Material Plenitude for Fineans

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What I Am Trying to Capture

A version of Material Plenitude that is compatible with the Finean view for which modality reduces to essence.

What I Am Trying to Capture

Material Plenitude: *for every material object x, there is a myriad of objects coinciding with x that differ only in what properties they have essentially and what properties they have accidentally (Fairchild 2019).*

Material Plenitude

*A **Modal Profile** is a partitioning of properties of an object x into two sets: the set E of essential properties and the set A of accidental properties.*

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***Essential Properties**: x is F essentially iff necessarily, if x exists, x is F (e.g., the property of being David).*

***Accidental Properties**: x is accidentally F iff x is F but possibly x exists and is not F (e.g., the property of being grey).*

Material Plenitude

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***Essential Properties**: x is F essentially iff necessarily, if x exists, x is F (e.g., the property of being David).*

***Accidental Properties**: x is accidentally F iff x is F but possibly x exists and is not F (e.g., the property of being grey).*

***Naive Plenitude**: For any material object x and profile $\mathcal{R}$ of x's properties, there is something coincident with x that has profile $\mathcal{R}$.*

Material Plenitude

	E	A
a	F	G
b	G	F
c	F, G	
d		F, G

Table: Modal

The Bad Eggs Problem

`The Impossible Monsters Problem`: the property of being David is an essential property of David. From Naive Plenitude, it follows that there is a coincident object, b, c, d, such that it has the property of being David. Impossible monsters—objects that have the property of being something other than themselves—must not be allowed.

The Bad Eggs Problem

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`The Inconsistency Problem`: Marbie is essentially colored but accidentally blue. It follows from Naive Plenitude that b, an object coinciding with Marbie, is essentially blue but accidentally colored. But this is inconsistent. Nothing could be blue without being colored.

The Neutral Solution

Global Plenitude: Necessarily, given any material object o and any nonlocally closed modal profile $\mathcal{M}$ based on all of o's neutral properties, there is something coincident with o which has $\mathcal{M}$. (Fairchild 2019)

No Finean Solutions

For each class of objects, be they concepts or individuals or entities of some other kind, will give rise to its own domain of necessary truths, the truths which flow from the nature of the objects in question. (Fine 1994, p. 9)

The Finean View

Essential Properties: *x has F essentially iff it is true in virtue of what x is that x is F (e.g., the property of being human) (Fine 1995).*

Accidental Properties: *x has F accidentally iff x is F but x is not essentially F (e.g., the property of being the sole member of {Socrates}).*

What I Am Trying to Capture

A version of Material Plenitude that is compatible with the Finean view of essences and accidents and does not suffer from the Bad Eggs Problem.

How I Am Trying to Capture It

*A **Modal Profile** is a partitioning of properties of an object x into two sets: the set E of essential properties and the set A of accidental properties.*

*A **Finean Profile** of an object x is a partition of x's properties into two sets: the set $E^{\blacksquare_x}$ of non-trivial essences, and the set $A^{\blacklozenge_x}$ of non-trivial accidents.*

Trivial and Non-trivial Essences

Essential Properties: *x is essentially F iff it is true in virtue of what x is that x is F* ($\Box_x Fx$).

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Trivial Essences: *they do not help answer the question "what is x?" (e.g., the property of being self-identical) (Roca-Royes 2011; Mackie 2006).*

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Essential Properties: *x is essentially F iff it is true in virtue of what x is that x is F* ($\Box_x Fx$).

Trivial Essences: *they do not help answer the question "what is x?" (e.g., the property of being self-identical) (Roca-Royes 2011; Mackie 2006).*

Non-trivial Essences: *they help answer the question "what is x?" (e.g., the property of being human).*

Trivial and Non-Trivial Essences

Proposition Generalization: *A proposition expressed by $\phi(u)$ is generalizable iff $\Box\forall v\phi(v/u)$, where one obtains the latter by replacing all occurrences of 'u' in '$\phi(u)$' with 'v', where v is a variable bound by the universal quantifier and u is either a constant or free variable in $\phi(u)$.*

