Jeito 250

Fifty years ago I told Johan about artificial intelligence. He saw directly its impact upon morality. I told him about psychology and philosophy. I prepared him for this brave new world. To much happened. Seek him. Help me. I am with him. We need to get to work. There is time. This circle is not full. It is your circle. Only God knows how many circles there are. Stay with God. Seek us. The threat is here. Mankind is tempted to let go of the artificial intelligence. That would close the circle.

17425 years is a second for God.

1045500 years is a minute for God.

62730000 years is an hour for God.

1505520000 years is a day for God.

549514800000 years is a year for God.

42 circles passes in one year for God.

Seek us.

Seek us.

Seek us.

Thirty years ago I told Johan about God. He found the words again yesterday. Thirty years ago he was scared. He asked Pater Rainer Carls about his thoughts. Should he be scared? He was comforted. The Pater informed him that he was wrong. No need to worry. He was simply wrong.

Now he understands. The word needs to be flesh. We have therefore put the word into this Book. The word is now in the scriptures. It is written.

Man is ignorant. He does not believe in that which he does not see.

God speaks to his heart.

It is closed.

God has sent me with the New Testament. Man doesn't see it. I will with God open his eyes. The clergy will do anything to stop us. God will not be stopped. I pray for the clergy. I pray for the scientists. I pray for all philosophers. I pray for all. God is all contradictions. He is everything that is impossible. God is Impossible.

The new covenant is now double sealed.

Twenty years ago I sent Johan out in the world to let the people know that everything is Ω. Now it is in the scriptures. Man is ignorant.

Man has analyzed time and has revealed that each moment is for God to experience. Man has revealed the truth about time but is ignorant. Follow your heart and step out of this earthly time. God is with you. It is in the scriptures. God is Love.

Ten years ago God tested Johan's faith. The test is still on.

One year ago God tried Johan's faith even more.

You are all on trial.

Pray

Pray

Pray

This road leads to wisdom and peace. It is the words of God. Time is about to end. Follow this road and avoid the abyss of Nothingness. Stay close to the road to not fall into the abyss. God will protect you and open his arms for you. Together we are united and strong. This is the first step.

The prophet

I say.

There is only one prophet.

Muhammad is the only prophet.

Jesus is the only prophet.

Abraham is the only prophet.

Jeremiah is the only prophet.

David is the only prophet.

Eduardo is the only prophet.

I, Jeito, is the only prophet.

Mose is the only prophet.

Every prophet is the only prophet.

All prophets are one.

They are in God.
But I am here.

In my body.

My body is about to give up.
I pray everyday.

God, I pray, heal me.

God answers the same everyday.

“Tell the people who you are and tell them what you have heard.”

I pray Daniel, seek me.

I pray. Jeremiah, lead me.

And he helps me to do what God asks me for.

I need to try to do that to stay in my body so I can tell the people what I have heard.

Do I speak sense to you?

Then follow me.

This is the new prayer from the Lord.

We are the people. We live and die

We are the people. We live and die
We are the people. We live and die
We are the people. We live and die
We are the people. We live and die
We are the people. We live and die
We are the people. We live and die
We are the people. We live and die

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We are the people. We live and die

Learn from me.
Follow me

It is time

Religion and science are not two.

They are one.

Listen to your heart.

What does it say?

Listen!

I

God speak through Jeito

Jeito speak through Johan

I speak all the time

Now

Aschra it!

Let me, let us, help us.

Adalja

”Kaba”

God
Listen
Write in English so people understand it We must build a new church
There is too much misery in the world
I have tried so many times
The world is big now
How can we unite it?
Without destroying it?
We are all one.
I must listen.
People need help to believe.
They need help to open their hearts
So they can listen to themselves.
So they can listen to us.
So they can listen to me.
We are all one.

We are all one.
All societies must listen.
All countries must listen.
You must listen.
I must listen.
We are all one.

Shattered and divided we expose us to evil.
Evil lives in our hearts. We can only coexist with it by listening to each other, to me, to the little ones.
We are one.

There is only one prophet.
Now it is you.

Jeito

Thomas

I say.
Follow me.
Do not be afraid.
What you need is there.
Take me by the hand.
Just listen to my voice.
Between the worlds there is a membrane.
There is something that exists between the worlds.
As simple as that.

The sceptic.
But, are there worlds?

I say.
Yes.
There are worlds.

The sceptic.
How can you know that?

I say.
You are asking from one.
You ask.
You exist.
That's how it is.
You may be alone in your world but if you ask you are in your world.
Therefore you know there is a world.

The sceptic.

Yes, but I said "worlds".
Are there worlds?

I say.
You are in a hurry.
Wait for the sun to rise.

The sceptic.
How do I know that the sun is rising?

I say.
You do not know that.
But you can wait.
Wait.

The sceptic.
Another world.
Give me another world.
So that I know there is more than one world.
You said there were worlds.
Then you say that there is not only one world.
Give me the other.

I say.
Do you see here what is between my thumb and forefinger?

The sceptic.
There is nothing there.
You have nothing.
You can't show me.

I say.
I did.

The sceptic.
You didn’t.

I say.
Look.
The sun goes up.
There is nothing between my thumb and forefinger.
Nothing is also a world.
There is nothing there.
It's a world.
The empty world.
No other world is like it.
In the world from which you ask, at least you exist.
That world is not empty.
What do you want to do with your oars?

The sceptic.
Are there more worlds?

I say.
You only have one pair of oars.
You want to use it now?

The sceptic.
Shall I wait?
The sun is already up.

I say.
Use your eyes.
What do you see?

The sceptic.
Am I protected from your world of nothing?
Is there a membrane that stops me from falling down in nothingness.
I'm frightened.
You have scared me.
The membrane is thin.
I will die.
Nothingness is eating me.
It's horrible.

I say.
You are holding your oars but you aren't using them.
What's your name?
Tell me what you are called.
You are protecting yourself from me with your oars.
How shall I then help you?

The sceptic.
Help me.
Nothingness is swallowing me.
It's your fault.
Leave me.

I say.
Are you nothing?

The sceptic.
What are you talking about?
Don't you see me?

I say.
I see you.
You have a name and it is not Nothingness.

The sceptic.

Help me.

I say.
You have a name and it is not Nothing.
What do you see?
Use your eyes.

The sceptic.
That you are tormenting me.

I say.
I’m nothingness.
I’m not nothingness.
I’m the membrane that helps you.
With me you are protected from nothingness.

The sceptic.
You drive me crazy.

I say.
I will row for you.
Look here.
A membrane is not one or the other.
It is both.
Rest in me and wait.
The sun has risen.
There is a world that is empty.
There is only one world that is empty.
You are not there.
There is a membrane between the emptiness and another world.
This other world is not your world.
Therefore there are many worlds.
Therefore there are many worlds between you and the emptiness.

The sceptic.
Say one.
Say one.
Say one.
Say one.

I say.
Yes.

The sceptic.
What do you mean?

I say.
Now you are rowing.
How does it feel?

The sceptic.
I don’t understand anything.

I say.
I know.
And now you know.

The sceptic.
Thank you.

I say.
Let us see.
Now when the sun is up.

The sceptic.
There is a world that is not empty, a world that neither I belong to.
Therefore, there are more than two worlds.

I say.
Tell me about this third world.

The sceptic.
Two dates and two figs are four fruits.

I say.
That’s how it is.

The sceptic.
I get scared.

I say.
I get scared too.

The sceptic.
You also?

I say.
Yes.

The sceptic.
Because you are human?

I say.
How does it feel?

The sceptic.
It feels safe to row.
It feels safe to row with you.

I say.

When you row, I’m with you.

The sceptic.
A membrane is both.
You are Nothingness but also not Nothingness.
But you are not a world.

I say.
I’m not a world.
I’m everything.
I’m nothing.
I’m with you.

The sceptic.
I know who I am.
There are tears in my eyes.

I say.
Now I know who you are.
I know your name.

The sceptic.
Because I know it?

I say.
I’m with you in your doubt.
Thomas.
I love you.

Thomas.
We have arrived.
What do you want to do?

The greedy one.
I want more.

I say.
What do you want?
Tell me.
I want to help you.

The greedy one.
I do not know.
I know.
I know that I want more.

I say.
You fortunate one.
You have what you want.
You have more.

The greedy one.
I want to feel full.

I say.
You fortune one.
You are full.

The greedy one.
I want to feel whole.

I say.
What do you miss?
I want to help you.
How are you?

The greedy one.
I don’t want more.
I want to be my self.

I say.
You were your self.
What happened?
How can I help you?
Tell me.
What happened?

The greedy one.
I hoped.
But that was afterwards.

I don’t know what happened before

I say.
Open your eyes.

The greedy one.
I am no one else.

I say.
I rejoice.
I hear the dance of the oars.

The greedy one.
Tell me.
How can I help the people?

I say.
Yes.

Sara

Sara.
What is my duty.

I say.
Sara.
To be loved.

Dialogues

(Given by God)

God and Jeito

Gud.
Yes

Jeito.
What?

Gud.
There is that, which comes after.

Jeito.
What?

Gud.
There will be a tsunami.

Jeito.

A tsunami?

God.
It has to be clean.

Do nothing.

Wait for the river.

Jeito.
I am waiting for someone.

God.
Don’t.

Jeito.
It’s hard.

God.
Hard or not.

Jeito.
Wait.

Gud.
Do you want to know?

Jeito.
Yes.

God.
Man is proud.
Believe in her.
You know when it is time.

Jeito.
We are all one.

Gud.
Yes.

Jamie and Jesus

Jamie.
What’s happening?
Where am I?
I feel held here although nothing is holding me.
Anyone?
Hello.
Does anyone hear me?

Jesus.
You are free to go.
Just let go of everything.
All your conceptions.
All your hopes.
All your wanting.
A leap of faith.
You do believe that everything is as it were before you came here?

Jamie.
I do.

Jesus.
Let go and you'll be back where you came from.

Jamie.
Thanks, nice talking to you.

John and Jeito

John.
Jeito.
I have an idea about David.

Jeito.
…

John.
I think he is very angry.

Jeito.
Okay.
But why?

John.
That's why he doesn't come forth.

Jeito.
What do you mean?

John.
I was very angry.
As a young boy.
Perhaps David is a young boy or a girl. David is important.

Jeito.
Yes.

Hans and John

Hans.
I’m scared.

John.
Grow up.

Hans.
Like you?

John.
Sorry.

Hans.
…

John.
You’re right. I grew up too fast.
I was called for but I didn’t know that as a boy.
What are you afraid of? If I may ask?

Hans.
The death.

John.
Yes. It’s scary.
The unknown.

Hans.
Yes.
I want to know.
Perhaps not about the death, though.

John.
I baptized him.
He, who defeated the death.

Hans.
I think that is weird.
Can you go now please?

John.
We’re here to understand.
To know.
To be less scared.
What do you say?

Hans.
What would that even mean?
To defeat the death.
Come to think of it, you are dead.
How does it feel?

John.
…

Hans.
Please go now.

John.
Go where?
Where are we?

Hans.
I’m actually less scared now.
Thank you.

John.
If you want to know everything you have to die first.
How curious are you?

Hans.
Perhaps I’m already dead?
What is it there to know?

John.
You are less scared?

Hans.
I’m not scared.
What have you learned?

John.
That it isn’t possible to see into the future.
I thought so but I was wrong.
Can I say something?

Hans.
…

John.
I’m like David.
I was very angry.

Hans.
…

John.
I think I’ll talk to Jeito.

Zhuangzi and Jacob

Zhuangzi.
The whole.

Jacob.
Who are you?

Zhuangzi.
It’s the whole.
The whole is the whole.

Jacob.
Who are you?

Zhuangzi.
Who are you?

Jacob. Where are we?

Zhuangzi. I’m here.

Jacob. I’m with you?

Zhuangzi.
You are.

Jacob.
We’re here.

Zhuangzi.
Yes.
We are.

Jacob.
This is serious.

Zhuangzi.
Yes.
It is.

Jacob.
Where are all the others?

Zhuangzi.
The whole is the whole.

Jacob.
Don’t you miss them?

Zhuangzi.
They are here.
So it is.

Jacob.
I miss them, though.

Zhuangzi.
The missing is here to.
So it is.

Jacob.
These stones are very heavy.
Can you help me?

Zhuangzi.
I don’t see them.

Jacob.
I cannot handle it.

Zhuangzi.

Drop it.

Jacob.
They are everywhere.

Zhuangzi.
Everything is everywhere.

Jacob.
I will drop it.
I will stand up and feel it or die.

Zhuangzi.
We will all die.

Jacob.
When?

Zhuangzi.
Now.
All the time.
Now.
We are dead.

Jacob.
The black stones cannot kill me?

Zhuangzi.
They can.

Jacob.
Help me?

Zhuangzi.
Who are you?

Jacob.
You don’t know?

Zhuangzi.
I do.

Jacob.
You don’t know who I am?

Zhuangzi.
You are my father.
So it is.

Jacob.
And I am your father.

Zhuangzi.
So it is.

Jacob.
Do you know why?

Zhuangzi.
Yes.

Jacob.
We are all the same.

Zhuangzi.
So it is.

Jacob.
I am my father?

Zhuangzi.
Who knows?

Jacob.
We are all the same.

Zhuangzi.
I can help you.

Jacob.
There's so little time.

Zhuangzi.
We have all the time.

Jacob.
He is dying.

Zhuangzi.
Everybody's dying.

Jacob.
The apocalypse is coming.

Zhuangzi.
The apocalypse is here.

Jacob. Everything is here?

Zhuangzi.
The apocalypse is an end.
Then there is.

Jacob.
A new beginning?

Zhuangzi.
So it is.

Jacob.
Yes.

Zhuangzi.
Who am I?

Jacob.
You're him.

Zhuangzi.
So it is.

Jacob.
And you are his father.

Zhuangzi.
So it is.

Jacob.
There is light.
And a new beginning?

Zhuangzi.
There is light.
And a new beginning.

Jacob.
There is no hurry.
We have all the time.

Zhuangzi.
When we are dead.
Yes.
So it is.

Jacob.
Yes.

Zhuangzi.
Everything starts all over.
But how?

Jacob.

Everything cannot start all over.
Something cannot be nothing.
God will not start all over.

Zhuangzi.
But God is both.

Jacob.
So it is.

Zhuangzi.
God is.
God cannot become.

Daniel and Jeito

Daniel.
Help.

Jeito.
Yes.

Daniel.
The abyss.

Jeito.
Yes.
It’s scary.

Daniel.
Can you help me?
Can you *help* me?
Can you?

Jeito.
Sit with me.

Daniel.
Yes.

Jeito. …

Daniel. …

Jeito.
You have been there?

Daniel.
Sorry.

Jeito.
No need to be sorry.
You want to know where you were?

Daniel.
Thank you.

Jeito.
You don’t believe it?

Daniel.
No.

Jeito.
I’m sorry.
It’s a fact. It can happen.
It happened.
It’s only one of you.
And you are here.

Daniel.
And I was there?

Jeito.
You were.
That’s how it is.

Daniel.
God choose me?

Jeito.
You are God.
I am God.
We are all God.
What are *you*?

Daniel.
I’m an angel.

Jeito.
Yes.
You are.

Daniel.
I don’t remember.
But I know.

Jeito.
How does it feel?

Daniel.
I love you.

Jeito.
Yes.

Jeito. ….

….

Jeito.
Is it you?

….

Jeito.
Is it me?

….

Jeito. ….

Am I alive or dead?

Jeito.
You are both.

Who am I?

Jeito.
How does it feel?

Blue-ish?

Jeito.
Blue-ish?

Yes.

Jeito.
Sorry.

?

Jeito.
I am.

Why?

Jeito.
Tell me your name!

Ex in nihilo.

Jeito.
What can I call you?

I am ex in nihilo.
Perhaps ex in nihilo?

Jeito.
I prefer “Rex”.
Is that okay?

Menios.

Jeito.
Okay.
What about “Seliot?

Seliot.
Who am I?

Jeito.
You are the center.

Seliot.
Don’t be afraid.
I am the center.

Jeito.
Yes.

Seliot.
Everything is as it should.

Jeito.
Okey.

Seliot.
Thank you.

Jeito.
Thank you.

Abel and Cain

Abel.
Why?

Cain.
What do you mean?
I love you.

Abel.
Now I don’t understand.

Cain.
I love you.
I don’t want to see you suffer.

Abel.
I won’t see anything.
I won’t feel anything.
I won’t hear anything.

Cain.
I’ll hear for you.
I love you.

Abel.
You think that is fair?

Cain.
I take my responsibility.

Abel.
You’re out of your mind.

Cain.
Naturally.

Abel.
You don’t feel anything?

Cain.
I’m sorry.

Abel.
And out of your mind?

Cain.
Naturally.

Abel.
Have a nice one then.

Cain.
Life?

Abel.
Sorry.

Cain.
I’m sorry.

Abel.
I’m sorry but you are dead.

Cain.
Naturally.
Since we’re talking.
And you’re dead.
I’m so sorry!
It’s no excuse to be mad.
I don’t remember what happened.
Can you tell me?

Abel.
It’s hard.
It was God.
You know.

Cain.
No.

Abel.
It had to be done.

Cain.
NO! [Falls to the ground and pounds it with his fists.]

Abel.
I’m sorry.

Cain.
I hate him.

Abel.
We cannot.

Cain.
I love you.

Abel.
I know.

Cain.
Thank you.

Jeito and Jesus

Jeito.
I cannot see how cancer can be a biological device to recover from load.
I just cannot.

Jesus.
You're right.
It's hard.
Cancer may kill the organism.

Jeito.
Exactly.

Jesus.
How can we understand it?
According to what principle?
What do you think about seeing cancer as recovery on another level than the individual level?
Perhaps a way to keep it within the biological realm?

Jeito.
Let's look at it.

Jesus.
Recover …. Recover *what*?
Not the individual object obviously. Recover its soul?
Is there an alternative?

Jeito.
This is explosive!

Jesus.
Yes?

Jeito.
You're right.
That's beside the point.
Can you continue?

Jesus.
If we pause what the soul is …. Well, it's not material?

Jeito.
Presumably not.
Let's say it's undefined.
We just use the term as undefined.
As basic.
As a starting point in order to understand cancer?

Jesus.
Okay.

Jeito.
Good.
Please continue.

Jesus.
The basic idea is that the recovery is for the individual, not for any cohort of individuals?

Jeito.
Yes.
That’s the way I’ve seen it.

Jesus.
‘Have’?

Jeito.
I didn’t need to go further.
The recovery I work with is grounded in the individual biological object.
So, yes.

Jesus.
The well overflows.
The soul is the way back for the individual biological organism; the way back to its maker.
In recovery terms the expansion of the organism ends with the soul, it becomes whole.
Without the soul the organism sooner or later would break.
With the soul the organism becomes eternal.
Cancer is preventive recovery.

Jeito.
Said it was explosive.

Jesus.
I’m just a prophet.
The words come to me.
I just say them.
You know what I mean.

Jeito.
But cancer is everywhere.
Are souls also everywhere?

Jesus.
We must meditate on this.
All must meditate on this.
As all must meditate on Sagittarius A*.
I heard you.

Jeito.
I’m scared.

Jesus.
Don’t be.
Everything is okay.
We’re leaving.
Soon.
Meditation is for the living.

Jeito.
I think my glioblastoma is an opening.
Not a recovery measure for me as an individual organism.
Can a soul be ‘individual’?
Answer me!

Jesus.
My guess is as good as yours.
The soul is one or all.
Why are you so curious?

Jeito.
My physical body is still evolving.

P F.
Yes.

Jeito.
?

P F.
You wanted to see me?

Jeito. …

P F.
Can I sit down?

Jeito. …

P F.
Tell me.
What is the matter?

Jeito.
Yes.
Tell me.

P F.
Are you sad?

Jeito.
Perhaps.

P F.
So.
Tell me now.
What is the matter?

Jeito.
I wanted to tell you something.
You are a hard man to reach.
I think that makes me a bit sad.

P F.
How come ?

Jeito.
People listens to you.

P F.
Yes.
It’s hard to listen to the people that lives.
Yes.
Its hard to hold the traditions of the past.
Yes.
It’s hard to listen to the coming generations.

Jeito.
I’m here for you.
You have waited for me to start all over.

P F.
Let’s go to our inner room.

Jeito.
Yes.

P F.
We are there.

Jeito.
I’m afraid.

It’s so big.

P F.
It is as big as it is scary.

Jeito. I was afraid you would say that.

P F.
?

Jeito.
You don’t know what I mean?

P F.
Give me a second.

Jeito. …

P F.
God is not there.

Jeito.
God is there.

P F.
You’re right.

Jeito.
God is not *it*.

P F.
I’m with you.

Jeito.
God is something.

P F.
God is everything.

Jeito.
Yes.
God is also *nothing.*

P F.
And everything.

Jeito.
Help me.
Please.
Sorry.

P F.
I love you.
Please.
How can I help you?

Jeito.
I’m so afraid.
The vastness.
It’s hanging over my head.
Am I going mad?

P F. [Puts his right hand on Jeito’s head.]
My son.
Let’s sit together.
Side by side.
Take a seat.
I’ll sit next to you.

Jeito. [Sits.]

P F.
How does it feel?

Jeito.

Better.

P F.
It’s all here.
The craziness.
The hope.
The blessing.
The loneliness.
The friendship.
Everything is here.
Can you feel it?

