis as a process.

Conclusion

This paper outlined empirical PhD work that looked at enacted practical wisdom in medical doctors. It showed how derived constituents of phronesis were reconstructed into a process using analogy theory.

Phronesis is a useful conceptualisation for the work of medical professionals. Despite its evident usefulness as a heuristic underpinning professionalism (and ultimately flourishing), it is a very unknown term in medical arenas. Even if the word becomes known, the nuances of its meaning and its complex adjudicative and integrative function can get lost in disciplinary rhetoric and competitive notions of who has the greatest claim to it. In some literature phronesis is only applied to moral decision making. In real life is that well demarcated? When we think about our lives and our purpose in the world, doesn't everything have a moral dimension?

Phronesis transcends disciplines and ownership. It is time to be expansive, to embrace complexity and holism….to rewild. Phronesis is a complex ecosystem, and we have a responsibility to make connections and share our understandings for the greater good.

It is impossible to be good in the full sense of the word, without practical wisdom ***or to be a man* of practical wisdom without moral excellence or virtue.***
[Nicomachean Ethics VI,1144b-30]

Schwartz citing Aristotle (Sternberg and Gluck, 2019)

(***** or woman)

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