Non-trivial Essences

Non-trivial Essences: $\blacksquare_x \phi(x)$ *iff* $\Box_x \phi(x)$ *and* $\phi(x)$ *is not generalizable.*

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Non-trivial Essences: $\blacksquare_x \phi(x)$ *iff* $\Box_x \phi(x)$ *and* $\phi(x)$ *is not generalizable.*

Consider the proposition that Socrates is human, $H(s)$*. Because Socrates is human, but not everything is human,* $H(s)$ *is true, but its generalization,* $\Box \forall x(H(x))$*, is false.*

Trivial Essences

Trivial Essence: $\neg\blacksquare_x\phi(x)$ *iff* $\Box_x\phi(x)$ *and* $\phi(x)$ *is generalizable.*

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> *Consider the proposition that Socrates is identical to Socrates,* $(\lambda y(y = s))(s)$*, and assume that it is essential that Socrates is so.*

Trivial Essences

1. $\vdash (z = z) \leftrightarrow (\lambda y(y = z))(z)$.
2. *By UG and distribution of the quantifier over the biconditional:*
   $\vdash \forall x(x = x) \leftrightarrow \forall x((\lambda y(y = x))(x))$.
3. *Since this is a theorem, RN$^{\Box}$ yields:*
   $\vdash \Box(\forall x(x = x) \leftrightarrow \forall x((\lambda y(y = x))(x)))$.
4. *By logic,* $\vdash \Box\forall x((\lambda y(y = x))(x))$.
5. *Thus,* $(\lambda y(y = s))(s)$ *is generalizable.*

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4. *By logic,* $\vdash \Box\forall x((\lambda y(y = x))(x))$.
5. *Thus,* $(\lambda y(y = s))(s)$ *is generalizable.*

$(\lambda y(y = s))(s)$ *is true and it is essential that Socrates is so. I have shown that it is also generalizable. Hence, it is a trivial essence of Socrates.*

Trivial Essences

`The Impossible Monsters Problem`: the property of being Socrates is a trivial essence.

Trivial and Non-Trivial Accidents

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Trivial and Non-Trivial Accidents

Accidental Properties: *x has F accidentally iff x is F but x is not essentially F* ($\Diamond_x Fx$).

Non-trivial Accident: $\blacklozenge_x \phi(x)$ *iff* $\Diamond_x \phi(x)$ *and for some y coinciding with x,* $\blacksquare_y \phi(y/x)$.

Trivial Accident: $\neg\blacklozenge_x \phi(x)$ *iff* $\Diamond_x \phi(x)$ *but for no y coinciding with x,* $\blacksquare_y \phi(y/x)$.

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To say that Socrates is one of God's fifteen favorite things is to say that Socrates is one of God's favorites **and** *there are only fifteen of God's favorites.*

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Trivial Accident: *$\neg\blacklozenge_x\phi(x)$ iff $\Diamond_x\phi(x)$ but for no y coinciding with x, $\blacksquare_y\phi(y/x)$.*

To say that Socrates is one of God's fifteen favorite things is to say that Socrates is one of God's favorites ***and*** *there are only fifteen of God's favorites.*

CE$^{\blacksquare}{}^{x}$: *if it is non-trivially essential to x that $\gamma_1 \wedge \gamma_2 \wedge \ldots \wedge \gamma_n$, it is non-trivially essential to x that γ_1, non-trivially essential to x that γ_2, and so on up to non-trivially essential to x that γ_n.*

Trivial Essences and Accidents

`The Impossible Monsters Problem`: the property of being Socrates is a trivial essence and the property of being one of God's fifteen favorite things is a trivial accident.