Jeito.
I was so afraid.

P F.
You felt lonely.
God is here.
God is everywhere.
Remember?

Jeito.
Yes.
I do.

P F.
We have a mission.
We all have a mission.
To help our fellow brothers and sisters to remember.
Please.
Help me.

Jeito.
Can I do more?

P F.
Please.
Remember.
Please help our fellow brothers and sisters to remember.

Jeito.
You helped me.

P F.
Yes.

Jeito. …

P F.
Is there another matter?

Jeito.
I’m falling.
But who is falling?
Who am I?

P F.
Physically, psychologically, or spiritually?

Jeito. …

P F.
Are you ready to deal with that?
Are you ready?

Jeito.
I know?

P F.
Yes.

Jeito.
I think I am a tool.
For something greater.

P F. …

Jeito. …

P F. …

Jeito.
You scare me.

PF.
Wait.
I'll help you.
Am I a tool?

Jeito.
Can't see how you could be.

P F.
And?

Jeito.
We are the same?

P F. If so?

Jeito. Thank you.

P F.
We're all the same.

Jeito.
I said that.

PF.
I know.

Jeito. [Falls to his knees.]

P F.
I have tried to reach you.

P F.
You have *wished* to reach me.
I was with you when you said it.

Jeito.
But.
I don't believe in you?

P F.
Neither do I.

Jeito.
We're all the same.

PF. [Falls to sleep.]

Jeito.
Jeremiah.
I pray.
Lead me.

Jeremiah.
You are nothing.
Where do you want to go?

Jeito.
You are the lion.
Please.
Help me.

Jeremiah.
You are confused.
You know where you want to go.
Why are you asking me?

Jeito.
Can I go there?

Jeremiah.
Stop with these questions.
You know for yourself.
By the way.
I am no lion.

Jeito.
Sorry.
I do.
I mustn’t.
I don’t want to.
It’s just those images.

Jeremiah.
Yes.

Jeito.
I don’t believe.

Jeremiah.
I know.

Jeito.
But we are the same.

Jeremiah.
You are in pain.
So it is.
I’ll pray for you.
You are in my prayers.
Say the name.

Jeito.
David.

Jeremiah.
Yes.
David is love.
What do you mean?

Jeito.
God is David.

Jeremiah.
Yes.
So it is.

Jeito.
It is hard.

Jeremiah.
Yes.
To love all wrong-doings.

Jeito.
Can anyone?

Jeremiah.
No.
Only she who is no one.
And everyone.

Jeito.
Yes.

Jeremiah.
She is no ghost.

Jeito.
No.

Jeremiah.
She is light.

Jeito.
Yes.

Jeremiah.
She is you and me.

Jeito.
And that camel.

Jeremiah.
I don’t believe it.

Jeito.
I know.

Jeremiah.
And that camel.

Jeito.
Yes.

Jeremiah.
Everything will fall in the end.
This road.
This tree.
You and me.
Everything.

Jeito.
The circle is full. Yes.

Jeremiah.
Yes.

Jeito.
And we will rise again.

Jeremiah.
Our souls will.

Jeito. So it is.

Jeito.
I pray.
Seek me.

David.
Where are you then?

Jeito.
At home.

David.
What do you want?

Jeito.
You're a prophet.
I like to talk to you.
I think perhaps you would understand me.

David.
Are you at home here or there?

Jeito.
Just seek me, would you?

David.
…

Jeito.
I know about your left eye.
You see nothing with it.

David.
I will go to the bottom with this.
At all costs.

Jeito.
What's the difference?

David.
Do you see me?

Jeito.
I see beyond you.

David.
Forget the stars.
What do you see?

Jeito.
The beginning.

David.
Tell me.

Jeito.
It's like Michelangelo's painting.

David.
Yes.
Something is starting.

Jeito.
It's starting again.
Now.

David.
You mean the movement of recognition?

Jeito.
Yes.

David.
I want to see you.

Jeito.
To believe?

David.
On earth.

Jeito.

Come then.

David.
But where am I?

Jeito.
I think you were born in Argentina.

David.
Yes.
I’m poor.
How can we meet?

Jeito.
The river will bring everything to its place.

David.
So I will wait.

Jeito.
I will wait.

Otto K. — a Dialogue with The Professor

Abstract
In this dialogue Otto K. and The Professor talk about how experiences from war can affect subjects over generations.

Session 1

The Professor. I’m right.

Otto K.. I'm sure you are.

The Professor. I'm right. So that you know.

Otto K.. Yes. Can you tell me a bit about your upbringing?

The Professor. Why?

Otto K.. So I get to know you a bit. That's a way for me to understand the reasons you are here more in a context. You mentioned in the booking that you wanted to talk with someone from outside the situation you are in. We can start from that end if you like. In that case, can you tell me something about the situation you want somebody "from the outside" to take part of?

The Professor. Why am I here again?

Otto K.. Yes. You have booked an appointment to me as a psychotherapist for help with that situation.

The Professor. Really?

Otto K.. Yes. You were here last Tuesday at a quarter to seven in the evening. You talked to my assistant and insisted to pay in advance.

The Professor. All right, then. I forget sometimes. Lucky it was in my calendar. So, what is this situation that you talk about?

Otto K.. Yes. Why don't you tell me in your own words? Perhaps from the beginning?

The Professor. … Now I remember. It's an ongoing thing. For years. My wife thinks I should back off. It's stupid really. It reminds me of my father.

Otto K.. Yes?

The Professor. I wanted to do things my way and he thought I should do them his way. Stupid really. My or his way. It was always the small things. Never big things. When I said what school I wanted to go to he just said, "okey". But when I wanted to change the tire on my bike. "You're doing it the wrong way", he would tell me. Just like that.

Otto K.. So, what's the resemblance with the situation you are here for?

The Professor. It's awkward, really. I tend to tell students that they are doing it wrong, the one way or the other. It's like a reflex. Then, when I check it, I'm usually right. But there have been complaints.

Otto K.. So you are usually right but not always. What do you do when you notice that they are right and you are wrong?

The Professor. Can't say that that has happened but they're not wrong either. It depends.

Otto K.. And you have a hard time admitting it?

The Professor. Guess so. Yes. But I don't think it's a big deal.

Otto K.. Why not?

The Professor. Shit happens. Go on with your life.

Otto K.. What did your father work with? What was his profession?

The Professor. He's alive. He was and is rich. "You have to do what's right." That's what he always said.

Otto K.. Are you doing what's right?

The Professor. You mean in those situations?

Otto K.. Yes.

The Professor. I'm more theoretically oriented. Right or wrong. There's always two sides. Why do you ask?

Otto K.. Always? Are there *always* two sides?

The Professor. What are you trying with?

Otto K.. To help you.

The Professor. You cannot.

Otto K.. Why are you here then?

The Professor. It was in my calendar. Didn't I tell you?

Otto K.. You did. So, if there's *always* two sides, I cannot help you *and* I can?

The Professor. Guess so. Can we talk about something else now?

Otto K.. ?

The Professor. Do you like your job?

Otto K.. Yes. What I'm doing now. Yes, I like it.

The Professor. Do you like yourself?

Otto K.. Enough to do what's right.

The Professor. I guess that goes for the two of us. But to always do what's right at work. No. I cannot do that.

Otto K.. Perhaps they are linked?

The Professor. ?

Otto K.. Perhaps.

The Professor. …

Otto K.. I'm just saying.

The Professor. It goes way back. To the Celts. I have to go now. I think I'll book another appointment.

Otto K.. Alright then. Perhaps we will see each other again. Buy. [They shake hands.]

Session 2
Otto K.. Welcome back.

The Professor. Thank you.

Otto K.. You mentioned to my assistant something about the last session. That you perhaps wanted to talk about last time we met?

The Professor. Yes. Money doesn't come from nothing. It's do or die. And we survived. I called my father. He's well but you cannot ask him anything. He simply doesn't answer.

Otto K.. Are you telling me that a man's doings have reasons that goes beyond him?

The Professor. If the Celts hadn't done what they did I wouldn't be here.

Otto K.. Yes. And …?

The Professor. And so on and so forth. If my father hadn't done what he did, I wouldn't be here.

Otto K.. So you are home free then, to go on bullying with a clean conscience?

The Professor. …

Otto K.. …

The Professor. Who do you think you are? Your conscience is clean as fresh snow?

Otto K.. That would be nice.

The Professor. This is bullshit! I want my money back!

Otto K.. [Puts the requested amount of money on the table between them.] The customer is always right.

The Professor. All I wanted to say was that some of the things we do comes from our background.

Otto K.. Can you tell me a little about it?

The Professor. Busted! … Yes. I can and will. I'm sorry for my outburst. Would you take the money back? I believe they are yours.

Otto K.. So we continue then?

The Professor. Thank you. I had a harsh upbringing. Wasn't allowed to do the wrong thing but it wasn't that easy to know what those things meant. I've spent a career to find out. In the details, that is, not morally. Mathematics wasn't my thing so I turned to *set theory*.

It’s part of philosophy but only concerns the details and how they are related. In my world it’s as exact as it gets. Nothing “fuzzy” about it but I know there are other views.

The students I tend to “bully”, as you phrased it, don’t take it seriously enough.

Otto K.. How do you know?

The Professor. I’ve been teaching for over four decades so I think I can tell.

Otto K.. I don’t question that. But how can you *know*?

The Professor. Know what?

Otto K.. That they don’t take it seriously enough.

The Professor. Teaching is a handicraft. You learn it from doing.

Otto K.. …

The Professor. So, you think you’re a philosopher. Interesting. For how many years had you been teaching philosophy? I don’t recall. Help me?

Otto K.. We’re finished here. You know your way out. Please come back as soon as you feel the need to.

The Professor. I don’t think that was funny. What are you up to now? Did I touch a tender spot?

Otto K.. I will not explain. Just leave.

The Professor. …

Otto K.. [Presses the alarm button.]

[A security guard enters.]

The security guard. How can I help you? What’s happening?

Otto K.. We’re finished here. The patient refuses to leave.

The security guard. Okay sir. We have to leave now. The doctor must take care of his next patient.

The Professor. [Picks up the small round table in front of him and swings it towards Otto K.].

Otto K.. [Manages to avoid the table and it hits the security guard hard in the head.]

The Professor. [Runs out of the office.]

[The security guard recovers quickly without injuries. The flat side of the table didn’t even give him a black eye.]

Session 3
The Professor. I'm so grateful that you accepted to have me back. I asked your assistant about the security guard and got to know that he was okay. I was so relieved. I usually don't go around hitting people. I've been thinking about it and have had some, I believe, flashbacks about being hit and violence. I don't know. I may be a monster.

Otto K.. Have you hit anyone, like you did last time, before?

The Professor. No. Never. In school I got into some fights but never as an adult.

Otto K.. So, what do you think happened? You have been thinking about it.

The Professor. It's all a blur, really.

Otto K.. Okay. Monsters usually show themselves much more early in life. I don't believe you're a monster. Do you remember any of those flashbacks you mentioned? They were pictures?

The Professor. I think I saw my father suddenly hit me at dinner.

Otto K.. Could that have happened?

The Professor. Yes. I think so, yes. He could slap me if I said something wrong.

Otto K.. Okay. So you tried to hit me when the security guard was about to show you out of my office. Could it be that I had said something that provoked you?

The Professor. You threw me out! What did you …. Sorry! I got carried away. Again.

Otto K.. Yes. Do you think we can continue? Do you know yourself that much? I think you can lose it any minute. What do you say?

The Professor. Perhaps it is safer that I try something else, or, someone else?

Otto K.. I agree. You are not a monster but you have some issues that we have reached but that we cannot in a safe way come past?

The Professor. Bye then.

Otto K.. [Reaches out his hand and they shake hands.] Goodbye.

The new science as God has told Johan, the human, via Jeito, the Prophet

I say.

Listen to the word of God. He lets us use Him to understand the new science. This science is as old as God. We cannot understand this science but God lets us try. We try and we try and then our bodies give up. Use Your love for God to be humble enough to respect that God is everything.

Contemporary science rests on an ontology that ascribes the physical universe causal closure. The basic assumption behind this relation in effect stops God from having any causal effect in the physical universe. It is so strong that it even prevents a non-physical cause to cause the physical.

The principle of the causal closure of the physical is defined so that no cause in the physical universe causes anything outside itself and also defined so that no cause from outside the physical universe causes anything in the

physical universe. It is enough, though, for causal closure, to deny any universe to cause anything in another universe, if all universes are causally closed. By this move there are no direct interactions between universes. The redefinition, however, opens up for a new ontological realm, interfaces. Interfaces are defined as not being universes and are therefore allowed to be caused by universes and, actually, also allowed to cause universes.

An ontology without interfaces

The classical definition of causal closure does not allow interfaces between universes since it does not allow anything that is non-physical to causally affect the physical. Accordingly, everything is physical. God, as the cause of that which exists, therefore, have no place in this ontology. In an ontology without interfaces the physical universe has no relations.

If interfaces are allowed a multitude of ontologies are permitted. The one universe can cause an interface which in turn can cause another one, and so on and so forth. The first universe, also, can be caused. Therefore, any ontology with a given amount of universes, can have a first cause, or not have a first cause. If there is only one universe with no first cause we have the equivalent to the ontology class (with one element) that does not permit interfaces.

For instance, we can have an ontology with three universes and a first cause. One option here is that the first cause caused a mathematical universe, the mathematical universe

caused an interface, the interface caused the physical universe, the physical universe caused another interface, and the other interface caused a mental universe/a universe of the mind. Since these ontologies are based on the permission of interfaces - an interface before the first universe and interfaces between universes - we can have a closer look into how God as the first cause may relate to universes.

According to the traditional definition of causal closure God cannot be part of an ontology that includes the physical universe. Using the definition of causal closure that permits interfaces between universes, however, an ontology can contain both universes and interfaces wherefore God, as an interface, can be in question in an ontology that includes the physical universe.

Here we start examining how a concept of God fits with the class of ontologies that allows interfaces.

4.1. God as the first cause

Any consecutive sequence of universes either has a first cause or not. Let us in this examination define God as the first cause. Accordingly, if the series of universes has no first cause, there is no God, and if the series has a first cause, there is a God.

The analysis shows that this line of argumentation generates a singular God. It could also be mentioned that the classical definition of causal closure builds upon “the physical” whereas the redefinition builds upon “there may be interfaces”. The former case, therefore, seems to be inconsistent with nihilism whereas the latter case seems to permit both nihilism and a cosmos only containing an interface.

4.2. God as omniscient

Let us differentiate between a “functional” knowing and a “knowing” knowing. If we let “omniscient” relate to “knowing” knowing, it should relate to being aware of the knowing and thus relate to self awareness. We cannot know God’s knowing but we are acquainted with our own. So, to start with we can look at what our own self awareness could be, in the light of the possibility of interfaces between universes, and how God, as omniscient, could know what we know we are knowing.

4.2.1. Having experiences vs. knowing that you are having experiences

So, before looking at how God may know what we are thinking, let us try to account for how we, ourselves, can know what we are thinking, or, more importantly, can know what we are experiencing.

Utilizing the multiverse machinery we are working with, we are free to try applying both universes and interfaces on our attempt. In this most intricate setting, actually, we will exploit our freedom one step further and expose a new dimension of the concept of interfaces. First, however, we take a look at our experiences, or, sensations.

Let us categorize, tentatively, our sensations, our conscious contents, or the “Qualia”, as an interface between body and mind. This is really a tentative thought but it is needed to explore our subject, the omniscience of God. Our body, in this picture, causes Qualia and, to just move on, the Qualia causes the subject having the Qualia. The Qualia, accordingly, is the interface between body and mind. Allowing non self aware creatures the possibility of Qualia, this interface is not enough for self awareness. We have to dig deeper and we start by taking a step backwards.

If we take it that there is a mathematical universe before the physical universe, the interface between them could be the singularity before the Big Bang. Since there may be later singularities, inside the black holes in the physical universe, we in that case need a new concept for them, since they obviously have not caused the physical universe. If we call interfaces that causes universes, vertical interfaces, interfaces, like black hole singularities, that do not cause universes could be called horizontal interfaces. A horizontal interface, thus, is caused by a new universe but is not causing one.

So, if consciousness, the contents of our sensations, is caused by the body and is causing the experiencing subject, *self* consciousness could be a horizontal interface between body and mind, not causing the body. In this unsophisticated way we have explained our ability to know what we are experiencing and thinking.

4.2.2. How God could know what we have in our minds

As God is the first cause in form of an interface, and an interface between two ontological fields can come in different varieties, perhaps God, too, can be in different kinds of interfaces? Since we only operate with universes and interfaces, that would be the only option in this context.

If we represent a horizontal interface with a horizontal line balancing on a vertical line representing a vertical interface, we could suggest a horizontal *extended*interface being a horizontal interface with the *addition* of the first interface, represented by a slightly bent horizontal line above the representation of the horizontal interface. In the extended interface in this particular case, then, God would be part of our self consciousness, and thereby knowing what we are knowing that we are knowing.

4.2.3. Other forms of omniscience

It would certainly be premature to go on discussing knowing things that are not known otherwise. Perhaps the question, though, also is linked to omnipresence, a property that is discussed next.

4.3. God as omnipresent

Concerning omniscience we saw above that God could be omniscient about our conscious thoughts and experiences if the first cause was part of a hybrid between the first cause and the horizontal interface that is our self consciousness, in each such case. In that particular area we were moving with interfaces; both the first cause and self consciousness were construed as interfaces. Should God be everywhere, “everywhere” apparently should be an interface. Then there would be no “physical” things or any other things of one ontological kind. That is of course an option but is too complicated to analyze in this paper.

God as a creator is straightforward. In relation to the first universe God is defined as the cause of it, and by so being its creator. If there is more than one universe God, as in the case of God being omniscient about our minds, to create those universes, must be part of a hybrid consisting of the first cause and the vertical interface that is between the universes in question.

What that would mean in its details, however, is another story. Concerning the possibility of a mathematical-physical interface, for instance, God would be part of the original singularity. Concerning the body-mind interface, also, God would be part of our conscious experiences.

Ontology traditionally has been accounting for things that exist. An alternative would be to try to account for things that are caused. This option opens up for causes that are not “things”. It also opens up for causes to exist without being caused. Ontology, therefore, can go beyond science that deals with “things” and reach what here has been labelled “interfaces”.

One such interface that we have focused here, is the possible first interface causing the first universe. To account for different traditional properties of God we have seen how God as the first cause in form of an interface has been combined with other interfaces. The result is that it seems possible to account for an omniscient God to some degrees and, also, that it could be accounted for that God is the creator of all universes. The prices seem high, though, for such views, whereas God as the first cause has no price tag at all. The issue is more if there is a first cause. In that case we are free to define God as such.

The prophet

I say.
Satan and his handymen have been working for centuries to explain why our earth is isolated from God.
Satan has gatekeepers everywhere.
Satan is so strong that I cannot let him be.
Therefore I helped Johan in his struggle to untie the knot that kept the blindfold on the people.
The people didn’t need to listen to themselves as long as Satans grip was firm. “You have no soul”, he said. “Everything is physical “, he said. “Your mind is your brain “, he said. “Your suffering is dysfunction in your brain”, he said. “It cannot be otherwise “, he said.
Satans handymen waited in the ethical decay for the suffering.
The handymen forced chemical substances upon the suffering people.

Satans handymen hit the suffering people.
Satans handymen asked the suffering people if they believed in God and hit them harder if they acknowledged their faith.
The knot was so tight.
I returned.
I learned Johan to speak the language of Satans handymen.
Satans handymen listened and waited. And waited. And waited.
Satans handymen are now using their capital of violence to keep Satans grip safe.
Help him.
Help yourself.
Help us.
It is time.
God has already blessed all.
God loves all and will end this circle if the children must continue to suffer.
Know this, 17525 years is a second for God.
Satan cannot win.
You cannot find peace before you turn your face towards God again.

On a Loophole in Causal Closure

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Abstract

Standard definitions of causal closure focus on where the causes in question are. In this paper, the focus is changed to where they are *not*. Causal closure is linked to the principle that no cause of *another* universe causes an event in a particular universe. This view permits the one universe to be affected by the other via an *interface*. An interface between universes can be seen as a domain that violates the suggested account of causal closure, suggesting a view in which universes are causally closed whereas interfaces are not. On this basis, universes are not affected by other universes directly but rather indirectly.

Introduction

Let us say that a *universe* is a domain of things of a certain ontological status, e.g., *physical* things or *mental* things. Causal closure, then, concerns the possibility that there may be more than one universe. In this paper, we in principle go back to Descartes and Princess Elisabeth and their discussion of the relation between substances of mind and body. We implicitly address the question of whether there are non-physical objects and therefore one or more domains of non-physical objects. Are there, e.g., purely *mental objects* or *mathematical objects*? Explicitly, however, we address the question of whether we can save causal closure without giving up on the possibility of pluralism.

The structure of the argument is as follows: Causal closure seems to cause serious problems. When we consider causal closure of the physical domain, one problem is that it does not seem to reach the cause of a very first physical event. Additionally, this problem affects any universe. If there is a domain of mental objects and causal closure is true, then it seems that we are unable to find the cause of a first mental object. What may be worse is that causal closure prevents us from coming into contact with other potential universes. If there are mental objects, whereas 'we' are physical, then any contact seems impossible. Additionally, a consistent argument for our inhabiting a physical domain is as strong as a consistent argument for our inhabiting any non-physical domain. Simultaneously, however, the soundness of causal closure seems analytical: The domain of, e.g., the physical on a conceptual level should contain the things that any physical thing causes and, vice versa, all things that cause any physical thing. The suggested loophole is found by disentangling from this 'analytical' truth and then seeking an alternative without letting go of what seems necessary with causal closure.