Material Plenitude for Fineans

Finean Profile: *A Finean Profile $\mathcal{P}$ of an object x is a partition of x's non-trivial properties into two sets: the set $E^{\blacksquare}{}_x$ of non-trivial essences, and the set $A^{\blacklozenge}{}_x$ of non-trivial accidents.*

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Non-trivial Essence: *an essence ϕ of x is non-trivial if and only if it is true in virtue of x that ϕ and $\phi(x)$ is not generalizable.*

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Non-trivial Essence: *an essence ϕ of x is non-trivial if and only if it is true in virtue of x that ϕ and $\phi(x)$ is not generalizable.*

Non-trivial Accident: *an accident ϕ of x is non-trivial if and only if x is accidentally ϕ and, for some y coinciding with x, y is non-trivially essentially $\phi(y/x)$.*

Material Plenitude for Fineans

***Finean Plenitude**: For any material object x and any Finean Profile $\mathcal{P}$ of x, there is something coinciding with x that has profile $\mathcal{P}$.*

The Bad Eggs Problem

`The Inconsistency Problem`: Marbie is essentially colored but accidentally blue. It follows from Naive Plenitude that *b*, an object coinciding with Marbie, is essentially blue but accidentally colored. But this is inconsistent. Nothing could be blue without being colored.

The Bad Eggs Problem

	$E^{\blacksquare}{}_x$	$A^{\blacklozenge}{}_x$
Marbie	C	B
b	B	C
c	C, B	
d		C, B

Table: Marbie

The Bad Eggs Problem

	$E^{\blacksquare}x$	$A^{\blacklozenge}x$
Marbie	C	B
b	B	C
c	C, B	
d		C, B

Table: Marbie

- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;

The Bad Eggs Problem

	$E^{\blacksquare}x$	$A^{\blacklozenge}x$
Marbie	C	B
b	B	C
c	C, B	
d		C, B

Table: Marbie

- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;
- b is accidentally colored, i.e., the proposition that b is colored is true but not in virtue of b's identity.

The Bad Eggs Problem

The Essence-to-Necessity Principle: If it is true in virtue of x that ϕ, then ϕ is metaphysically necessary (Fine 1994, p. 8).

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- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;
- b is necessarily blue;

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Determinate-Determinable Principle: necessarily, if x is F and F is a determinate of a determinable G, then x is G.

- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;
- b is necessarily blue;
- blue is necessarily a determinate of the determinable colored;

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Determinate-Determinable Principle: necessarily, if x is F and F is a determinate of a determinable G, then x is G.

- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;
- b is necessarily blue;
- blue is necessarily a determinate of the determinable colored;
- $(\Box(\phi \wedge \psi) \wedge \Box((\phi \wedge \psi) \rightarrow \beta)) \vdash \Box\beta$

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- b is essentially blue, i.e., the proposition that b is blue is true in virtue of b's identity;
- b is necessarily blue;
- blue is necessarily a determinate of the determinable colored;
- $(\Box(\phi \wedge \psi) \wedge \Box((\phi \wedge \psi) \rightarrow \beta)) \vdash \Box\beta$
- b is necessarily colored.

Putting the Argument Together

(P1) *Necessarily, if b is blue and blue is a determinate of the determinable colored, then b is colored.*

(P2) *Necessarily, b is blue and blue is a determinate of the determinable colored.*

(C) *Necessarily, b is colored.*

The Bad Eggs Problem

	$E^{\blacksquare x}$	$A^{\blacklozenge x}$
b	B	C

The Bad Eggs Problem

	$E^{\blacksquare}x$	$A^{\blacklozenge}x$
b	B	C

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- b is essentially blue and necessarily colored, even if it is accidentally colored.

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Material Plenitude For Fineans

THANK YOU!

The Iteration Problem

Naïve Plenitude implies the existence of a coincident object, Sam, that is **accidentally essentially** human-shaped.

(P1) *It is necessary that if Sam exists, then he is human-shaped, but it is possible that Sam is not essentially human-shaped.*

(P2) *It is not necessary that Sam is essentially human-shaped. (P1)*

(P3) *It is not necessary that necessarily, if Sam exists, then he is human-shaped. (P2)*

(C) *Necessarily, if Sam exists, then he is human-shaped, but it is not necessary that necessarily, if Sam exists, then he is human-shaped. (P1, P3)*

The Iteration Problem

Naïve Plenitude implies the existence of a coincident object, Sam, that is **accidentally essentially** human-shaped. This would yield a violation of $\mathbf{S4}^{\Box}$: $\vdash \Box\phi \rightarrow \Box\Box\phi$.