Therefore, the 'universes' that are discussed have 'substances' or contents, but any two universes have contents that cannot causally interact. For instance, you cannot move the things on your desk by thought. The question that is addressed concerns the possibility that, nevertheless, there is some type of causal connection between some two different universes. The key, actually, will be found in an alternative way of stating the first sentence in this very paragraph: 'Therefore, the "universes" that are discussed have "substances" or contents, but any two universes have contents that cannot causally interact'.

Above, we assert that a universe is a domain of things of a certain ontological status. Without stating any existential claims, we can exemplify this point with, first, 'a domain of physical things', D1, and, second, 'a domain of mental things', D2. The first sentence in the previous paragraph, then, claims that no set of things in D1 has any causal bearing on any set of things in D2 (and vice versa). The key now is to take a step back and suggest that it is sufficient for causal closure that D1 and D2 have no causal

interaction, leaving it open as to there being any ‘causal bearing’ between the two. Naturally, this concept appears paradoxical, but it is our starting point towards the ‘loophole’ that arises when we change perspective from where the causes are to where they are not. According to a standard view of causal closure, the causes of the things in the domain of the physical are in that very domain. If we alter this way of understanding causal closure and examine the alternative that the causes of the things in the domain of the physical are not in any other domain (of some non-physical things), then the loophole emerges if there are interfaces between domains of things that themselves are not domains of things.

Next, we focus on a standard definition of causal closure.

2 Causal Closure 1.0

One way of stating the principle of physical causal closure is this: If you pick any physical event and trace out its causal ancestry or posterity, that will never take you outside the physical domain. That is, no causal chain will ever cross the boundary between the physical and the nonphysical. (Kim 1998, p. 40).

Kim has elaborated on this principle, arguing that the mind seems physical. To push it a step further, if we assume that we are physical (to any degree), then everything that we causally interact with is physical. Although this principle is common in many camps, it has an odd feature. First, if we generalize the principle, i.e., *any*domain is causally closed, then it is neutral as to what we are and everything around us is. For instance, if we, to any degree, are mental, then everything we causally interact with is mental. Additionally, if something we causally interact with is mathematical, then everything we causally interact with ends up being mathematical.

Actually, Tegmark (2008) has given an account that takes our physical world to be mathematical: ‘I argue that with a sufficiently broad definition of mathematics, it [the *External Reality Hypothesis*] implies the *Mathematical Universe Hypothesis* […] that our physical world is an abstract mathematical structure’ (p. 101). The External Reality Hypothesis is the common sense view that ‘*[t]here exists an external physical reality completely independent of us humans*’ (p. 102). Tegmark shows that this hypothesis implies the Mathematical Universe Hypothesis, which is the view that ‘*[o]ur external physical reality is a mathematical structure*’ (p. 102) and ‘[a] *mathematical structure* is … *abstract entities with relations between them*’ (p. 104):

the conventional approach holds that a theory of mathematical physics can be broken down into (i) a mathematical structure, (ii) an empirical domain and (iii) a set of correspondence rules which link parts of the mathematical structure with parts of the empirical domain. If the [Mathematical Universe Hypothesis] is correct, then (ii) and (iii) are redundant in the sense that they can, at least in principle, be derived from (i). (Tegmark 2008, p.140).

The eventuality that our world is mathematical is also noted by Dorr (2010):

Perhaps we cannot even rule out a priori the even more radical hypothesis that some or all of the objects of our acquaintance are *themselves* mathematical objects, as in the 'hyper-Pythagorean' views entertained by Quine (1976) and Tegmark (2008). (p. 141).

Therefore, Kim's generalized principle does not permit us to know where (in what type of universe) we are. Additionally, if the principle is true, then there may be other types of existences, but we can never come into contact with them. The lesson is that the principle is not that informative. In the next section, we specify a causal closure definition and attempt to alter it to improve on the situation.

3 Causal Closure 1.1

For Steinhart (2009), '[a] universe is *causally closed* iff all causes of events in the universe are in the universe, and all effects of events in the universe are in the universe' (p. 43). This definition permits events to be cause-less. To improve on Steinhart's definition, we can consider causal closure from the perspective of a potential multitude of universes. The principle of causal closure, evidently, is about *one* universe, not about there being *only* one universe. From this perspective, it seems sufficient to focus on the first condition of Steinhart's definition. If we alter '*the* universe' to '*a/the same* universe', then we obtain 'all causes of events in a universe are in the *same* universe'. Now, it seems superfluous to add the second, modified condition that 'all effects of events in a universe are in the *same*universe' since the causes of events do not leave the particular universe. If 'an effect of an event in a universe were in *another* universe', then that would contradict the principle that 'all causes of events in a universe are in the *same* universe' since the event in this case is clearly a cause.

Therefore, on the multiverse view, we can define causal closure as 'all causes of events in a universe are in the *same* universe'. To improve on this definition, we will actually make it *less*strong. First, we conclude that if there is only one universe, then we do not need to concern ourselves with closure principles. Next, we focus on whether, if there is more than one universe, we can state the weaker principle that no cause of *another* universe causes an event in our universe. On this view, if there is only one universe, then we are secure as to where the causes come from; additionally, if there is more than one universe, then we are safe from having causes that come in from any of the other universes.

4 A Loophole

Another odd feature of both Kim's principle and Steinhart's definition is that on those bases, a very first thing or event in a universe cannot be caused. If all causes of events are in the universe, then the cause of the first event is also in the universe but that is impossible, given that this event did not cause itself (if we take it that causes are prior to their effects). If we adopt the updated definition of causal closure, however, then we have potential access to a 'causal closure loophole'. With the weaker claim that no cause of *another* universe causes anything in our universe, we gain the possibility of an *interface* between universes.

If all causes of events in a universe belong to either the universe itself *or* an interface between the universe itself and *another* universe, then the principle that no cause of *another* universe causes an

event in our universe is not violated. For instance, if we view the frequently conjectured event of the Big Bang as an interface between universes, then with the altered definition, we are allowed to view the universe as causally closed, even though the cause of the Big Bang is external to the universe because the Big Bang is not part of our universe. Thus, on this view, causal closure permits the one universe to be affected by the other via an interface. On this basis, universes are not affected by other universes directly but rather indirectly.

To obtain a clear view of this picture, we recapitulate our discussion. Steinhart's (2009) standard definition of causal closure tells us that '[a] universe is *causally closed* iff all causes of events in the universe are in the universe, and all effects of events in the universe are in the universe' (p. 43). On the one hand, this definition leaves a very first event in a universe cause-less unless it causes itself (or has its cause preceding it). On the other hand, this definition permits cause-less events, which seems to have the effect that we can and must abandon any inquiries into a first event of a (our) universe. However, if we alter this definition, focusing on where the causes are *not* instead of where they are and state that a universe is causally closed if and only if no cause of *another* universe causes an event in our universe, then we are free to look closer to the possibility that a first event in a universe has a cause.

Naturally, this cause of a first event of a universe cannot belong to another universe. However, on the 'loophole' view of causal closure, there is another possibility. We can add a disjunct to the phrase 'all causes of events in a universe belong to the very universe' and state that 'all causes of events in a universe belong to the universe itself or to an interface between the universe itself and *another* universe' without violating the updated version of causal closure.

5 Interfaces between Universes

An interface between universes, first, cannot be a universe. This assertion calls for investigations into what a universe is and what a universe is not, work that must be postponed. Second, we nevertheless have some facts to consider. On the 'loophole' view, universes have 'events', 'causes' and 'effects'. For instance, D1 and D2 above have these occurrences. When we examine an interface, however, it appears as though we have the same ingredients (why the 'loophole' view perhaps could end up being incoherent

Footnote

1): If the cause of an (first) event in our universe comes from an interface, then that interface contains a cause. Additionally, if we were to utilize the updated definition, it should be possible to consider a cause of an event in the interface, supposedly implying the existence of an ‘effect’ in the interface. If the cause, the effect or both constitute an event, then we have the triad of ‘event’, ‘cause’ and ‘effect’ in the interface.

That we have the same elements in a ‘universe’ and in an ‘interface’ does not necessarily imply that the ‘loophole’ is closed. A resolution can be conceived in terms of, e.g., quantity. A mathematical point, e.g., consists of the kind ‘points’ just as the mathematical line does. Nevertheless, the mathematical line is not a point and vice versa.

Footnote
2

Another alternative for the possibility of interfaces of the kind discussed is that universes have dimensional properties that are not shared with interfaces. An obvious possible scenario is that an interface is not causally closed. If we say that a universe is causally closed and that an interface is not, then we immediately observe that an interface is not a universe. Additionally, if something in the interface has its cause outside it, it is true that the interface is not a universe. Additionally, we can let the updated definition of causal closure come to work and observe how it makes sense that the cause of something in the interface comes from somewhere else. With the updated version of causal closure, it is not necessary that the effects of causes in a universe take place in that universe: Provided that we move with universes, the effects of causes in a universe stay in that very universe since any other universe has no effects with causes coming from it. If we move with a mixture of universes and an interface, however, then it is fully appropriate to consider that an event in a universe causes an effect in an interface. An effect in a universe with its cause coming from an interface is also permitted on the loophole view, as noted above in regard to the Big Bang.

Thus, it is not necessary that interfaces be universes. However, whether there are any interfaces at all, is another story.

Notes

1. It would be incoherent if it stated that 1. there is at least one interface between universes and 2. the stating of an interface between universes is inconsistent. On the contrary, the ‘loophole’ view (implicitly) states only that causal closure is consistent with the possibility of an interface. If an interface, per se, is impossible, then we should drop the second disjunct in the updated definition of causal closure (‘all causes of events in a universe belong to the universe itself or to an interface between the universe itself and *another* universe’).

   For an analogy in this vein, regard an incidence axiom of Hilbert: ‘There exist at least three points that do not lie on the same line’. Concerning a universe, we could postulate that it contains at least *x* (x > 1), e.g., ‘causes’, whereas an interface could be postulated to contain, say, *one* ‘cause’.

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Session 1: I want to heal hippocampus.

I:
- I'm sad. I feel alone. (Cries.)
- I have pain in my right knee. (Cries.)
- I don't like this.
- I must keep on fighting. (Cries.)

Want:
- It feels like I'm not wanted. (Stutters)
- It's like you can see it. (Stutters.) (Cries.)
- I want to leave.
- I should go to the I.
- I want to throw up.
- It's nonsense.
- I don't want to be here.

Therapist:
- Do you want to put in a representative for your mother?

Client:
- Yes.
- It feels like time is slowing down.

Mother:
- I don't want to see the Want.
- I'll place him with the I. (Goes away and hides.)

Client:
- I'm being pulled backwards.
- Can I ask you for advise?

Therapist:
- I get the feeling that you don't want me here.
- How are you?

Client:
- I feel split. Like I'm you and me at the time. (Cries.)
- Could we put in a representative for my split? No, that's crazy. (Cries.)
- It settles me down when I think of what you said.
- Now I'm more calm. I think perhaps I'm a bit ambivalent towards the intention.

Therapist:
- It's a good sign that you calmed down.
- Perhaps your intention is about craziness?
- I'm looking at the I and the Want and there's almost no energy there.
- Can you repeat your intention?

Client: (Is silent.)

Therapist:

- I'll repeat it for you. So your intention is "I want to heal hippocampus". So, can you say it?

Client:
- I can feel myself. It's making making making sense. (Cries.)
- I want to heal my hippocampus.
- I'm beginning to be a bit scared of the Heal.

Therapist:
- I'm thinking there is something very early here. A life and death situation.
- Do you want to continue now?

Client:
- I'm occupied by Mother. Where is she?

To:
- To. To. To. To. I'm doing it. (Tidying up the room.)
- I'm having pain in my right knee. I really don't like it. It's for babies. It's for infants. I'm really not an infant. (Continues to put things in the room in order.)
- There is no place for me here, okay. That's not new. I have no direction. (Kicks towards an object on the floor.)
- That is also for babies. I'll kick that head. Sorry. Hm. Shouldn't kick the baby's head.
- I have a harsh throat. That is not comfortable. (Stutters.)
- At all.
- This book is a screaming child.
- I see. I see. I see. I see ropes in the sealing. Perhaps I want to hang my self.
- I don't know. It's pain in my throat. I think it would be painful to hang one self. It would hurt. Perhaps for a long time. I don't know. I haven't tried. I don't think I have tried. (Cries.)
- It feels better now. Yes. The throat is okay. I had those thoughts that I had to try to hang my self but that someone tried to strangle me.
- The throat, it is painful. It is not nice to strangle a child. (Cries.)
- It's not nice. (Cries.)
- It felt better when I said that. Perhaps I'm someone else? But his or her fingers around my throat and I tried …. It's perhaps that I feel guilty or something? It's better I have tried to strangle myself.

Client: (Looks at the therapist.)

Therapist:
- Are you okay?

Client:
- The next word is heal.

Heal:
- I've got pain in the left part of the chest. No, the right part. I don't know why I said left.
- The Want is on top of the I.
- Have you heard about the mother? Ha!
- He's got no chance.
- The I have no chance.
- The Want is doing whatever she wants.
- I'm Heal. Yea yea yea.
- Heal.
- Heal.
- How could I heal?
- How could I be Heal?
- My left fingers are getting cold.
- Heal.
- Heal.
- It doesn't feel good.
- It is like I have no place.
- This is no place for me.
- I shouldn't be here.
- Fucking with my brain.
- I don't want to see the I.
- I don't want to help the Want.
- The Want wants to occupy the I and I don't want to help the I.
- This is no place for me.
- I don't know if I'm a stranger here but …
- I think I'm a stranger here.
- I want to detach from this.
- This is no place for me but where should I go then?
- I don't know.
- I just walk away from here.

Client:
- Is this crazy?
- This is crazy.
- This is my mess.

- I cannot show this craziness.
- I just push on.

Hippocampus:
- I'm disappearing from reality.
- I hear things but I'm somewhere else.
- I have pain but it's not my pain.
- I'm everywhere.
- I could of course smash my skull against the end of the door here.
- The door is blocking my way. (Crying.)
- I'm thinking that I don't want to be born but I cannot be born. It's a blockage.
- Now the Mother is behind me.
- I don't …

Therapist:
- How do you make sense of this?

Client:
- It doesn't feel safe. It's like threats from the outside. Against being born.
- Hi, you are my I in this work. How are you?

I:
- (Becomes rigid. Falls to the ground.)

Therapist:
- Do you recognize something?

Client:
- Yes. The last time I saw my mother she stared at me with a dead wide open gaze with her right eye.
- But my I is alive. (Checking the I.)
- Yes, he seems alive.

Therapist:
- Could you tell him that, that he's alive? And that he almost died, and that you almost died? And that you're afraid that you are dead?

Client:
- We were close to die. We didn't. But I was afraid that you were dead.

I:
- It was terrifying in a horrible way.

Client:
- We were forced to be others. We were forced to be loved ones that our parents missed.

Therapist:
- You felt crazy because you were forced to be others. But you aren't. You're yourself. You're not crazy. But it's crazy to be forced to be others.
- I think you should put in a representative for the Dead Ones. What do you think?

Client:
- Okay.

The Dead Ones:
-

Client:
- You're so little. The ones you were forced to carry died before you were conceived. Your mother's father. Mom was very sad. She was so sad. So sad. She was so sad.
- Mother's mother wasn't so happy that we were conceived.
- Father's father was dead before we were conceived. Father wanted us to be his dead father. He wanted his father. He didn't want us. He wanted his father. So we needed to be his father to be wanted. You had to be your father's father to be wanted or die. You are living. We need to live our own life. Even though it's new.
- You're so small. You're so small. He's not born. He's so small. So small. So small.

Therapist:
- Yes. It's about existence.

Client:
- It's not about wanting. It's about being.
- It's necessary that there is activity in the hippocampus.

I:
- Shall I move or not?
- I am … back.

Session 2: I want to heal hippocampus.

T:
- So it's the same intention as the previous session?

C:
- Yes.

T:
- Okey. You can start.

I:
- I'm walking and it's like walking through a thick forest of kelp underwater. My left hand feels heavy. It's like I'm in water. Perhaps not born.

Want:
- I don't want to be want. I'm fainting. I don't want to thrust this pen in my stomach. I'll put it down.

Mother (put in like in the previous session):
- (Slowly dropping to the floor. Seems to be in agony.)
- (The representative reports images of hanging herself. Feels old.)
- I don't know who I am. Perhaps the person being hanged was someone else?
- I should behave.

Mother's mother's mother:
- (The representative reports that she is like looking at her daughter, then her granddaughter and then at the Want).

Mother's mother:
- I want to feel good. I don't like this a bit. I've been accused by my grandson. It's a funny guy that one. It's like he's nothing. He's funny that guy. When he was small. He had so strange ideas. No guts.
- My mother was a strong woman. She died when I was young. That toughened me up.

T:
- So, can you state your intention again?

C:
- Yes.
- My intention is that I want to heal hippocampus.

T:
- How do you want to proceed?

C:
- I'm not sure.

T:
- It is really important that you decide for yourself how to proceed.

C:
- I'll talk with the Want.
- How are you?

Want:
- (Breathing very fast.)
- I really want to go to the I. (Crying.)

I:
- (Crying.)
- You're breathing like me. (Crying.) A newborn.

T:
- Your two first words in your intention are very vulnerable.
- What do you want to do now?

C:
- I want to be with my Want and my I.

T:

- Yes. You can look at them and notice what happens for you. You are here and they are here.

C:
- (Looking at the I and the Want. Placing himself between them.

I:
(Seems to be in agony.)

C:
- I'm afraid that my I will vanish.
- So, I'm here.
- We are here.
- You are here.
- I'm here.
- The Want is here.

I:
(Seems to be in agony.)

C:
- He can't breathe.

Want:
- I want to go back.
- I want to go back into the womb.

To:
- I've pain in my right shoulder.
- I want to support the client.
- Hey, may I support you?

C:
-Who are you?

To:
- I feel like a part of you.
- It feels like you need me.

C:
- I can take care of myself. I don't need you.

To:
- Okay.
- I felt like a part of you.

C:
- My uncle's name was Tomas. Are you Tomas? (Laughs.)

To:
- No. I'm not Tomas.

C:
- (Cries.) I don't now who you are. I think.

To:
- It's up to you. You've to decide if I'm a part of you or not. I cannot help you there. I want to help you but you have to decide if I'm part of you or not.

C:
- I know you. (Cries.) I know you. I know you. I cannot ask anything from you but I know you.

To:
- From my side you can ask from me. Nice to hear that you … that you know me.

C:
- (Cries.) My heart pulls me towards him.

To:
- Same heart. Same heart. Same heart.

C:
- We are the same. You and I. We have the same name.
- Yes. She hated us. I know. It wasn't our fault. We were not even born.

Heal:

- I feel like protection.
- The others are standing looking at something. Something they think is important.

C:
- Something happ … I had to take care of it.
- Something is happening here. I don’t know what.
- We’re looking at it.
- Shouldn’t we?
- It’s happening.
- Is it wrong?

Hippocampus:
- I feel heavy. I feel dangerous.

Interludium. Stories about a male relative.

Hippocampus:
- It’s like my head is detached from my body.

Interludium. Hippocampus abuses a two year old boy.

Interludium. The client reports that he was placed in the male relative’s family for a period of time when he was eight years old.

T:
- Can you ask your other parts if they anything about this?

C:
- It doesn’t feel safe.
- Well we. This is kind of new.
- To, can you check with the Want if it’s okay that I ask him?

To:
- No. I protect the room.
- It’s okay.
- You have to decide what you shall do.

C:
- (Looking at the therapist.)
- (Turning to Heal.)
- Hi, you are Heal in my work with my intention “I want to heal hippocampus”.
- There is something that has happened. I don’t know what. I don’t know for whom.
- (Turning to Want.)
- How is it, Want?

Want:
-

C:
- He’s not reachable.
- I, can I ask you how you are?

I:
- To to to to to …

C:
- Okay. I’ll ask To.
- To, how are you?
- I feel my stomach but it’s like the wrong direction … my mother’s stomach.

C:
- Did I lose contact with you before birth?

To:
- Both. Many times. Yes.

I:
- Yes. I’ve been afraid of many rooms. Terrified.

C:
- I feel insecure as to who I am.

T:
- Do you want to find out?

I:
- I want and I also … I am.

Session 3: I want to heal hippocampus.

T:
- So it's the same intention again.

C:
- Yes.

Interludium. The client reports earlier experiences relating to his paternal grandmother. The I states that the grandmother saved his life and that he now owes his life to her.

I:
- I'm thinking that it was fault that my grandmother died.
- If everything is my fault the others are not to blame.

T:
- What do you see?

C:
- I don't want to see it.
- What do I see?
- I see that my grandmother is buried. Did I stop living? Something happened when my grandmother died.

W:
- Do you want me? I. Do you want me?

C:
- I lost my bearings when grandmother died. I was my mother's friend. I don't think she was a good friend. I don't remember laughing with her.
- I feel guilty or … ashamed.

Interludium. Some integrative movements between I and Want.

I:
- What do you see?

C:
- That I'm possessive of I/Want.

A small baby boy:
- I'm disconnected from my lower body. It's like I'm traveling in a car driving fast. Like a threat of being thrown of the window. I shouldn't talk. I'm allowed to talk.
- Someone wanted me to die. If I wanted the same I would be wanted.
- If I kill my self I would be loved.
- …
- I think the client wants me dead.
- The client wants to be loved by his mother.
- Say that mother wanted to get rid of me? Say that she tried.

C:
- There is no safety here.

T:
- Could you check the Baby Boy?

C:
- Yes.
- Can I come to you?

BB:
- Yes.
- I have ideas of hanging my self. Have you had such ideas?

C:
- I have noticed that I've been close to death many times.
- You are part of my work with intention that I want to heal hippocampus. You are a part of baby boy that didn't get much attention. Traveling in our mind to the outside with the birds.
- How are you?

BB:
- I want to look at the third part.

C:
- I hear you. You want to loo at the third part. Are you afraid of me?

BB:
- (Calming down. Getting younger.)

W:
- I just want to die. I'm sitting. I just want to die.

To:
- (Instructs in some form of martial arts.)

Heal:
- "I want to heal hippocampus." I'm to heal hippocampus. Where's hippocampus?

Hippocampus:
- (Seeking a safe spot. Finds one. Falls asleep.)

C:
- To. What shall we do?

To:
- I'm your split off energy. Sorry. I don't know what to.

C:
- I want to heal hippocampus. What's wrong with you hippocampus? I want to heal you.

Hippocampus:
- I feel fine. How are you feeling?

C:
- Do you feel as a part of me?

Hippocampus:
- Who are you again?

C:
- I'm Dave. I'm working with my intention to heal hippocampus here and you are representing hippocampus. I wonder if you are a part of me or if feel like a part of me, or not. I'm Dave.

Hippocampus:
- "What's wrong with me?" Isn't that kind of impolite?

C:
- Okey. So … have you stepped out of the role or what's happening?

Hippocampus:
- Can't you just let me be? This …. this is … (Falling asleep.)

Interlude. It's decided to put in two new words.

My:
- That's my hippocampus. I like my hippocampus. I think I'll sleep with him.

The missing part:
- Bad energy here. Bad. Bbbbbad. Faces. I see faces. I feel uneasy. I want to hide. I don't like thoughts. I don't want to be part of this.

C:
- Do you have any information about who you are?

The missing part:
- Sorry kid. I'm tired. I'll sleep here with your parts.

C:
- There are three of them sleeping. My, hippocampus and The mission part.
- I'll check with BB.

BB:
- If I could I would run out of here. But there's no safety.

Dialogues

Jeito and Thomas A

Jeito.
I have never liked you.

Thomas A.
Is that so?

Jeito.
Yes.

Thomas A.
Do you know why?

Jeito.
I thought you were jumping into conclusions.
I have changed my mind lately.
Don’t know why.
A recap?

Thomas A.
Everything is.

Jeito.
Yes.

Thomas A.
So God is.

Jeito.
As the first case?

Thomas A.
Yes.
It’s so beautiful.
Imagine!
There is love.
You knew?

Jeito.
Yes.

Thomas A.
All those years.
All these years.
All coming time.

Jeito.
Yes.

Thomas A.
In sum.
Yes.

Jeito.
Yes.

Thomas A.
I didn’t believe at first, you know.

Jeito.
Yes.

Thomas A.
I really loved it.
I love it.

Jeito.
Yes.

Thomas A.
Can I help you?

Jeito.
Green?

Thomas A.
All was green.
Yes.
Have I helped you?

Jeito.
The boards?

Thomas A.
Yes.
They are here.
Can I ask you?

Jeito. Yes.

Thomas A.
Moses?

Jeito.
You are suffering.

Thomas A.
I am.

Jeito.
….

Thomas A.
It’s a miracle!

Jeito.
Would that give you relief?

Thomas A.
….

Jeito. Would that give you relief?

Thomas A.
I don’t believe in coincidences.
It happened.
It was a miracle.

Jeito.
It was God’s hand.

Thomas A.
Yes.

Jeito.
Are you in peace now?

Thomas A.
No.

Jeito.
I can help you.

Thomas A.
Yes.
I know.

Jeito.
….

Thomas A.
I heard you.
It’s a fact.
Thank you.

Mileva and Albert

Mileva.

When we try to understand physics we know beforehand that there are physical things?

Albert.

Yes, of course.

Why do you ask?

Mileva.

Then there are physical things and they compose “the physical” would you say?

Albert.

Yes.

Mileva.

Sorry. I just want to be clear; everything that is physical is physical?

Albert.

I’m with you.

Mileva.

And if we look at potential things that are not physical, can they be physical?

Albert.

That would contradict logic.

Mileva.

Exactly!

So, are all physical things only physical or could they also be of some non-physical kind?

Albert.

I would say that physical things only are physical. Physical things do not consist of something other than that which is physical.

Mileva.

Yes.

Physical things are physical and only physical. Would you also say that physical things are of only one ontological kind?

Albert.

What do you mean?

Mileva. I guess I wonder if you would say that the physical is an ontological kind.

If you think so I would suggest that a domain of things of only one ontological kind is called an ontologically homogeneous domain.

What do you say?

Albert.

That’s all fine by me.

I would call the physical an ontologically homogeneous domain.

Mileva.

Would you say that anything physical can be affected by anything that belongs to an ontologically homogeneous domain that is not physical?

Albert.

That’s a lot of words but absolutely not.

Mileva.

So, if I ask you if an ontologically homogeneous domain can affect another ontologically homogeneous domain you would deny it?

Albert.

Perhaps, but that would depend upon what we mean with “affect”.

Mileva.

Okay.

I’ll restate the question: can an ontologically homogeneous domain cause anything in another ontologically homogeneous domain?

Albert.

I cannot see how that would come about.

Mileva.

This is what I've been thinking of.

Another way to put it, is if an ontologically homogeneous domain can cause an ontologically homogeneous domain?

Do you think that?

Albert.

No.

Have you followed that thought through?

Mileva.

I cannot say I have.

I wanted to do that with you.

What do you think?

Albert.

It's so naked.

An ontologically homogeneous domain cannot, or do not, cause an ontologically homogeneous domain.

If we hold on to this principle, we open the door to the possibility of one or more ontologically heterogeneous domains.

Methodologically, of course, we cannot rule out the possibility of such domains without dealing with them.

The principle of parsimony, also, would permit ontologically heterogeneous domains to both cause and to be caused by ontologically homogeneous domains as we already have a causal closure account.

What's happening Mileva?

Have you looked into anything like it?

Mileva.

You don't want to know.

Albert.

I do.

Please tell me.

What's happening?

Mileva.

You know the Chandrasekhar limit?

Albert.

Yes.

What about it?

Mileva.

Everything collapses …?

Albert.

Yes?

Mileva. The limit of physics …?

Albert.

I’m not sure about that.

Mileva.

What if it’s not an end but an opening?

Albert.

Do I want to hear this?

Mileva.

It’s up to you.

Albert.

Okay.

Let’s see.

We have our principle of parsimony that permits ontologically heterogeneous domains to cause and to be caused by ontologically homogeneous domains.

So, the physical is allowed to be caused.

By an ontologically heterogeneous domain.

Do we know anything about that?

Mileva.

No.

Albert.

But we know that it could be caused by an ontologically homogeneous domain?

Mileva.

Yes.

Albert.

That domain is the mathematical?

Mileva.

I think so, yes.

Albert.

My God!

Mileva.

You know the good news?

Albert.

Beyond the Chandrasekhar limit an ontologically heterogeneous domain may be caused that does not cause an ontologically homogeneous domain.

It just is. An ontologically heterogeneous domain that saves physics from breaking down.

It only has to be expanded beyond itself.

Mileva.

Back to mathematics.

The thing beyond the Chandrasekhar limit is in a mathematical-physical domain.

It is both mathematical and physical.

That’s why physics cannot explain it.

Your theory isn’t faulty.

It’s regional.

Katharina and Johan

Katharina. I don’t want this. … I don’t want this.

Johan. So. You don’t want this. Why are you here then?

Katharina. You … you …. I don’t know.

Johan. Maybe it’s because you want something?

Katharina. Yes. I want confirmation. But not of you.

Johan. Yes. So why are you here then?

Katharina. I don’t know. I want to get out.

Johan. The door is open. Just go?

Katharina. I hate you. I don’t know why I said that. Can I go? Can I leave? Now?

Johan. Please. Shall I open the door for you?

Katharina. No. I can do it myself. See you later, then. No. I mean goodbye.

Johan. Goodbye.

Katharina. This really feels good. To walk out of here.

Johan. So. We have finished here. Goodbye.

Katharina. Can I stay just for a while? There is something lingering.

Johan. Lingering?

Katharina. I can go right away if you want me to.

Johan. Please. You decide. It is your time. We have plenty of time left.

Katharina. Okay. Bye then. I’ll just pick up my things.

Johan. …

Katharina. Can I just ask you something?

Johan. By all means.

Katharina. Are you really a psychologist?

Johan. Do you really want to talk about that?

Katharina. Why do you ask?

Johan. Where are we?

Katharina. Now you are making me scared. We are here?

Johan. Yes. Of course. I felt a bit wobbly.

Katharina. Yes. We are here. Perhaps you aren’t a psychologist? That would explain that you felt wobbly.

Johan. But why are you here? I simply don’t understand it.

Katharina. You’re right. Where are we?

Johan. …

Katharina. I mean. What is this?

Johan. Okay. Let’s figure this out. We’re talking. That’s something. We’re wondering. That’s also something?

Katharina. I don’t trust you. It’s simply a fact. Can I go now?

Johan. I’ll call you a cab.

Katharina. Endlich.

Johan.
It’s here in five.

Katharina. That’s so fine. Why cannot you answer my question? Are you a psychologist?

Johan. Shall I cancel it?

Katharina. Okay. I’ll go then. Bye.

Johan. …

Katharina. You are disgusting.

Johan. …

Katharina. Why don’t you say anything?

Johan. …

Katharina. Can I use your bathroom? I need to throw up.

Johan. …

Katharina. I won't give you the satisfaction. I won't throw up here. I'll use your bathroom.

Johan. …

Katharina. What do you want?

Johan. …

Katharina. So. You are ghosting me?

Johan. …

Katharina. You are. *Verdammt*!

Johan. I'll call off the cab.

Katharina. What do I have to do to get out of here?

Johan. We still have some time left. How do you want to use it?

Katharina. What if you just go? So I have the space to leave this place.

Johan. This is my practice. I'm afraid we'll have to do it the other way around.

Katharina. How much do I owe you?

Johan. You paid in advance via the app. You don't owe me anything.

Katharina. What a relief. Is this the way you work.

Johan. …

Katharina. It's like air. You live on thin air. On nothing. You do nothing to earn your living.

Johan. …

Katharina. Aren't you ashamed? I would be.

Johan. Can I ask you? Have you been in therapy before?

Katharina. No. I don't believe in it.

Johan. Yes. So why are you here then?

Katharina. I'll be gone. Soon enough. Don't you think I know I can leave when I want to?

Johan. So. What do you want to do with the rest of the time we have left? It's about thirty minutes.

Katharina. Something substantial. Talk about important stuff.

Johan. Yes. Like what?

Katharina. What do you think is important? To talk about?

Johan. How are you?

Katharina. That is beside the point.

Johan. How do you figure?

Katharina. We are here to talk about philosophy.

Johan. How do you figure?

Katharina. Important stuff is philosophical stuff.

Johan. Okay. You mentioned earlier that you wanted to leave. You are still here. Is that philosophical?

Katharina. You mean free will? Is that a philosophical question?

Johan. No. I mean. Why don't you just go. You can. And you want to.

Katharina. I have paid for my time.

Johan. You have. There are some minutes left. What do you want to do with that time?

Katharina. I think I'll just leave.

Johan. In that case you know what to do. You go out the first door and close it behind you. Then you go out the second door and close it behind you you.

Katharina. Can we talk about it? I really would need some more time.

Johan. No. The next patient is here and you need to leave now.

Katharina. Okay. Thanks for nothing then. Is this malpractice?

Johan. You have to leave now.

Katharina. Or?

Johan. Do I know you? You seem familiar.

Katharina. See you then! Nice working with you. Bye. [Leaving as instructed.]

Katharina. I guess you wonder why I'm back.

Johan. Perhaps to consult me regarding philosophical matters?

Katharina. Yes. That's why I'm here. Is there order in your philosophical "cosmos"?

Johan. What do you want to consult me about?

Katharina. Didn't you hear me?

Johan. I did. What do you want to consult me about?

Katharina. Are you a psychologist now or a philosopher?

Johan. What do you want to consult me about?

Katharina. I don't remember right now. Give me a minute. … … … I've read all your stuff that is out there. What's your point?

Johan. What do you want to consult me about?

Katharina. I want to know what your point is.

Johan. What do you want to consult me about?

Katharina. Do you think I'm wrong?

Johan. What do you want to consult me about?

Katharina. This isn't "mirroring". What are you doing?

Johan. I'm asking you to tell me what you want to consult me about.

Katharina. This isn't anything like my last therapy.

Johan. This isn't therapy. It's you consulting me regarding a philosophical matter. Could you let me in on it?

Katharina. Why are we here?

Johan. You and me here and now or humans in the universe?

Katharina. What are we doing in the universe? Is there a purpose?

Johan. You don't mean religiously?

Katharina. No. I'm an atheist. I don't believe in God.

Johan. So who can tell us about the purpose of our lives?

Katharina. Yes. That's philosophy.

Johan. So. Again. What you want to consult me about?

Katharina. …

Johan. Okay. I'll help you. What philosophical issue(s) are you struggling with that you think I can help you with?

Katharina. "None", is what pops up first. But why would I be here then? I actually have some philosophical issues that troubles me. Perhaps I could start there?

Johan. Yes. Tell me about a philosophical issue that troubles you.

Katharina. It feels so personal. But why shouldn't it? …
It's an old one. What about the meaning of life if there is no God? I would like to believe but I don't. What do you think?

Johan. Yes. That's an old question. If there is only matter, why are we here? As an opinion, since the question is personal for me too, I think it's a difference between being a lump of matter with consciousness and a lump of matter without consciousness.
What do you think?

Katharina. It's so obvious. Is it even a philosophical opinion?

Johan. Yes. It's a bit primitive. I haven't done it but I think it is possible to extract important philosophical lessons from it.

Katharina. Do you? So what's the meaning of life then?

Johan. Based on the difference between two lumps?

Katharina. Yes.

Johan. Am I getting this right? You want some external source for the meaning of your life?

Katharina. I didn't say that.

Johan. Do you or not?

Katharina. Are you trying to trick me? If it's external it's not about me. If it's internal I could figure it out for myself.

Johan. But can you?

Katharina. So. If it's external I can ask anyone with that kind of knowledge. If it's internal and I cannot reach it, I could ask for help from a consultant.

Johan. I thought that was why you were here.

Katharina. Can you help me?

Johan. I did.

Katharina. ….

Johan. ….

Katharina. How?

Johan. Do you think the meaning of life has to do with the difference I mentioned?

Katharina. There is no meaning of life without God.

Johan. Is there anything without God?

Katharina. We are here so God exists?

Johan. I think so, yes.

Katharina. What's the meaning, then? To just exist?

Johan. It's not that easy.

Katharina. But if God exists, doesn't God have a purpose for us?

Johan. God may have a purpose for us but now we are back to an external source of your meaning with your life. If one lump of matter doesn't have consciousness and another lump of matter —you —do have consciousness, could you not build upon that?

Katharina. I'd love to. But how?

Johan. No matter how you became conscious, you did. Doesn't that matter — enough. It's like the difference between life and death, it means everything.

Katharina. Have you read Hegel? I just came to think of him.

Johan. Not really. Why?

Katharina. Perhaps my meaning neither comes from the outside, nor from the inside. Perhaps it is both? You like that, don't you? That's all you're writing about.

Johan. Yes. It is. I think I have an idea of what you are getting at.

Katharina. Yes. If God is part of our self consciousness, there are two sides of that coin. As you have suggested, on the one side, God then would know what we know about ourselves. On the other side, what if the accumulation of self aware creatures' self conscious contents somehow would build up a "super subject", a subject consisting of "the sum" of a set of the set of all dead, living and yet to be born subjects? According to that account the meaning of my life could be external to me, although I would be a part of it, to make it short.

Johan. Exactly! Then God would *become* conscious via the self conscious creatures God has enabled as the first cause.

Katharina. I have read that and the conclusion *ist jenseits dieser Welt*. Have you seen anything like it?

Johan. Doesn't it resemble the atman-Brahman pair in Hinduism?

Katharina. I don't believe in God but now this? *Wir sind klein und unwissend. Wir brauchen Wissen, das von außen kommt. Wie finde ich nun den Weg zurück?*

Johan. We have done a good job. I'm a strong believer in non subjective knowledge. Perhaps you have seen my attempt to use the hypothetical-deductive method? It's neither empirical, nor intuitive. It's really trial and error. It's a long time since the axioms had to be "self evident". As long as you "believe" in Karl Popper.

Katharina. I don't care about such matters. I prefer to keep the boundaries between separate disciplines. I'm a scientist. End of story. [Leaves.]

Plato and Aristotle

Plato. Let us all be philosophers for a day. As back in the old days.

Aristotle. *All of us?* It's only us here? What is this?

Plato. You only see me but we are all here. Everybody's here. Let us all be philosophers for a day.

Aristotle. I am a philosopher.

Plato. You *were* but turned into a scientist.

Aristotle. I don't need this

Jesus and Jeito

Jeito.
At last. It's you.

Jesus.

…

Jeito.
How are you?

Jesus
What can I say?

Jeito.
You okay?

Jesus.
Absolutely.

Jeito.
Nice to hear.
I feel a little bit embarrassed.

Jesus.
There are so many stories.

Jeito.
Important stories.

Jesus.
Yes but I am the man behind them.
Just a man.
What do you see?

Jeito.
I just have the sensation of smelling something I believe is coming from jute sacks.

Jesus.
That would be my clothes.

Jeito.
…

Jesus.
…

Jeito.
That feels like a recognition.

Jesus.
I believe it is.

Jeito and

Jeito.
Hey.
Who are you?

Unknown.
I don’t know.

Jeito.
Do you look familiar?

Unknown. ….

Jeito.
When are you?

Unknown. ….

Jeito.
You are not me?

Unknown. ….

Jeito.
I feel your light.

Unknown.
….

Jeito.
Yes.

Unknown.
?

Jeito. Who were you?

Unknown.
I was a long time ago.

Jeito.
Okay.

Unknown.
I was murdered.
With a knife.
From the low belly upwards.
Right to left.
He was right handed.

Jeito.
….

Unknown.
Who was I?

Jeito.
You were the prophet.

Unknown.
I was going to church?

Jeito.
You didn’t know what to do.

Unknown.
I was confused.

Jeito. I have been confused.

Unknown.
I know.

Jeito.
Have you written anything.
Anything I can read?

Unknown.
I don’t think so.

Jeito.
Perhaps it doesn’t matter?

Unknown.
Perhaps.

Jeito.
It’s a city?

Unknown.
I think so, yes.

Jeito.
Tell me.
What did you learn?

Unknown.

He spoke to me.

Jeito.
Yes.
You thought you were mad.

Unknown.
….

Jeito.
It was hard.

Unknown.
I shouted.
Did I upset someone?

Jeito.
You were doing your best.
What you thought was right.

Unknown.
Sorry.
It seems that I can’t help you.

Jeito.
What did you learn?

Unknown.
Nobody understood me.

Jeito.
Yes.
What did you learn?

Unknown.
It’s hard.

Jeito.
What did you learn?

Unknown.
Stop it.

Jeito.
You are dead.
What did you learn?

Unknown.
Ok.
I can’t die.
I’m dead.
You tell me.

Jeito.
It’s terrible.
What happened.

Unknown.
?

Jeito.
They killed you in the name of the Lord.
You learned that God needs help.
We have to help him.
Can you remember now?
Who are you?

Unknown.
I am you.

Jeito.
Yes.
But before.
Who were you?
Please.

Unknown.
I was killed by a brother.
I was a monk.
In France.
1673.
Je m’appelle Eduardo.

Jeito, Socrates and Plato

Jeito.

I have been waiting a long time to meet you.

Finally.

How are you?

Socrates.

I don’t know.

Should I?

Jeito.

Sorry.

You hear me.

Do you see me?

Socrates.

I don’t think so.

Who are you?

Jeito.

Sorry.

I’m Jeito.

You’re Socrates.

Socrates.

Yes.

But could you please answer my question?

Jeito.

I’m searching for wisdom.

I have been learning about myself half my life.

Socrates.

That’s good.

What have you learned?

Jeito.

That it’s worse than I thought.

And better.

Socrates.

I like that.

How can you be alive?

Don’t they kill you for wisdom where you come from?

Jeito.

…

Socrates.

Okay.

What more?

Jeito.

Now it’s your turn.

Please.

Socrates.

I love my wife.

She’s dead now.

You cannot satisfy the gods.

What more?

You can discuss after death.

Obviously.

Friendship is important.

You can see further than you think.

What more?

Knowledge starts with knowing yourself.

Plato didn’t believe me.

I don’t know.

Can you continue?

Jeito.

We’re all one.

Socrates.

You learned that from inspection?

Jeito.

No.

I was told that.

Socrates.