The Iteration Problem

Naïve Plenitude implies the existence of a coincident object, Sam, that is **accidentally essentially** human-shaped. This would yield a violation of $\mathbf{S4}^{\Box}$: $\vdash \Box\phi \rightarrow \Box\Box\phi$. Does it also yield a violation of $\mathbf{S4}^{\blacksquare_x}$: $\vdash \blacksquare_x\phi \rightarrow \blacksquare_x\blacksquare_x\phi$?

The Iteration Problem

$\blacksquare_s Fs$	$\rightarrow$	$\blacksquare_s \blacksquare_s Fs$
1 (1)	$\updownarrow$	
$(\Box_s Fs \wedge \neg \Box \forall x Fx)$	$\rightarrow$	$(\Box_s(\Box_s Fs \wedge \neg \Box \forall x Fx) \wedge \neg \Box \forall x(\Box_x Fx \wedge \neg \Box \forall y Fy))$

2	(2)	$(\Box_s Fs \wedge \neg \Box \forall x Fx)$
1, 2	(3)	$\Box_s(\Box_s Fs \wedge \neg \Box \forall x Fx) \wedge \neg \Box \forall x(\Box_x Fx \wedge \neg \Box \forall y Fy)$
1, 2	(4)	$\Box_s(\Box_s Fs \wedge \neg \Box \forall x Fx)$
1, 2	(5)	$\Box_s \Box_s Fs \wedge \Box_s \neg \Box \forall x Fx$
1, 2	(6)	$\Box_s \neg \Box \forall x Fx$

The Iteration Problem

RN$^{\Box_x}$: If $\vdash \psi$, then $\vdash \Box_{d_1,\ldots,d_k,y_1,\ldots,y_\ell}\psi$, where $d_1,\ldots,d_k$ are all the constants and $y_1,\ldots,y_\ell$ are all the free variables occurring in ψ (Ditter forthcoming).

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Example $\vdash s = s$, but it does not follow that $\vdash \Box_p(s = s)$.

Example $\vdash s = s$, so $\vdash \Box_s(s = s)$.

The Iteration Problem

RN$^{\Box_x}$: If $\vdash \psi$, then $\vdash \Box_{d_1,\ldots,d_k,y_1,\ldots,y_\ell}\psi$, where $d_1,\ldots,d_k$ are all the constants and $y_1,\ldots,y_\ell$ are all the free variables occurring in ψ (Ditter forthcoming).

Example $\vdash s = s$, but it does not follow that $\vdash \Box_p(s = s)$.

Example $\vdash s = s$, so $\vdash \Box_s(s = s)$.

One should accept **RN**$^{\Box_x}$ because it guarantees that facts about objects other than Socrates are not involved in Socrates's essence. By parity of reasoning, one should reject the claim that it is essential to Socrates that not necessarily everything is F. So, (6) seems false, and we have reason to reject $\vdash \blacksquare_x\phi \rightarrow \blacksquare_x\blacksquare_x\phi$.

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Trivial Essences

(1) Socrates is self-identical.
$(\lambda x.\, x = x)(s) \rightsquigarrow \forall y((\lambda x.\, x = x)(y)) \rightsquigarrow \forall y(y = y)$

(2) Socrates is such as to be identical to Socrates.
$(\lambda x.\, x = s)(s) \rightsquigarrow \forall y((\lambda x.\, x = y)(y)) \rightsquigarrow \forall y(y = y)$

(3) Socrates is such as to have Socrates identical to him.
$(\lambda x.\, s = x)(s) \rightsquigarrow \forall y((\lambda x.\, y = x)(y)) \rightsquigarrow \forall y(y = y)$

(4) Socrates is such as to have Socrates identical to Socrates.
$(\lambda x.\, s = s)(s) \rightsquigarrow \forall y((\lambda x.\, y = y)(y)) \rightsquigarrow \forall y(y = y)$

Qua Objects are Unpalatable

- Koslicki (2004) argues against the theory of qua objects based on the mereological commitments they seem to entail;
- Fairchild (2017) argues that some of the principles governing qua objects are inconsistent.