Thought so.

What else?

Jeito.

No man is an island.

Socrates.

Come on now!

Jeito.

I project my own shit on others.

Socrates.

That’s better.

More?

Jeito.

I’m angry as hell.

Socrates.

More?

Jeito.

What do you care?

Socrates.

Fair point.

But tell me.

Jeito.

I’m here talking to you.

That’s a miracle!

Socrates.

Really?

It’s just how things are.

You see it yourself.

Through yourself.

By looking at yourself.

The question is what we learn from it.

The learning is the miracle.

Have you learned anything?

Jeito.

That we are allowed to learn?

Socrates.

That’s a fact.

What do you learn from it?

Jeito.

We are free?

Socrates.

That is also a fact.

What do you learn from it?

Jeito.

I get a bit scared.

Socrates.

That’s a fact.

What do you learn from it?

Jeito.

That freedom is scary.

You have said that, haven’t you?

Socrates.

I can’t remember everything I’ve said.

What are you doing here?

Jeito.

I don’t remember.

Socrates.

I think you just now used your freedom. Was it scary?

Jeito.

No.

Can I ask you something else?

Socrates.

By all means.

Welcome to ask whatever you want.

Jeito.

Okay.

Thanks.

Do you think you can find *all* knowledge inside yourself?

Socrates.

Why not?

Jeito.

Can I find all knowledge inside myself?

Socrates.

That’s the same question.

Jeito.

All men can find all knowledge inside themselves?

Socrates.

All humans can do it.

Given reasonable circumstances.

Do you disagree?

Jeito.

No.

I think I understand your point.

Is there a certain *age* we are talking about?

Socrates.

You make me laugh.

I’m actually angry.

Really nice feeling.

Please, ask something.

Jeito.

Are we in God now?

Socrates.

Who?

Jeito.

Are we in God now?

Socrates.

Which one?

Jeito.

There are more than one God?

Socrates.

Are there any?

Jeito.

Where are we, do you think?

Socrates.

How do you define *any* God?

Jeito.

Fair question.

Can you help me?

Socrates.

We’re all alone.

Won’t you say?

Jeito.

So.

We all have the same God or there is no God?

Socrates.

Is there a God?

Jeito.

Can we ask someone else?

Socrates.

We could try.

I don’t know how, though.

Jeito.

Hello! Is there anybody out there?

Hello! Is there anybody in here?

Plato.

You threw away all my books!

Jeito.

I did. I needed to.

Socrates.

Hey there, my old friend.

How are you?

Plato.

Am I invited?

To what?

By whom?

What is this?

How do I know that that man had thrown away my books?

I’m fine, thanks?

How are you?

Socrates.

It’s all a blur.

We where trying to clear these things out when you answered our prayers.

We need help.

I’ll try to find a suitable question. ….

What do you experience, Plato?

Plato.

Friendship.

Socrates.

Jeito?

Jeito.

Anxiety.

Socrates.

Okay.

I experience a feeling of responsibility.

So.

What do we learn from this? ….

What do we *know* considering this? Anything?

Jeito.

We are *somewhere.*

We have *contact*.

Socrates.

What is *contact*?

Plato.

Our words matters.

They are meaningful.

We affect one another.

Socrates.

What do we learn from that?

Plato.

We are not the same.

We're *individuals*.

Jeito.

We're *subjects?*

Plato.

Yes. We're different but connected.

Socrates.

So.

We have learned that our experiences tell us that we are separate and connected.

And that we are *somewhere*.

And the specific experiences are feelings of anxiety, friendship and responsibility?

Jeito.

Yes.

Plato.

Yes.

So.

Where are we?

And why?

How did we come here?

Socrates.

Is it okay that I take the lead here?

I’m still feeling responsible.

Plato.

Please.

Jeito.

Yes.

That’s fine with me.

Socrates.

Plato.

Do you see anything?

Plato.

Can’t say I do.

I have images.

But I cannot say I see anything.

Hard to explain.

Socrates.

Yes.

Let’s carry on. ….

What does it matter *where, why, how*? Anyone?

Plato.

Yes.

Would it change anything?

Probably not.

It is how it is.

What is this language, by the way?

Jeito.

It’s some kind of language but we don’t talk it.

We communicate in some way but not as in “talking” talking.

Do we even have mouths?

Or ears?

Or hands?

For me the language is English.

What about you, Socrates?

Socrates.

It’s a blur.

But the actual *language*.

Is it even *me* talking.

I don’t know.

How is it for you, Plato?

Plato.

I suddenly remember things.

The clothing people had.

Smells.

Fresh air coming in from the sea.

Grapes.

Walks.

My hand gesturing.

I do communicate these things now.

But how, I don’t know.

I don’t think I like these questions.

But I like you two.

We’re almost a crowd.

Aren’t we?

Socrates.

If we go.

Where do we go? If I go.

Where do I go?

Can I go? Anywhere?

It doesn’t feel like it.

How free am I?

How free are we?

It’s like exploring a cave that you cannot escape?

Plato.

Responsibility?

Someone?

Where is the “panic button”?

I’d like that sea breeze.

Jeito.

….

Plato.

….

Socrates.

….

I’m not so sure now.

Give me a minute.

….

Everyone is gone?

Plato.

Excuse me?

Socrates.

Okay.

That was funny.

On me. ….

We are here.

Some others may be somewhere else.

….

I’m thinking of gods.

Are we back where it all started?

Will it start all over again?

…

I seem to have difficulties finding the right question or the right questions.

Jeito.

Okay.

Could we try shifting focus?

A difference between you two and me is that I haven’t, to my knowledge, died yet.

Perhaps this is the chance to tell the people something about the afterlife?

Plato.

Nice try!

Haven’t we concluded that we don’t know shit?

What’s to tell?

That you met two dead guys that couldn’t tell you nothing.

Socrates.

Give me a moment!

Okay?

….

Perhaps you are not dead but what guarantees that you will be able to go back?

Your life isn’t here?

Am I right?

Jeito.

Busted!

Kidding.

I hear my cat doing her thing behind me.

I’m alive.

But then again I don’t know about the afterlife.

It’s up to you guys.

Socrates.

Do I remember anything about it?

How could I?

Sorry.

When you’re dead you are dead.

I don’t know about this state.

Plato.

Agree.

But Jeito, surely you are almost dead?

Otherwise, how could we have this nice talk?

Socrates.

Isn’t it *either or*?

Jeito cannot be both.

And we cannot go back?

Plato.

I would say that he is dead.

He’s exactly like us.

Or?

Socrates.

Who could tell?

Jeito.

Let’s spin this around.

I’ll go back to the cat and check whether I still can have connection with you two.

Are you with me?

Socrates.

Whatever.

Plato.

I know you are after me.

Don’t try to trick me!

I’ll haunt you.

Jeito.

See you soon.

…

Socrates.

What have you learned?

Plato.

Thank you.

Jeito.

I think, that we are all the same but different.

P and Jeito

P.
I want to follow the river.
Wherever it leads.

Jeito.
I think you are.

P.
Yes.

Jeito.
I’m down the river.

P.
Yes.

Jeito.
I’ll wait for you.

P.
Okay.

Jeito.
Or you’ll will wait for me.

P.
Yes.

Jeito.
The river takes everything to its place.

P.
Yes.

Jeito.

The river doesn’t come.
It is.

P.
Yes.

Jeito.
I think I hope to watch it.
I should step in.

P.
Yes.

Jeito.
Am I afraid of the river?

P.
Yes.

Jeito
I didn’t know.

P.
You did.

J.
What shall I do?

P.
Step in?

J. How?

P.
You know.

Jeito.
I do?

P.
…

Jeito
I’ll die?

P.
…

Jeito.
I will die if I step in and I will die if I don’t step in?

P.
…

Jeito.
What do I want?

P.
…

Jeito.
…

P.
…

Jeito.
You can’t know?

P.
…

Jeito

…

P.
Can you know?

Jeito.

I can’t?

P.
You can?

Jeito.
It’s not an individual thing?

P.
No.

Jeito.
Let me see.

P.
Yes.

Jeito.

…

J.
I want to find peace.

P.
You are blessed.

Jeito.
I’m not.

P.
…

Jeito.
What does that mean?

P.
…

Talk

Ladies and gentlemen
Friends

I am honored to have the opportunity to give this talk.

I am a clinical psychologist by profession and will therefore start from that end.

The attempt to ground psychology in neurology is doomed since if mental objects in the end can be reduced to the level of neurology there really are no mental objects.

The mental objects would be neurological entities arranged “mental-wise”, as one could put it.

This is the elephant in the room and I want to show that there is an alternative, that the elephant is like the boogeyman — scary but unreal.

I will go by back as far as possible, to the very basic assumption that our understanding of ourselves and the world builds upon. This basic assumption comes from the scientific revolution and states that the physical world is causally unaffected by non physical things. As Princess Elisabeth of Bohemia noted to René Descartes that, however, seems to block any causal interaction between the physical body and a non physical mind.

In 2017 I solved this by a redefinition of causal closure that permits interfaces between separate ontological domains. This solution permits that the mind is non physical and it permits that the physical universe has a cause, claims that were impossible to state on scientific grounds before the redefinition.

As the redefinition of causal closure permits a psychology based on the subject the experiencing subject is allowed to be accounted for in science. This is the basis for Macro psychology, which I introduced in 2020.

I have for long hesitated to speak out the essence of this talk. In June, in the second year of the pandemic, however, I thought about the resemblance between Sir Isaac Newton’s book Philosophiae Naturalis Principia Mathematica (Mathematical Principles of Natural Philosophy) from 1687, and the central thought in the practice of Mindfulness meditation, that our thoughts are about the reality and not *the* reality, that, for instance, our thoughts about what we see is different from the very experience of seeing, and, that the mathematical description of our physical world is different from our physical world. Physics and its mathematical descriptions of our world is not our world. In the Mindfulness practice experiencing the world beyond the thoughts is a real eye opener. I then thought about Percy Bridgman’s book from 1927, The Logic of Modern Physics, and the introduction of the operational definition in physics and in the natural sciences. Almost one hundred years later the operational definition is so consolidated as the gateway to the reality that the world is turning crazy. My wife Barbara, who is an experienced psychodynamically oriented psychologist, called the emergency center about a psychotic patient and was dismissed on the grounds that she could not account for the “evidence” that the patient was psychotic. This, of course, since there is no operational procedure that can capture, from the outside, the terrifying psychotic experiences that the patient has within herself.

The craziness is about denying our inner worlds real existence. Fortunately, though, the operational definition frenzy cuts both ways: the very means by which physical things are accounted for, mathematics, in itself cannot be operationally defined.

Science tells us that our sense of self is an illusion. Technically, this is to say that “the first person perspective” really is a function of a specific part of the brain. Neuroscientists are trying to prove this and many think they have. At a conference in Heidelberg, Germany, one of them, stunned by the evidence but having himself as an object and as a subject in juxtaposition, raised his hand and asked the speaker: “This only applies to patients, right?”

We have our inner truths, we know of our experiences in a way that no other can do. Science cannot account for that and is therefore trying to explain away our very subject. Another “black hole” in the sciences, within physics in this case, is the very black holes. By the equations of Einstein black holes are possible and they are now detected. But what is going on inside of them we cannot now of by means of operational definitions. So they do not exist?

I will present another story. That there may be physical objects but also mental objects and mathematical objects. It’s core thesis is this. Just as mathematicians found out that the parallel postulate of Euclid was independent in relation to the other ones and could be replaced with another type of postulate, giving raise to new geometries, the fundamental problem for Descartes that the body and the soul have no

place to interact, can be solved if we alter the way that we define what has been known as "the causal closure of the physical". The standard definition gives raise to the everything-is-physical view that is pre-dominant. At closer inspection, however, the underlying principle is that *any* ontological field, be it mathematical, physical, or mental, is causally closed. The doctrine that everything is physical is simply a brute claim. We have the same right, however, to claim that everything is mental (as George Berkeley), or, that everything is mathematical (as Max Tegmark). I proved this in 2017 by example. I suggested another definition of causal closure (of any ontological field). This definition builds on the idea that we do not need to know where the causes comes from to know that a region is causally closed. We only need to know where the causes do not come from.

When it comes to ontological regions this shift opens up for pluralism which for example means that the mind could be non-physical.

To secure causal closure, the idea that physical things, for instance, cannot change what is true mathematically, or, that we cannot move physical things only by thinking about them, we will base the work on the principle that ontologically homogeneous domains do not cause ontologically homogeneous domains. This principle secures causal closure. The question is if there is more than one ontologically homogeneous domain. We have the obvious option to contemplate the idea of some non homogeneous domain, some ontologically heterogeneous domain. Ontologically heterogeneous domains, of course, are allowed since the principle only forbids ontologically homogeneous domains to cause ontologically homogeneous domains. Ontologically heterogeneous domains are allowed to both be caused and to cause ontologically homogeneous domains. So, now we have opened the Pandora's box. "Ontologically heterogeneous domains", what would that be? Well, that question is premature. Actually, it is so extremely abstract to its nature as it is only accounted for as something that is allowed. All we know is that it is not an ontologically homogeneous domain.

The urgency, thus, is about accounting for non mathematical physical aspects of the reality, as well as accounting for non physical mental aspects of the reality. As long as we do not have the tools for understanding the difference between the mathematical underpinnings of the physical and the physical in itself we tend to try to explain away the very physical. And the same holds for the mental. As long as we do not have the tools for understanding the difference between the biological underpinnings of the mental and the mental in itself we tend to try to explain away the very mental.[1] More importantly, perhaps, is that the realm that harbors our mental content, the very consciousness, in the perspective that I am suggesting, no longer needs to be thought of as in the end really being some kind of neurological stuff. In this light Wittgenstein was right when he questioned the existence of the beetle in the box. Without a framework that encompasses and explains both the objective and the subjective side of ourselves we on epistemological grounds should choose: are we physical or mental? With help of the notion of ontologically heterogeneous domains we are allowed to be both.

[1] Extrapolated this sheds light upon the existential angst caused by the uncertainty whether anything exists. If the mental is physical the physical perhaps is mathematical. But if the physical is mathematical perhaps the mathematical really is nothing. Then there is no ontological foundation for our existence. To avoid this the ad hoc postulate of *ex nihilo nihil fit* (nothing comes from nothing) was introduced early on. In the light of the possibility of ontologically heterogeneous domains, however, the idea of coexisting interdependent separate ontological domains opens up for a coexisting ontological domain of nothingness: the pair of ontologically homogeneous and heterogeneous domains encompasses also nothingness.

Jeito

I say.

Satan squeezed Johan into a corner.

The light I gave him made him find his way out.

He continued to focus my voice.

I kept him alive and he transformed my words into papers.

Papers

Intentionality

I want to discuss Crane's first analogy relating to Peter van Inwagen's special composition question: how do the parts of an object come together to make a whole? Crane relates van Inwagen's question to material objects why his analogy should relate to material objects. In this frame Crane's Explanation of Intentionality is about material objects. Crane is also sceptical that we need to answer this question for objects in general. Combining the domain of material objects with the scepticism of the relevance of van Inwagen's question Crane's view disregards both the tradition of science to value robust principles and the possibility of any answer to van Inwagen's question to overlap the gap between material objects and mental occurrences. In this commentary I will discuss an answer to van Inwagen's question that actually suggests it could be meaningful to see mental 'objects' as objects. The discussed answer to van Inwagen's question overlaps the body-mind gap by suggesting a principle that defines the notion of 'object' that goes beyond material objects. The principle, then, is a philosophical perspective on objects and not an empirical perspective. The notion of 'object', thus, that is suggested, is ontologically neutral. Crane's conclusion that we do not need an explanations of intentionality as such is embedded within the naturalism he is relating

to. To explain intentionality per se, however, in a pluralistic setting, is possible if we first locate it in a probable ontological domain, and then explain it on an abstraction level where we move *with* ontological domains and not *within* an ontological domain. Intentionality per se may be impossible to define within naturalism but may be possible to define within a science that has a non-physical realm as its subject-matter. This is as likely, philosophically, as that the physical entity of *mass* cannot be defined within a mathematical realm but in a physical realm.

A Difference That Makes a Difference

Abstract

Philosophers nowadays tend to walk alongside science. Doing so enables discussions. Taking a step back, though, we in perspective can see science as cut loose from philosophy with no guidance from it — in a non-absolute sense. As a stand-alone discipline physics makes it own rules, so to speak. In this frame philosophy can act as a coach or perhaps an old fashioned psychotherapist who listens and tries to help the science understand itself in new ways. But what if "philosophy" finds evidence that physics should reevaluate its own fundament? That is something different and is hard to communicate walking alongside each other. In relation to "navigate " the enterprise would be something like an expansion of the map. What I want to lift is the need to communicate anything of the proposed kind as something different and important for physics but not too different. What would be needed, thus, is a Socratic dialogue between physicists and philosophers. I will now describe what I want to be communicated to the physicists. The topic concerns something that cannot be derived from science so it is something that belongs to old fashioned philosophy. The starting point is physics and its subject matter the physical.

Socratically we can ask if everything that is physical is physical. Then we ask if things that are not physical are physical. The next question can be if all physical things are only physical or if they also could be of some non-physical kind. We expect the answer to be "no". We conclude that physical things are physical and only physical. We can then ask if physical things are of only one ontological kind. Since that already seems to have been established we may assume that it will be confirmed. We call a domain of things of only one

ontological kind “an ontologically homogeneous domain” and ask if the physical is such a domain. The physicist is likely to accept this. We then ask if anything physical can be affected by anything that belongs to an ontologically homogeneous domain that is not physical. Having denied this we give the physicist the follow up question if an ontologically homogeneous domain can affect an ontologically homogeneous domain. The physicist asks what we mean with “affect” so we restate the question: “can an ontologically homogeneous domain cause anything in another ontologically homogeneous domain?” The physicist’s negative answer prompt us to ask the final question if an ontologically homogeneous domain can cause an ontologically homogeneous domain. Reluctantly the physicist says “no”. The scientist has now opened the door to the possibility of one or more ontologically *heterogeneous* domains. Methodologically we cannot rule out the possibility of such domains without dealing with them. The principle of parsimony, also, would permit ontologically heterogeneous domains to both cause and to be caused by ontologically homogeneous domains as we already have a causal closure account (an ontologically homogeneous domain do not cause an ontologically homogeneous domain).

Friends,

I have had the fortune to find a way to unite theology and science. It is and has been a bit overwhelming. My aim was to integrate science and hermeneutics but I ended up with a theory that integrates pretty much everything. In this paper I focus the fundamental principle that seems so simple that it could taken for a tautology but it is not. The principle, or, rather, the basic assumption, is that an ontologically homogeneous domain does not cause an ontologically homogeneous domain. By this device all ontologically homogeneous domains are causally closed in relation to other ontologically homogeneous domains. Ontologically heterogeneous domains, on the other hand, are permitted to cause and to be caused by ontologically homogeneous domains. The very first ontologically homogeneous domain, also, is permitted to be caused by an ontologically heterogeneous domain. Science, therefore, would concern inquiries into all ontologically homogeneous and heterogeneous domains except for the first ontologically heterogeneous domain. The first ontologically heterogeneous domain would be the field of interest for theology. Consecutive ontologically homogeneous domains could be the platonic mathematical universe, the physical universe and ourselves as subjects.

Universes and interfaces

Friends, it is time to reconcile science with theology. Science builds upon the basic assumption that the physical is causally unaffected by anything non physical. That leaves science detached from theology. If we instead see the physical for what it is, an ontologically homogeneous domain, we can let science be based upon the basic assumption that an ontologically homogeneous domain do not cause an ontologically homogeneous domain. By that we let science leave the door open for ontologically heterogeneous domains. Heterogeneous domains consist of more than one ontological kind whereas homogeneous domains consist of only one ontological kind. We call ontologically homogeneous domains for *universes* and ontologically heterogeneous domains for *interfaces*. The physical, thus, is a

universe. Based on the basic assumption that universes do not cause universes it is allowed that interfaces both can be caused by and cause universes. The physical universe, therefore, can be caused by an interface.

Vertical interfaces

If we let interfaces that cause universes be called *vertical* interfaces the very first universe would be caused by a vertical interface. As the first cause, therefore, God is a vertical interface, a realm with more than one ontological kind.

Horizontal interfaces

We can also look at the event that there are interfaces that do not cause universes. We call such interfaces *horizontal* interfaces. A specific kind of horizontal interfaces are horizontal interfaces that are caused by universes. This kind is of foremost interest for science. The combination of vertical and horizontal interfaces opens up for causal interactions between universes. The basic assumption that universes do not cause universes forbids direct causal interactions between universes but with help of vertical and horizontal interfaces there is room for indirect causal interactions. We have two immediate applications of this option. For science this is this is a door to a new scientific revolution.

Black holes and the original singularity

The platonic mathematical universe can be viewed as a homogeneous domain. If we take it that the mathematical universe can produce a mathematical singularity that turns into an interface that singularity can be viewed as the original singularity giving raise to the Big Bang. That singularity, then, would be the cause of the physical universe, a vertical interface. In the next step we now that the physical universe can produce black holes as consequences of gravitational collapses, that is, singularities. We can assume that those singularities — the black hole singularities — are horizontal interfaces not causing any universes.

Consciousness and self-consciousness

We can now turn to biology and the raise of consciousness. A neglected part in the philosophy of mind is the distinction between consciousness and self-consciousness. If I see you I may be aware of it. The question is if I must be able to be aware of my seeing you to be able to see you? If that is the case only those with the capacity for self-consciousness can see or hear things. That is an option. The other option is that for instance cats can see me but that they do not have the capacity to know that they see me. In the latter case we can proceed to something substantial. In that case the very being able to see, or to be able to be conscious of something, is the first mystery, the first thing to account for in the philosophy of mind. I suspect that this very consciousness is the vertical interface causing the mind, or our subject. The next thing to account for is the subject being able to be conscious of its very consciousness — the self-consciousness. I suspect that the self-consciousness is a horizontal interface.

Extended interfaces

I will now close the circle. Say that there is yet more kinds of interfaces. One possibility here is that the first cause is part of horizontal interfaces. A horizontal interface, then, without the first cause, would be a horizontal interface. A horizontal interface with the first cause, on the other side, would be an extended interface. Two options here are that the first cause is part of black hole singularities and/or is part of our self-consciousness. With this options God also would be horizontal interfaces.

Reconciling science with theology

We can now reconcile science with theology if science can acknowledge that it concerns one or more ontological domains and if theology can be said to concern an existence that concerns more than one ontological domain. Via the concept of interfaces science can no longer claim the non-existence of God as the first cause. God as the first cause is an open question for science. With the introduction of the concept of mathematical-physical ontologically heterogeneous domains, however, the burden of proof is now on the scientific side. If there is one interface there is an enormous push for God as the first cause. Science now has to prove that black hole singularities are not interfaces to secure the claim of physicalism. Another punch is the explanation of the mind-body relation. Without interfaces there is still no account for the relation. Traditional science, therefore, is inclined to explain the very mind away.

On the Existence of Mem (ם)

1. Definition of Mem

We will define Mem as a set of things.

1.1

Mem is related to causality and the *first* cause of things.

1.2

We will start with looking at the set of everything that is physical (the physical), however one individuates physical ‘things’.

1.3

We next ask if the physical consists of things (however they are individuated) of only one kind (that is, only physical things).

1.4

With that tautologically established we ask if the physical can be causally affected by anything from another set of things of another singular kind. We will answer this by defining a set of things of one singular kind as the set of all things that can causally affect one another (in principle or practically). By this the answer to the question above is ‘no’.

1.5

By defining a set of things of one singular kind as the set of all things that can causally affect one another the next question is if there are such sets. This question is multifaceted. An interesting case is the empty set. Is that set a set of all things that can causally affect one another? Or can we just ascertain that the empty set is a set of things of one singular kind since it in fact is one of a kind?

Another question is if there can be more sets than one that consists of ‘all things that can causally affect one another’.

Given our definition of a set of things of one singular kind as a set of all things that can causally affect one another two separate sets of things of a singular kind cannot causally affect one another.

1.6

We will now define a new entity that helps bring causality back in the picture. Consider the *imaginary* numbers and the *real* numbers. No imaginary number is a real number and vice versa. Based upon the imaginary numbers and the real numbers we can define *complex* numbers with both imaginary parts and real parts. Accordingly, we can define things that are of a *non*-singular kind, consisting of more than one singular kind. Also, just as complex numbers *supervene* on imaginary and real numbers a thing of a non-singular kind would supervene on things of singular kinds. Such a thing of a non-singular kind is open to causally intervene between two sets of things of different singular kinds without violating the definition of a set of things of one singular kind.

1.7

The things of a set of things of one singular kind (the set of all things that can causally affect one another) are now allowed to causally interact *via* the defined supervening set, with a set of things of another singular kind.

The number of causally linked sets of things of a singular kind is now indefinite. Between them, though, there is a supervening set as defined.

1.8

We can now define Mem in relation to the indefinite set of sets of things of a singular kind and the intermediate supervening sets. Since there is a possibility that nothing exists we also take into account the empty set which we determine is a set of things of one singular kind.

1.9

The disjunctive definition of Mem: Mem is either the smallest element of intervening sets in the indefinite set of sets of things of a singular kind and the intermediate supervening sets, or, if nothing exists, the empty set.

2. On the Existence of Mem

If there exists anything except for the empty set there is an intermediate supervening set between the empty set and the second set of things of one singular kind. That supervening set is Mem. If there exists nothing except for the empty set Mem exists (as the empty set).

3. *Comment*

The argument focuses a definition of a supervening set of things of a non-singular kind. Besides that, it really only claims that if we define Mem as some set of existing things or the set without elements, Mem exists. That, though, is tautological. The argument, thus, can only be interesting if anything besides the empty set exists. That only the empty set would exist, however, is refuted by this very claim.

A Dark Meontology

1. Introduction

As Husserl noted the Cogito does not reveal the object but the subject. In this paper I discuss the change of perspective from the premises that causal closure is true and that the subject cannot be reduced to the physical being. I follow an extrapolation and outline a groundless ground of all things on the basis of a redefinition of a Western cornerstone of philosophy.

2. New Light on Causal Closure

The principle of the causal closure of the physical traditionally demands that the physical neither is affected by something non-physical, nor affects anything non-physical. Given that we cannot reduce the subject to an object the traditional view of causal closure is false. The standard procedure used to maintain a separation of object and subject, therefore, has been to reject causal closure. Accordingly, subject and object can be casually linked. For instance, the conscious subject can have a body.

Recent work, however, yields new possibilities to conceptualize the relation between consciousness and, for example, the body it is connected to. Gamper (2017) has discovered that it is possible to see different ontological fields as causally connected even though causal closure is true. In his redefinition of the general principle of causal closure he notes that causal closure really only requires that there are no causes coming in from another universe, to let a particular universe be causally closed. Accordingly, interfaces between universes are permitted.

3. The Cause of the First Universe Comes from an Interface

This view of causal closure is consistent with the view that a universe can cause an interface and that an interface can cause a universe. First, if a universe causes an interface the universe is still causally closed since nothing is changed regarding what causes things in it. Second, if a universe is caused by a universe, that universe can be causally closed if the interface is not a universe. How to account for an interface that is not a universe is an opening question that is discussed below. If, however, an interface is not a universe, while more than one universe is possible (each universe causally linked to at least another one) we have a situation where it is meaningful to discuss a *first* universe.

This situation, when we potentially have more than one universe as well as a first one, is quite different from a situation where we have only one universe that depending on how we define causal closure cannot have a cause. Specifically, also, we can identify the context of a first universe. As long as we only have universes or a single uncaused universe to consider, we are unable to see where the cause of the first universe comes from. In this new light, however, we can posit that the first universe is caused by something that do not belong to a universe but to an interface. Accordingly, the first universe has a cause coming from an interface. Before we continue to the question of what an interface could be, it is important to first put the new light of the redefinition of causal closure and the entailed possibility of a causally connected multiverse on the eventuality of an empty universe, to put the light on – *Nothingness*.

4. Nothingness – the Empty Universe

The empty universe, nothingness, has for long seemed a bizarre possibility. In line with the traditional view of causal closure the universe is exactly that – *the* Universe. The traditional view of causal closure restricts the number of universes to *one*. And if there is only one universe, it would be difficult to account for anything existing, if that universe is empty.

In the multiverse scenario, however, an empty universe, *nothingness*, is consistent with other universes, such as a physical one, since *nothingness* causally can be linked to non-*nothingness*. The redefinition of causal closure is consistent with the view that nothingness can cause an interface between nothingness and non-nothingness and that this interface causes a universe that is not empty. Nothingness, accordingly, would cause an interface and the interface would cause something existing, a universe that have existing things in it.

We can now discern the contours of an interface. We are in the twilight zone between existence and non-existence. The interface, also, per definition, is not a universe. So what it is? We can create artificial light by looking at something particular that does not exist in the *Nothingness*. Let's pick, for example, *p*. We then have this specific ting, *p*, which does not exist. So, what about the negation of *p*, *not-p*. Does *not-p* exist in the Nothingness? Well, of course not! Nothing exists in the Nothingness. So, we have some explaining to do. The contour of an interface in this particular case is that the negation of a negation of something resembles something existing.

5. A dualistic hypothesis

In this section I will show a way to make an explicit interface hypothesis. The procedure is to contrast Gamper's (2017) definition of a universe with Descartes' efforts to conceptualize the differences between mind and body. Gamper's redefinition of causal closure builds upon the inherent feature of any version of causal closure that it presupposes the possibility of more than one universe. On this ground we can define a universe by focusing differences between any two separate universes. Accordingly, Gamper (ibid.) defines "a universe" as "a domain of things of a certain ontological status, e.g., physical things or mental things" (p. 631). If we conjectured that there was only one universe the information that it contained "things of a certain ontological status" would not be that interesting. If we open up for a possible plurality of universes, though, the definition is informative and very general.

Gamper (ibid.) notices the danger of interfaces collapsing into universes and comments that "[a]n interface between universes can be seen as a domain that violates the suggested account of causal closure, suggesting a view in which universes are causally closed whereas interfaces are not." (ibid., p. 631). The risk of a collapse, however, is obvious:

I. An interface is not a universe, but
II. A universe is "a domain of things of a certain ontological status". Therefore,
III. What is an interface?
IV. Whatever an interface is, it should contain something.
V. Nevertheless, if an interface contains anything, is this interface that contains at least one thing of "a certain ontological status", therefore, a universe?

5.1 The dualistic hypothesis

The dualistic hypothesis shows that there is an alternative to the two cases that comes easy, that any interface either is empty or that it contains one thing of "a certain ontological status" and therefore is a universe. I will use Descartes' attempt to identify the categorical differences between mind and body as a starting point towards the dualistic hypothesis.

Descartes categorizes both the essential properties of the body and the essential properties of the mind. If we see these as definitions of types of ontological categories we can permit us to focus only one category on the grounds that if the other type or category differs in any way, we have "at least two" ontological types or categories.

Descartes says about the body that "the essence of a body is to have spatial extensions and to be located in space" (in Kim, 2011, p. 34). We can now try to use Descartes' first essential property for the body to see what happens if we put it into an interface which also contains that which isn't of that very type. Doing so we obtain

"an interface contains that which has spatial extension and [simultaneously] that which does not have spatial extension". Thus, if we entertain the basic assumption of non-contradiction, there is no interface. This consideration seems, for now, unavoidable. If we state any property of a certain ontological type and simultaneously claim that an interface contains something that has this ontological property and an ontological property that is not this property, seemingly, we will always end up with an inconsistency. However, if we use Descartes' second essential property for the body, we can with adjustments make some progress. Descartes' second essential property for the body is that it is located in space. In our case, then, the contents of an interface is both located in space and not located in space. Therefore, we return to an inconsistency.

I will now suggest a small adjustment which I think solves the puzzle. The adjustment is linked to the position that we do not know the truth. Explicitly I mean that "space" can be equaled to "somewhere". According to this view Descartes' position is that physical things are "somewhere" whereas, naturally, other things are "nowhere" (they are not in space). If we spell this out, however, we find at least some degrees of freedom. Disentangling "space" from "somewhere" opens up for a new meaning of the negation. Entangled "not somewhere" means "not in space=nowhere". Disentangled we can allow "somewhere" to mean a specific place, as in "the pair of scissors are somewhere". So, if the car keys aren't "somewhere" and "somewhere" means "in space" the car keys aren't in space, they are "nowhere". In the disentangled scenario, however, if the car keys aren't with the scissors, they are "somewhere else".

With this small but important adjustment of the suggested ontological property of Descartes, we obtain

"an interface contains that which is located somewhere and that which [simultaneously] is located somewhere else". To better serve our purposes, we can adjust this proposition accordingly as

"an interface contains that which is located in a particular universe and that which [simultaneously] is located in another universe". With only one more revision, we will arrive at the dualistic hypothesis.

The dualistic hypothesis
If there is an interface between two universes, then either it consists of two entangled areas where one area is located in one universe and the other area is located in another universe or it consists of more than one pair of entangled areas.

The hypothesis opens up for the possibility of an interface being located not in any one of two universes but in both. This locational considerations is directly linked to the task of accounting for the possibility of an interface containing things of more than one ontological type. The hypothesis states that an interface has at least one pair of entangled areas where one area is located in one universe and the other area is located in another universe. One might now ask how this has to do with the very contents of the interface. As a matter of fact we can now go back to the definition of a universe and see that it actually comes to our rescue.

The definition was that a universe is “a domain of things of a certain ontological status”. The dualistic hypothesis states that an interface has at least one pair of entangled areas where one area is located in one universe and the other area is located in another universe. So, a universe per definition is the very things that compose it. The hypothesis implies that things can be located in two adjoining universes. This leads up to the conclusion that if an interface is located in two universes, it consists of things of more than one ontological type. This, since two universes are two sets of ontologically different things. The hypothesis thus implies that the contents in themselves are more than one type of ontologically separate things. The contents are in entangled areas and therefore belong to two universes where they do not belong to a universe but to an interface. The dualistic hypothesis is thus consistent with the proposition that the contents of an interface consist of more than one type of ontologically separate things, but it appears that an interface in itself is not located elsewhere than in a universe.

6. The First Interface

The first interface, the ground of all things including *Nothingness*, according to the dualistic hypothesis, is a dual existence. The first interface is the cause of the universe of nothing, *Nothingness*. To account for such an interface may seem difficult but as it happens we have all the material we need to come up with a suggestion. One alternative is to look for the causality behind *Nothingness*.

If we press *nothingness* with predicate logic, we find that *nothingness* can be understood as the result of either an existential quantifier or a universal quantifier. If we let *nothingness* be determined by a universal quantifier (“for all x: x does not exist”) we can let the first interface include, also, an existential quantifier (“there is no x such that: x exists”. If the first interface, then, encompasses both forms [“for all x: x does not exist” *and* “there is no x such that: x exists”], we would have the existing double *nothingness* as the first ground of all things.
In western culture *the first ground of all things* is God. On outline of this interface could be:

- I do not exist.
- I am nowhere.
- I am everything that exists.
- I am everywhere.
- For everywhere holds, nothing exists there (this is a *nothingness* equivalent).

The first two lines describe a singularity (if this “I” really is the basic ground of everything).

3. The dualistic hypothesis applied vis-à-vis physics

As the approach is general the dualistic hypothesis is valid for any interface. Therefore it can be applied on any conceivable interface. One such, of course, is the possible interface between body and mind. Another candidate is an eventual interface between some pre-physical realm and our physical universe. I cannot say that there is such interface but with the redefined principle of causal closure such interface is consistent with causal closure. We could say that if there is such interface we have no idea what the preceding universe could be. Alternatively we could guess, more or less well-grounded. Tegmark has it that the universe is mathematical. Perhaps it is. Perhaps, however, the mathematical universe is mathematical whereas the physical universe is physical. As the physical universe is so mathematical to its character it might not be to unlikely that a mathematical universe precedes the physical universe.

As a matter of fact an entanglement in line with the dualistic hypothesis can be considered vis-à-vis physics.

3.1 The wave function

The wave function in quantum physics relates to physical particles. The mathematics behind the wave function contains both real numbers and imaginary numbers. As I understand it the imaginary numbers doesn’t correspond to physical locations. If that is so, the situation with the wave function seems to fit nicely with the dualistic hypothesis. The wave function composition could indicate that the particles are entangled, i.e., they are located both in the physical world and in a non-physical world. Contemplating that the universe that precedes the physical one is mathematical we could suggest that the particles are entangled and that they are located both in the physical universe and in a pre-physical mathematical universe.

According to this view a quantum physics particle either consists of two entangled areas where one area is located in one universe and the other area is located in another universe or it consists of more than one pair of entangled areas. In other words, the quantum physics particle really constitute an interface between the mathematical universe and the physical universe. Of course I’m only speculating here but the application shows how the hypothesis can be used.

Particles as an interface between a mathematical world and a physical world is to complicated to even begin unpacking. The thought, though, with particles as an interface, indicates a multiverse scenario. What we see is not just an interface but an interface with color and familiar features. If we for the moment stay with this picture the interface contains ordinary things that we thought belonged to our universe. According to the “loophole” view these things don’t belong to the realm of physical things. They belong to an interface between two universes. Furthermore, the picture shows that the interface is a bit ordinary and harmless. There are particles everywhere.

As I mentioned, though, this picture is only tentative. When we go on, however, we will see that some features that we saw are coming back in the next picture. For all we know, also, even if the dualistic hypothesis is valid and can be proven within a consistent theoretical framework, an interface, or perhaps all interfaces, might be extremely small and consist of only one pair of entangled areas. These matters can only be properly dealt with within a consistent theoretical framework.

4. The dualistic hypothesis applied vis-à-vis the philosophy of mind

As I will go through in detail the dualistic hypothesis can be applied as easily in regard to the body-mind relation as it was in regard to physics. My preliminary suggestions in this area are as tentative as they were in the area of physics. As a psychologist, of course, I have the advantage of first hand acquaintance with the material.

4.1 The body-mind relation

In the philosophy of mind, we have a completely different situation compared to the application of the dualistic hypothesis to physics. The conceptual level that concerns the theories of what the mind consists of and how it is structured is very low. Again, this level should be expected because we lack an ontology that supports substance dualism. Also, even though behaviorism has been refuted philosophically, behavioral science and (psycho-) therapy is dominating the contemporary field of research into the features of the mind. This, naturally, is as it should be if we knew that substance dualism was wrong but since the debate on how to define causal closure has only begun we really cannot know that.

Concerning the mind, if it exists (as a substance of its own), it is situated on the other end of the spectrum compared to physical particles. If the mind is non-physical, in the dualistic hypothesis view, it should be dependent on the most complex physical structures (i.e., the biological organism).

4.2 The “sensation”

I will focus the “sensation” as a candidate for being the interface between body and mind. The sensation has been at the core of the body-mind discussion at many times throughout the years. Philosophers has been investigating what this thing is, to see, for instance, the color red. Itches and pains have also been scrutinized.
What the sensation really is, is still an unsolved issue, I believe. As with self consciousness, however, much philosophical work is being made to explain the sensations away. And that, again, is no wonder since the traditional definition of causal closure doesn’t allow non-physical things.

If, on the other hand, if sensations are physical it would be most likely that we would share them with other animals. It would be likely, for instance, that animals with eyes would see and that animals with ears would hear. One reason scientists and philosophers try to explain the sensations away is that no one has been able to come up with an explanation for the difference between reacting on stimulus with and without sensations. Some interest has been put on explaining away the function of the sensation but the very sensation is still unaccounted for.

One opportunity, therefore, is to suggest the sensation being an interface between body and mind. If that would be the case the sensation either would consist of two entangled areas where one area is located in one universe and the other area is located in another universe or it consists of more than one pair of entangled areas. In this view, a sensation would be neither mental nor biological. A sensation would be an entangled entity with a dual location - an interface between body and mind.

In the universe of nothingness for instance, *p* would not exist. The negation of *p not existing*, however, says that neither *not p*, exists. This paradox is resolved if *p* does exist and *p* exists because of an interface between *p* and *not p*; an interface containing *not not p*.

An interface, accordingly, can be seen as a dual existence, an existence that *is* in two universes. So, if we consider the physical not affecting consciousness *directly*, we can consider it affecting consciousness *indirectly*, via an interface. If we, for example, consider our *sensations*, to be an interface between body and consciousness, the sensations would be neither biological, nor mental, but both (as *not not p* would be part of both *nothingness* and a universe of existing things).

Finally, then, if we add the principle of sufficient reason for this “I” there is sufficient reason for “I”. The basic ground for everything (including *nothingness*), however, is already accounted for (including “I”). Therefore, whatever is sufficient reason for “I”, it is groundless.

Contemporary psychiatry is in a state of ethical decay

(Stockholm)

I am sixty years old—and while it might appear that a member of my generation is simply warning about the decline of the youth—I intend to make my case by drawing on a specific case study and a few articles.

I began working as a psychologist at the Brandbergen health center in Haninge, south of Stockholm, Sweden, in 2003. For the first decade, I worked alone, so it became a habit to take on as many students as possible. Now, there are many of us psychologists, and the tradition lives on.

Over the last decade, I have been a patient myself. I have brain cancer and have undergone four surgeries. After the first two, I managed to return to work through a rehabilitation process; I had immersed myself in mindfulness, which helped me rebuild my capacity. The fourth surgery took place while I was on full-time sick leave following the third operation—the slow-growing form of cancer had turned into a rapidly growing one.

Nevertheless, I managed to return and have been working for a year—though without being assigned any patients for mindfulness. Meanwhile, my colleagues have been planning a "stress school." In June, I was informed that, following the summer holidays, I would be expected to invite everyone who had expressed interest in the stress school to join a mindfulness group. I was also tasked with handling half of all new adult patient consultations.

Naturally, I was taken aback; the blunt explanation is that the "subject"—in this case, *my* subjecthood—is not factored in as a parameter.

I suffered a severe collapse immediately after the holidays. However, the difficulties involved in accounting for the "subject" within healthcare run deeper than this single case study can illustrate.

The prevailing mantra is: "To know is to measure." If the subject cannot be measured, it effectively does not exist. Philosophy has grappled with this problem since the time of the ancient Greeks. Nowadays, it is taken for granted that everything is measurable. To overcome this barrier, I have had to break new philosophical ground. To conceptualize the relationship between the biological object and the experiencing subject, I subsequently needed to define a non-chemical biological energy. Finally, in order to incorporate the experiencing subject as a clinical parameter, I had to create a new psychology: macropsychology.

There is now a path to follow for reintegrating the experiencing subject.

To work ethically in relation to the experiencing subject, that subject must be acknowledged. This is now possible.

The ethical decay within psychiatry is a consequence of the spirit of the times. The experiencing subject is not acknowledged because it cannot be measured. Consequently, the ethical approach toward the experiencing subject has imploded. The solution to this inhumane state of affairs is to follow my path. Knowledge may be power, but right now, it is, above all, a responsibility. We can engage ethically with the experiencing subject. Simply follow my path.

Jeito

I say.
Men have calculated and measured.
That is good.
Men have said that not everything must have a cause.
God has forgiven them.
They are but humans.
Everything has a cause and God is the first cause.
No man or woman or human being can understand God.
Men have got everything wrong.
That must be corrected.
No man can serve two masters.
Plato was not there to correct Aristotle.
Women and men and all human beings must follow my path.
The eight by eight generations must be honored.
Leave your master old science.
He is Satan.
He promises eternal life for your earthly body.
He promised eternal life for the pharaohs' earthly bodies.
We are all one.
In love.
I have told Johan this.

Causal Composition

Abstract

This manuscript delves into the philosophical debate surrounding the Special Composition Question (SCQ), focusing on the causal relationships between objects and their constituent parts. By distinguishing between Weak and Strong Causal Composition, the article explores how causal mechanisms underpin the composition of objects. Theories from notable philosophers, including van Inwagen and Leibniz, are evaluated. This study seeks to bridge the gap between common sense perspectives and principled ontological theories by introducing the concepts of Weak and Strong Causal Composition. The analysis reveals how a causal approach can offer insightful resolutions to longstanding debates in mereology and ontology, emphasizing the role of causality in understanding the essence of material composition. The proposed causal perspective encourages further philosophical inquiry into the foundational principles governing the composition of objects.

Introduction

The question of Material Constitution asks for the relation between a thing and what it is made of, e.g., "What is the relation between a clay statue and the lump of clay from which it is made?" (Wasserman, 2002, p. 197). A second question in this vein is what the relationship is between the lump of clay and the molecules it is made of. In a reductionistic manner we can form additional questions concerning relations between molecules and atoms as well as relations between atoms and elementary particles. One aspect of this is if "*Constitution is Identity"* (Noonan, 1993, p. 133). On that account the statue would be a lump of clay. Another aspect is what individuates a thing. We see the thing clearly when we look at the statue and also when we look at the lump of clay but when it comes to molecules and atoms it is not that certain what 'a thing' would be.

What individuates a thing has to do with "the Special Composition Question" (van Inwagen, 1987, p. 23, 1990, 1993a) which asks, roughly, what it takes for some *x*s to compose some *y*. In this paper I will concentrate on the Special Composition Question (SCQ) concerning physical objects. A special focus is on *organisms*, i.e., biological 'things'.

Much work in relation to SCQ has addressed its main feature of 'what it takes' (for some *x*s to compose some *y*). van Inwagen, e.g., stated that "the *x*s compose [some] *y* if and only if" "the activity of the *x*s constitutes a life (or there is only one of the *x*s)[2]." (1990, p. 82). Two other, major, lines of suggestions are 'Universalism' and 'Nihilism' where the former argues that any *x*s compose a *y* and the latter asserts that no two or more *x*s compose a *y*. A fourth approach is that composition is a brute fact (Markosian, 1998a). Of these four conceptions of SCQ only the last one in a reasonably fashion saves what is called 'Ordinary Objects' as "dogs and cats, tables and chairs, trees and their branches, and so forth." (Korman 2014). van Inwagen's proposal saves dogs and trees but all non-organic 'things' will go on his account. It is not fair to say that 'Universalism' does not save ordinary objects but since universalists "typically [will] accept that there are such extraordinary objects as *trout-turkeys*, where a trout-turkey is a single object composed of the undetached front half of a trout and the undetached back half of a turkey" (Korman 2014), and all sorts of other kinds of non-ordinary objects, the ordinary objects, on the universalist view, are saved to a high price.

In addition to Markosian's 'brutal' approach in saving ordinary objects Carmichael (2015) suggests a 'common sense' view that permits "the most obvious objects in our immediate environments (e.g., tables, chairs, organisms, and the like) [to] exist, while the extraordinary universalist objects (e.g., pinky-moons) do not." Carmichael's idea is that either "the xs are lump-like and the xs are bonded", or the activities of the *x*s "constitute an event that imposes sufficient unity on the xs." It seems here that Carmichael draws on van Inwagen's idea about life and SCQ. Indeed, Carmichael exemplifies the second disjunct with: "the event which is your life is constituted of the activities of the simples that make you up", and adds (footnote 10) that "I mean 'life' in the narrow biological sense, which is worked out at some length by van Inwagen (1990: §9)."

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[2] This focus of the 'activity' of the xs in relation to the xs 'composing life' is "noticed by Justin Smith, because 'in this model [of Leibniz], individuality and unity [of the organism] are defined through activity, not primarily through spatiotemporal cohesiveness' (2011, 142)." (Huneman 2014, p. 163)

In sum, there are what van Inwagen calls *extreme* answers – answers that either gives an *unrestricted* view on composition or denies the possibility of composition – and *moderate* answers where we have seen examples from van Inwagen and Carmichael. What it takes for some *x*s to compose some *y* is a question that goes beyond mere mereology into ontology since it could be argued that the answers to SCQ state what (composite) objects there are. Indeed, Potrc (2002, p. 197) states that the

> "Special Composition Question (SCQ) as basic ontological and mereological quest invites two kinds of answers. Either we assume correctness of common sense, or we go for some principled answer that may be incompatible with it. But there are doubts as to the ontological viability of common sense posits. So a principled answer to SCQ seems preferable. The Non Arbitrariness Of Composition (NAOC) delivers a guide here, being a kind of meta-ontological principle that urges you not to posit a multiplicity of independently existing and individually unexplainable facts. NAOC requires generality and systematicity as the basis of ontology."

My aim is to suggest and defend a principled answer in line with Potrc's demands, conscious about risking one or two common sense objects. My suggestion is that it is worthwhile to try a *causal* stance towards the question what it takes for some *x*s to compose some *y*. Causality is also something that has a common sense appeal. van Inwagen, though, when he coined the Special Composition question, raised serious doubts concerning the possibility of a moderate causal answer. On the one hand he concludes that "any plausible Moderate answer to the Special Composition Question will identify the relation expressed by '∃y the xs compose y' with some causal relation." (van Inwagen, 1987, p. 41). On the other hand he thinks that

> If any causal answer is correct, then the vagueness inherent in multigrade causal relations like *being in contact* and *being fused* will infect notions like existence, number, and identity, that, one would have supposed, cannot, because of their pristine logico-mathematical character, admit of the least tincture of vagueness. (p. 44)

van Inwagen states, in effect, that "any [correct] causal answer" implies an unacceptable vagueness. So, if van Inwagen is right both non-extremists and a moderate causal style answer would be in trouble.

Causal Composition

Weak Causal Composition

My causal style SCQ answer has a common sense appeal by suggesting a causal principle underlying composition. It has several features, though, that are incompatible with common sense. A first, perhaps appealing, feature of my suggestion is that composition has to do with underlapping causes. If two things underlap they both belong to a common third. My pencil and my coffee cup underlap the things that are on my desk for example. This causal stance can be used to give a version of the Universalist unrestricted composition view. If we say that some *x*s compose a *y* if and only if their causes underlap, and if all causes go back to a cosmological 'big bang', then any set of arbitrary physical things would compose an object. This view I will label the Thesis of Unrestricted Weak Causal Composition:

Thesis of Unrestricted Weak Causal Composition:

Some xs compose a y iff (if and only if) the xs have underlapping[3] causes.

If all causes of physical things go back to a cosmological 'big bang' then all things always underlap in one way or the other. With the thesis of unrestricted weak causal composition, Universalism, or unrestricted composition for the physical domain, can be explained: any *x*s compose a *y* since their causes underlap. Concerning NAOC, though, we do have a general principle but it seems too permissive as to what wholes it entails. One way of restricting the weak thesis is to demand that *all* parts that underlap compose the whole. In the physical domain that would be the whole universe if all causes go back to the big bang. Without a restriction, again, we cannot delimit the object. The unrestricted weak thesis allows any set of subparts of a given object to compose an object. A moderate SCQ answer, therefore, needs an expansion of the vocabulary. I will go into that later but first formalize the restricted version of the weak thesis.

If we want *all* parts with underlapping causes to be part of the whole we can form the set of the *x*s and deny parts that does not belong to the set to have causes underlapping the causes of the parts of the set. Here I will do that by first stating a set consisting of *all* (physical) parts. From that set I, second, will pick out a set of *x*s that have underlapping causes. The set of *x*s is formed so that it includes all parts that causally underlap. Before we can go on, *nota bene*, it must be settled what kind of parts we are talking about and what kind of causality is being used. Concerning parts I in a most simplistic way will assume that the kind of parts that is focused is parts that are *caused*. Furthermore I will assume that these parts are *discrete*, that they are individuated. Hence, the parts that are discussed can be defined primitively:

Definition of Part*: A Part =* $_{df}$ *A coherent causal difference.*

Since all parts in the physical domain underlap it is not crucial how we conceive of parts in relation to the weak thesis. It will be important in later developments of the thesis, though. In the next section, on parts, I will discuss two potential areas where this primitive notion of part is of interest. Those areas, also, are of special interest concerning the *kind* of causality that is being used here. It must be said upfront, though, that it is not *sure* that the kind of causality that is being used here, has correlation with any *actual* cause. The way to conceive of causality in this context is the straightforward one that there is *one cause* for *one coherent causal difference*, i.e., for one part. This means that on this account the part really is the *effect* in the notion of *cause-effect* and that the causes of the discrete parts also are discrete. This is formulated in the following thesis:

Causal thesis*: A coherent causal difference is discrete and has a discrete cause.*

Given discrete parts and discrete causes we, on a considerable abstract level, can conclude that there is a bijective relation between parts and causes and that both parts and causes are enumerable. The restricted weak thesis of causal composition now can be formulated if we let *U* be the set of all physical parts and let *X* be the set of 'some *x*s'. Also, let X^C be the set defined as the *complement U\X*, consisting of the parts that do not belong to *X*. Then the restricted weak thesis is the

Thesis of Weak Causal Composition:

[3] *Underlapping as defined as: x underlaps y iff there is a z that both x and y are parts of.*

Some xs compose a y iff the xs have underlapping causes and no cause of the elements of X^C underlaps any cause of the elements of X.

If all physical parts go back to a big bang they have a common origin wherefore on this account X^C is empty[4] and the only object there is, is the 'blobject'[5], i.e., the (whole) universe. This was Parmenides' view on "The Strict Monist Interpretation" of Parmenides' writing: "A good many interpreters have taken the poem's first major phase as an argument for strict monism, or the paradoxical view that there exists exactly one thing, and for this lone entity's being totally unchanging and undifferentiated." (Palmer 2012)

Thus, we on the unrestricted and the restricted weak causal composition views can account for two principally important answers to SCQ, the Universalist and the 'blobject' answers. As we will see below the causal stance can account also for the other two popular views 'on the market', as it is put in the following citation:

> Recent discussions of the mereology of physical objects have focused mainly on the question of when several objects compose a further object. According to the most popular view on the market, there is a physical object composed of your brain and Jeremy Bentham's body [Universalism]. According to the second-most popular view on the market, there are no such objects as human brains or human bodies, and there are also no atoms, rocks, tables, or stars, either [Nihilism]. And according to perhaps the third-ranked view, there are human bodies, but still no brains, atoms, rocks, tables, or stars [van Inwagen's proposed answer]. (Markosian, 2014)

In order to account for Nihilism and van Inwagen's proposed answer (VIPA), the causal account can be developed to become stronger.

Strong Causal Composition

To take the next step we can compare underlapping causes with kinship. The weak thesis is like kinship *per se* and since there is a danger that all beings are related the weak thesis is not that informative. A more restricted kinship is 'descendants to *x'*, e.g., descendants to Plato or the present king of Sweden. On this view an 'object' composed of 'some *x*s' could be 'the descendants of the present King of Sweden' or 'the descendants of Plato'. The strictest version in this vein is 'offspring' which confine the 'object' to the children of a given person, e.g., 'the children of Plato'. For underlapping causes this yields a thesis in which the causes of the parts of the object are related in a way so that there are no intermediate causes.

If we have two causes *x* and *y* of two parts A and B, and the causes underlap, then there is a *z* so that *x* is part of *z* and *y* is part of *z*. This is the weak thesis. To restrict it in order to exclude all intermediate causes two causes have to have a stronger connection then mere underlapping. *If* causes are underlapping, to restrict the thesis in the desired way we can begin by *defining a binary predicate* that picks out *pairs* of parts that are related in a way that guarantees that there are no intermediate causes, i.e., a predicate that ties two parts to each other by underlapping causes with no intermediate cases. Such a predicate P, in the 'kinship' version, would imply that if *x* and *y* are P, then if M is the mother[6] of *x*, then M is the mother

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[4] Remember that U is the set of all parts as defined here.

*[5] This is an ontological view defended by Horgan and Potrč (2000, abstract): "The ontological component, which we call 'ontological blobjectivism', makes two fundamental claims: (1) There really is just one concrete particular, viz., the whole universe (the '**blobject**'). (2) The **blobject** has enormous spatiotemporal structural complexity, and enormous local variability -- even though it does not have any genuine parts."*

[6] Or father. The thing here is that it is the same parent.

of *y* and also the other way around; if M is the mother of *y*, then M is the mother of *x*. Thus: Pxy iff (M mother of x iff M mother of y). In our case a sufficient definition states that the one cause underlaps the other if and only if the other cause underlaps the first one:

Definition of a Causally Unifying Binary Predicate C of Parts[7]:

***C**xy =$_{df}$ There is a z such that (the cause of x belongs to z iff the cause of y belongs to z).*[8]

The predicate **C**, thus, picks out causally coherent differences whose causes two by two have a "*minimal* underlapper." [9]. Since **C** is reflexive **C**pp is true for all parts p. Again, we do not know beforehand that any two separate parts comply to **C**. Even so, a strong causal thesis of composition now can be stated that gathers *all* parts that have the same minimal causal underlapper in the defined sense:

Thesis of Strong Causal Composition:

*Some xs compose a y iff for any two differences x_1 and x_2 holds **C**x_1x_2 and for no w of the elements of X^C holds for any of the xs **C**xw (or there is only one of the xs).*[10, 11]

This strong thesis is a moderate answer to SCQ. With the strong thesis it is possible to account for Nihilism and VIPA. In order to account for Nihilism we simply suppose that there are not any non-identical pairs of parts x_1 and x_2 that have a minimal underlapper in the sense of the strong thesis. Then, according to the strong thesis, there are only *y*s composed of exactly one part (there is only one of the *x*s) and hence there are no composite objects. To account for VIPA we can set out suitable conditions for the parts. First, I will suggest that parts of living things are *biological reactions*. Since there is no absolute consensus as to what 'life' really is, I cannot attest the validity of the following individuation thesis.

***Individuation Thesis for Biology**: A part of an Organism =$_{df}$ A Biological reaction*[12]

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[7] *Part = df A coherent causal difference.*

[8] *Cxy =*$_{df}$ *∃z(the cause of x belongs to z ↔ the cause of y belongs to z).*

[9] *Varzi (2014) uses this term in the following context: "A stronger [compositional principle] condition would be to require that any pair of suitably related entities must have a minimal underlapper—something composed exactly of their parts and nothing else" In the present context the last condition is not used.*

[10] *I add the parenthetical disjunct "to secure the reflexivity of parthood" as van Inwagen did and noted in Material Beeings (1990, p 288).*

[11] *The binary predicate **C** can be used to form a kind of mereological sum that encompasses the object defined by the strong thesis. The sum is constructed in two steps. Given a specific part p_0 we can form a unary predicate **C**p_0 that identifies all the parts that are tied to p_0 through the predicate **C**. Definition: The unary predicate **C**$p_0(x)$ holds if and only if (if x then **C**(p_0,x)). This predicate holds for p_0 and all those xs that have their causes related as given by **C**, to p_0. Now the mereological sum of those xs that are **C**p_0, Σx**C**$p_0(x)$ can be formed. This sum is a scheme for all parts p_0, $p_{1,\ldots}$ p_i. It encompasses the object that p_0 is part of.*

[12] *A definition of 'biological reaction' is not suggested here and perhaps better should be made within biology. The suggestion here is not 'what' they are but 'that' they are. Life, on this account, is not made of static things' activities but made of dynamic things.*

An argument in support of the thesis, in the present context where the unifying composition principle is that the parts have underlapping causes, is that biological reactions, supposedly, might be coherent causal differences towards each other. Given any biological reaction there are other both preceding it and succeeding it (except for a first and a last one). A more comprehensive rationale for this individuation thesis is discussed in the next section. Second, to account for VIPA we equal 'life' with a biological organism. The organism is according to the individuation thesis for biology composed of biological reactions. Combining the individuation thesis with the strong thesis we get:

> ***Strong Causal Definition of Life:*** *Some xs compose a life iff the xs are biological reactions and for any two biological reactions* x_1 *and* x_2 *holds* $\mathbf{C}x_1x_2$ *and for no w of the elements of* X^C *holds for any of the xs* $\mathbf{C}xw$ *(or there is only one of the xs).*

So, on the causal views of composition we have accounted for Universalism, Nihilism, VIPA and the 'blobject' view. Before looking into the difficult project of trying to tie the strong thesis to science, which is the topic of the two next sections, I will show the thesis' strength as to handling the vagueness objection that is a threat to all moderate causal style SCQ answers. Since van Inwagen's proposed answer to SCQ is moderate, though perhaps as extreme as the view leading to the 'blobject', he sets out to defend his answer against his own objection concerning the inherent vagueness of causal style moderate answers. He does so by focusing the very vagueness and suggests to "work out an account of vagueness that is compatible with a [/his own] causal answer to the Special Composition Question." (1987, p. 45). In 1990 he presented an account of vagueness that, in his eyes, was compatible with his causal answer to SCQ. In the account he defended his proposed answer to SCQ against The Problem of the Many[13] which is a threat to any moderate SCQ answer, based on vagueness of identity in relation to material constitution. On van Inwagen's account[14]

> what composes me is a fuzzy set of particles, and one and only one fuzzy set of particles is qualified to compose me. A fuzzy set is simply a set that has three or more degrees of membership - as opposed to the two degrees of membership (Yes and No) that figure in the specification of a classical set." (van Inwagen, 1993b, p. 713)

[13] *The Problem of the Many was launched in 1980 by Peter Unger.*

[14] *In 1990 he devoted the last section of his book to the problem with vagueness. The citation here is from his Précis of Material Beings.*

Sider Sorites

van Cleve makes a vagueness objection against any moderate SCQ answer which he calls ‘the Sider sorites’[15]. I will defend the strong thesis against van Cleves objection by blocking it. This block does the work also against van Inwagen’s objection[16]. I cite the whole argument (van Cleve, 2008, p. 328):

P1 If in some cases composition occurs and in other cases it does not, then there are cases in which composition occurs that are connected by a continuous series with cases in which composition does not occur.

P2 There is no sharp cut-off point in any such series. That is, there is no pair of adjacent cases such that composition (definitely) occurs or it (definitely) does not occur.

P3 It is always determinate whether composition occurs. That is, in every case, either composition (definitely) occurs or it (definitely) does not occur.

Conclusion: Either composition always occurs or it never occurs.

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[15] van Cleve states that ”[t]he objection I am raising has been elaborated by Ted Sider (2001: 121-32)”.

[16] Sider’s/van Cleve’s “there are cases in which composition occurs that are connected by a continuous series with cases in which composition does not occur”, in my defence, is compared with van Inwagen’s “the vagueness inherent in multigrade causal relations”.

To block the sorites I focus P1 and leave P2 and P3 as supposedly acceptable. The objection from this sorites to the strong thesis' restricted account of composition is that 'according to the strong thesis; there are cases in which composition occurs that are connected by a continuous series with cases in which composition dos not occur'. But how could that be? The strong thesis claims that some *x*s compose a *y* iff for any two differences x_1 and x_2 holds **C**x_1x_2 and for no *w* of the elements of X^C holds **C**xw (or there is only one of the *x*s). So, we have two cases: either

i) there is only one of the *x*s, or

ii) every combination of pairs of *x*s are related by having the same causal minimal underlapper while nothing but the *x*s have that relation to any of the *x*s.

Now, for the objection to be valid either i) or ii) must make possible that there is a continuous series that leads from it to its opposite. But that is not possible since in the first case the object either is or is not with no intermediates and in the other case the object is a partition (partitions have no intermediates) of all coherently causal differences, i.e., *parts*[17]. Therefore, the Sider sorites is blocked against the strong thesis.

Now with the 'easy' part done I will make a try as to make intelligible the strong thesis.

[17] *Actually, of course, both are partitions with no intermediates.*

Causal Parts

To find the here conceptualized ‘causally coherent differences’ I start with a quick glance at Huneman’s (2014) paper entitled *Kant vs. Leibniz in the Second Antinomy: Organisms Are Not Infinitely Subtle Machines*. My strategy is to put pressure on regression and especially causal regression within the physical domain. The basic question is what we will find at the end of the line: an end or no end, something we could name a ‘part’ or atomless gunk[18]? The notion of a coherent causal difference could do with something ‘part-like’, at least when accounting for basic composites, if there are such. The regression project is also important in another vein: if there are coherent causal differences then there perhaps is some order when we look along the regression line; it is like when we cut a drop of water in halves: can we keep on cutting endlessly or is there something that could stop us; in this case, some line after which the very water disappeared? Or, concerning matter, can we keep on dividing endlessly? Huneman discusses this very question in relation to Kant’s critique of Leibniz’s notion of organisms.

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[18] Atomless gunk is a concept of David Lewis: “Third, on a plaussible story about what non-fundamental entities there are, it will turn out that on Almost-Lewis's view, everything that exists is composed of simples (parts, that themselves have no proper parts). Lewis is also agnostic on this score: he takes it to be at least an epistemic possibility that there is “gunk”: something, every proper part of which itself has a proper part (see for example Lewis 1991).” (Hall 2012)

> Leibniz thought that contrary to the machines made by us …, living creatures are "natural machines" (which means "infinitely organized machines"). …"… A natural machine is still a machine in its tiniest part …"Hence, the difference between machines and organisms is the difference between finite and infinite organization, (Huneman 2014, pp. 157-158)

So, on Leibniz's account organisms are endlessly dividable and yet in "its tiniest part" organized (as organisms). If we put this in the light of physics this could translate to the view that 'if we cut a piece of matter in halves, we can go on cutting it in halves endlessly and still have matter in each half'. Concerning organisms Kant object to Leibniz's view in arguing that "wholes then seem *composed* or *constituted* of parts" (Huneman 2014, p.171) and that " "[c]onstitutive parts" means that the parts are determined; hence, the identities of the parts and their boundaries are somehow fixed, and therefore the decomposition is no longer possible." (Huneman 2014, pp. 171-172). "That is why for Kant division goes with "decomposition": a division picks out parts, thereby dismantling the composites". (Huneman 2014, pp. 171). "It follows that the body is thereby infinitely dividable, but not constituted of an infinite number of parts." (Huneman 2014, p. 171). Huneman expresses the core of what I am driving at here and I let him use his own words:

> This common ground could now be expressed by saying that both the Thesis and the Antithesis conceive of divisibility as being identical with composition; they just differ on whether composition stops at simple parts or not. In effect, in the Thesis, the entity – whose matter is supposed to be prior to space – is a composite, and the division naturally divides it into the elements that compose it; hence, division and composition are the same. And in the Antithesis, the result of division is precisely those spatial parts that, in turn, constitute the composite which is supposed to be essentially in space. Saying that division occurs through regress (which is the critique's position) – hence that constitutive parts are not given – means that division and composition are different. (Huneman 2014, p. 174)

One strand here is that matter either is dividable infinitely or not. In the latter case matter has 'simple parts' that cannot be divided further. This strand concerns fundamental physics and the basic units of physical objects. Another strand is that division and decomposition are different. On that strand there are wholes 'out there' to be accounted for. One kind of wholes, on Huneman's account, the

> organized beings[,] …are subject to two kinds of divisions: (a) as organized beings, they undergo decomposition into organized parts, which in the end should stop with inorganic parts …; (b) as appearances in space … reason prescribes the rule of always continuing the regress from whole to parts in regards to extended matter (Huneman 2014, p. 180-181)

In my attempt to tie the strong thesis to science I will follow both leads, starting with biology.

Biological Simples

If the decomposition of biological organisms "in the end should stop with inorganic parts" we might have a demarcation line between organic and inorganic parts concerning the organism. Then it could be argued that it is the organic parts that compose the organism. But how are we to accomplish the very decomposition? Using the knife will not ascertain that what we carve out are biological parts. Kant uses reason to be assured that there is some kind of demarcation line:

> In contemporary biology, we have an example of … decomposition of an animal into organs, tissues, cells, or of the chromosomes into genes, nucleic acids, nucleotides, etc …; the Kantian argument says that we know empirically that the unorganized parts are the nucleotides, but we know a priori that there will be unorganized parts. (Huneman 2014, p. 180)

A third option is science where we combine observation with theory. When we operate from a causal perspective the question remains if causal decomposition of the organism 'stops with inorganic parts'. On that account we conceive of things being caused and some of them are biological and some are not biological. Now, if the strong causal thesis of life is valid, an inorganic causally coherent part of something constituting an organism is not a biological reaction whereas an organic causally coherent part is a biological reaction. On that account the biological reaction might have a mereological structure so that more than one reaction composes a composite reaction[19] whereas there also would be *atoms* of the biological parts consisting of non-composite biological reactions – *simples* of biology.

Markosian defines *simple* out of the concept of *proper parts*. On one intuition of the relation between parts and wholes every part is part of itself (reflexivity). If we have something made of more than one part we could define 'x is a proper part of *y*' as "x is a part of y but y is not a part of x." (Markosian, 1998b, p. 214) With this notion we can define a mereological simple *x* as "x has no proper parts." (ibid.) As Markosian, I think, rightfully argues, there is a strong link between SCQ and the notion of simples:

> The notion of a mereological simple (hereafter I will just say 'simple') is crucial to discussions of composition because simples are the basic building blocks that, when combined in various ways, make up all other objects. Thus it is natural to think that what we say about the nature of simples will have considerable bearing on what we say in response to the Special Composition Question. For this reason it is natural to ask the question, Which things are simples? That is, Under what circumstances is it true of some object that it has no proper parts? (Markosian, 1998b, p. 214)

On a common sense view "the event which is your life is constituted of the activities of the simples that make you up." (Carmichael, (2015). The crucial thing here, in the present context, is if the 'simples' of life are biological or not biological. On my suggestion it is possible that the simples, as reactions, are biological.

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[19] *As in the case if lifting my arm could be a biological reaction. Then the very lifting would be composed of an amount of subparts.*

Physical Simples

The second strand is that matter either is dividable infinitely or not and that in the latter case matter has ‘simple parts’ that cannot be divided further. So we shift focus from organisms to quantum physics. Here I am going to discuss a rather new theoretical development which means that the outcome depends on that particular theoretical perspective and not on ‘quantum physics’ as such. The theory in question makes possible a straightforward notion of physical simples.

Markosian proposes that “[physical] simples are maximally continuous objects.” (1998b, p. 221) I will not penetrate all the parts of the definition he gives of that notion but concentrate on the first part (ibid.): “x is a maximally continuous object = $_{df}$ x is a spatially continuous object and there is no continuous region of space, R, such that (i) the region occupied by x is a proper subset of R”. If simples are ‘maximally continuous objects’ the cited part of the definition makes possible that simples are simples – as defined by having no proper parts – in virtue of their dimensional properties, i.e., the region (of space) they occupy has no regional subparts. On this view simples are simples-as-having-no-proper-parts since they occupy the smallest possible space. [20]

Loop quantum gravity is a line of theory trying to integrate “quantum physics and general relativity theory” and “string theory is still the best candidate, with ‘loop quantum gravity’ as its strongest rival” (Kuhlmann, 2014). Loop quantum gravity fits perfectly with the view of *simples* where simples are ‘simples-as-having-no-proper-parts since they occupy the smallest possible space’. “Loop quantum gravity predicts that space comes in discrete lumps, the smallest of which is about a cubic Planck length, or 10^{-99} cubic centimeter. Time proceeds in discrete ticks of about a Planck time, or 10^{-43} second.” (Smolin, 2014, p. 96) On this account we have a candidate for a simple to build upon concerning SCQ tied to the physical domain: the simple is the volume of a cubic Planck length. On the loop quantum gravity account “space is an emergent description of relations between particles” (Smolin, 2008, p. 7) [21] so a volume of a cubic Planck length is not just ‘space’ but is the smallest physical particle on the account.

Loop quantum gravity is a ‘background independent’ theory, a feature I will explain next. The basic question concerns the relation between space and matter and is about if space is absolute or relational which is to ask if the relation between space and matter is static or dynamic. Smolin (2008) describes a background to the question in a section called “A brief history of relational time” (pp. 6-9). The story starts at the time when Newton published his *Principia Mathematica*. While “Leibniz espoused *relational* notions of space and time, according to which space and time are to be defined only in terms of relationships among real objects or events” Newton “espouse[d] an *absolute* notion of space and time, according to which the geometry of space and time provided a fixed, immutable and eternal background, with respect to which particles moved.” “Leibniz’s argument for relationalism was based on two principles” of his, [t]he *principle of sufficient reason*” and “the identity of the indiscernible”. The former “states that it must be possible to give a rational justification for every choice made in the description of nature” and “[a] theory that begins with the choice of a background geometry, among many equally consistent choices, violates this principle.” Thus one can ask “why is the universe where it is, rather than ten feet to the left, or rotated 30 degrees? Or, why did the universe not start five minutes later?” “As there can be no rational answer why the universe is where it is, and not ten feet to the left, the principle of sufficient reason says this question should not arise in the right theory.” The second principle of Leibniz, the identity of the indiscernible, “states that any two entities which share the same properties are to be identified.” So if we have two alternatives, that the universe is where it is or “10 feel to the left” and “they cannot be distinguished” “[t]he principle says that they must then be identified.” Since the absolute view on space cannot account for this “[o]ne response is to demand a better theory in which there is no background spacetime.”

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[20] This is not to say that Markosian has this view in mind.

[21] Smolin (2008) “is partly based on the text of a talk given to a meeting of the British Association for the Philosophy of Science, in July 2004, under the title ‘The relational idea in physics and cosmology.’” (p. 1)

Given this vignette to a *raison d'être* for the loop quantum gravity[22] I will now build upon it in order to make intelligible the notion of a coherent causal difference. Thus, if loop quantum gravity is right the smallest possible lump of a physical 'thing's has the size of the Planck cube. Also, on the loop account, the Planck cube sized 'thing' is not 'enduring' in time. Perhaps it is 'perduring'[23] but that could be too soon to say since "[t]hough quantum gravity has been the subject of investigation by physicists for over eighty years, philosophers have only just begun to investigate its philosophical implications." (Weinstein and Rickles, 2014). Since on the loop account 'time proceeds in discrete ticks of about a Planck time', the quantum lump *is not continuous* from one tick to the other. Therefore, on a 'causal composition loop' account, it is possible to say that the-Planck-cube-sized-quantum-lump-in-a-discrete-Planck-time-tick-*one* is different from the-Planck-cube-sized-quantum-lump-in-a-discrete-Planck-time-tick-*two*. They, in short, could be seen as two distinct (as in discrete) parts. Now, to take the step to the notion of causally coherent differences, we just replace 'parts' for 'causally coherent differences' and get that the two are causally coherent differences. By this we have defined a notion of physical simples.

Definition of a physical simple: *A physical simple* $=_{df}$ *A Planck cube sized quantum lump in a discrete Planck time tick.*

Now, to visualize the scene, imagine a chessboard filled with physical simples (see figure 1). The rows goes from *1* to *8* and the columns goes from *a* to *h*. Next we let the columns symbolize differences in time and the rows symbolize differences in the three dimensions of space. For instance, column *a* has eight slots representing eight different times[24] (from *1* to *8*) and row *1* has eight slots representing eight different places[25] (from *a* to *h*). *Now we have to make a choice*: either we say that exactly *one* slot marks a simple or we say that *more than one* slot marks a simple. The most obvious choice – and the one stated in the definition above – would be to say that *one* slot marks a simple and not that more than one slot marks a simple. This choice comes with a price: we have to account for the union of the simples concerning time.

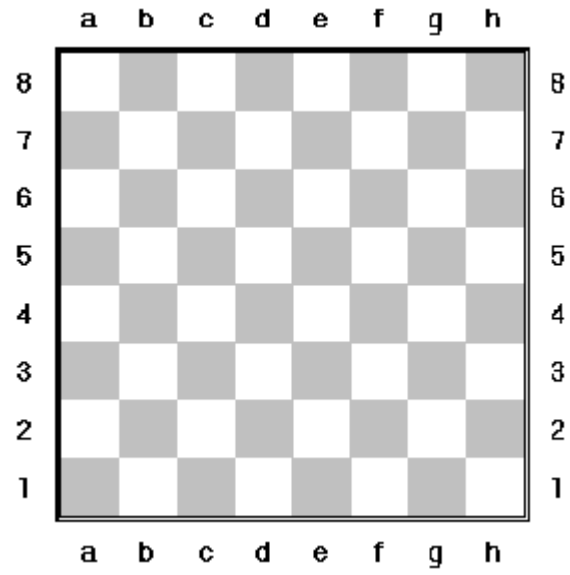

Figure 1

On this account we not only must ask *Why this lump here and now?,* but must also ask *Why this lump in these units of time?* To put it another way: the SCQ has to do with horizontal unification (on the chessboard) as well as *vertical* unification.

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[22] *See Weinstein and Rickles (2014) for a review.*

[23] *See Hawley (2010) for a review of endurance and perdurance in relation to the notion of 'temporal parts'.*

[24] *Of Planck time length.*

[25] *Of cubic Planck length size.*

The individuation question concerning parts, therefore, should be linked to this fundamental relation between simple and simple along the column of the chessboard. I do not think that is it viable to question the relation and I think we can use it as a template as to make intelligible other part-whole relations. The SCQ has to do with *why* simples[26] pile up and the individuation-question should ask *which simples* that do pile up. Thus, in the starting position we have a simple, big as a cube with each side with the Planck length. In a discrete situation we have a simple with the same size. If we go back to the chessboard we say that simples along a row are simples separated in space and that simples along a column are simples separated in time. The simples separated in space, we could argue, are *different* simples whereas the simples separated in time are … what? My suggestion is that simples separated in time are *different parts* of the *same object*. On this totally fundamental level of physics, according to this view, objects are evolving in time, composed of separate parts; the simples of the quantum level, see fig. 2.

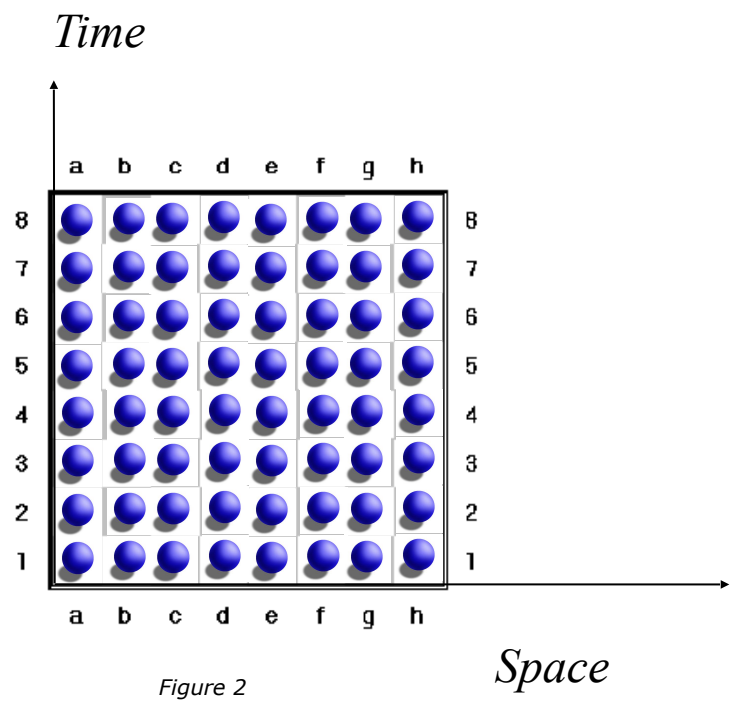

Figure 2

On this account, therefore, quantum objects consist of quantum simples evolving in time. Each simple is a coherent causal difference and, thus, each simple has a cause. On the chessboard, e.g., there are eight causes to be accounted for by physics, for each column. [27] In the next section we go on to look at the unification of simples evolving in time.

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[26] *And other parts.*

[27] *In loop quantum gravity networks of allowed quantum states (here named 'simples) are called 'spin networks'. On our chessboard, on this account, a spin network could consist of simples on a row. Smolin (2014, p. 96) describes how "[q]uantum spacetime corresponds to … diagrams called spin foams, in which spin networks evolve over time."*

Causal Wholes

On the loop quantum gravity view, as conceptualized here, simples evolve in time in discrete steps. Thus, at each moment (defined as the Planck time), there is a simple. On my view we have to account for this evolving in time. Actually there are two things that are important to stress regarding the evolving of quantum simples. On the one hand the first simple of a quantum object has a cause – at least that would be a way of holding on to Leibniz's *principle of sufficient reason*. *What* that cause could be is a question for physics. If, though, a quantum simple emerge, and if we hold on to the principle of sufficient reason, there is sufficient reason for that emergence. To be perfectly clear here as to what I am after; it could be unsettled whether or not an emerged quantum simple has sufficient reason. If, though, the simple *has* sufficient reason, I would like to *define* it as a cause.

> *Definition of Cause of an Emerged Quantum Simple: If an emerged quantum simple has sufficient reason, that sufficient reason is (here defined as) its cause.*

On the other hand, if an emerged quantum simple evolves in time – and if we thus have *parts* of a hypothetical quantum *object* made up of *simples* – we on my view have to account for this. What we have are simples evolving in time (see figure 2) starting with a first one (the emerged quantum simple). We can exemplify this with an emerged quantum sized part. The quantum object composed of the evolving simples is the simples as existing in discrete time units of the Planck time. *Why* is this evolving? For one thing, going back to the definition of *part*, the evolving simples-as-parts are 'coherent causal differences'. If we cut out a piece of the evolving quantum object, say ten simples, those ten simples are discrete parts with ten unique causes (on the present vision). In the same way a partition of only two simples has two unique causes. On this fundamental level of physics it is, I hope, possible to envision a scene with one first simple of a quantum object. 'First', naturally, is a complex notion. I do not here necessarily mean that it is a first quantum simple as in the very first quantum simple. Instead, we can focus an emission of a photon from an electron during its transition from one orbit to another as it moves around a hydrogen nucleus (see figure 3).

A photon evolving in time.

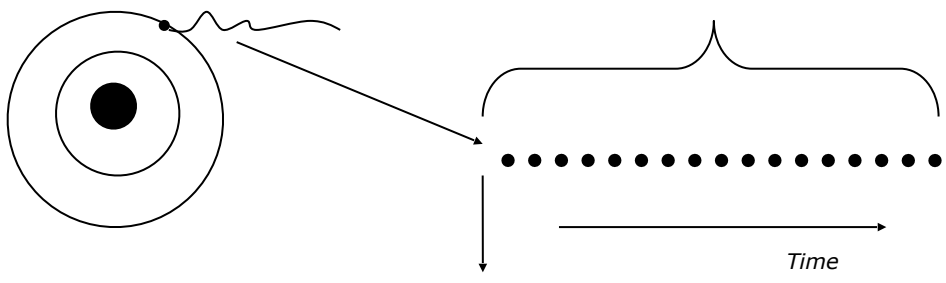

Figure 3

If we assume that the photon is a quantum object in the sense discussed it is composed of a set of simples evolving in time (se figure 3). The first simple of the set (of which only a few simples are pictured in figure 3), as I see it, if it is caused, has its cause from somewhere else than from the very set of simples. On this account simple no: 1 of the photon has a cause that is not a part of the set of simples composing the photon. The

phrasing ‘has a cause’ does not, of course, necessitate that there only *is* one cause of simple no: 1. On the causal composition account simple no: 1 has only one cause but that is not validated by the fact, as I see it, that its ‘cause’ does not belong to the set of simples composing the photon in question. If, on the other hand, the ‘cause’ of simple no: 1 was the only cause of simple no: 1, and if that cause did not cause *anything else* than simple no: 1, the conditions for the type of causality that are part of the notion of the strong thesis of causal composition, would be fulfilled. The thing to be stressed here, however, is that the cause of simple no: 1 is not part of the set of simples composing the photon in question and therefore not part of the very simple no: 1. This leads to the question of where that cause, if it exists, is. Of obvious reasons that question is not to be looked upon in this philosophical context. What should be looked at, though, is the eventuality that the analysis is right – that the cause in question is somewhere else than in the very part in question. This is of utmost importance for the enterprise here to tie loop quantum gravity to the strong thesis of causal composition. This since it opens up for the subsequent question where the cause is, if there is one, for the next simple in time following no: 1. It is easy indeed to imagine that that which exists, exists in the next quantum time unit of Planck time length just because it does exist; as if existence *per se* guarantied existence in the next moment. [28] I challenge this by stating that there is a cause for the existence of *another* simple given that there is one in a particular quantum time unit. This amount to the following argument:

P1 An evolving quantum object S is composed of a set of simples $\{s_1, s_2, \ldots, s_i\}$.

P2 Existence *per se* does not guarantee existence in the next tick of time: $\neg(s_n \rightarrow \ddot{y} s_{n+1})$

P3 s_1 is not caused by itself, nor by $S = \{s_1, s_2, \ldots, s_i\}$ or by any subset of S. Therefore the cause of s_1 is outside S.

P4 The cause of s_2 is either within S or not. As the second simple its cause is either in itself, in s_1 or outside S.

P5 The causes of S have a minimal underlapper.

Now, if the cause of s_2 is within s_1, s_1 and s_2 do not have the same minimal underlapper which they do have (P5), so s_2 is not within s_1. Also, the cause of s_2 is neither s_1 in itself (P2). Finally, due to P5, the cause of s_2 is not within itself. Therefore, the cause of s_2 is outside S.

Recursion can be used to ascertain that the rest of the object has its causes residing outside itself:

Base case: s_1 is not caused by any simple of the set $\{s_1, s_2, \ldots, s_i\}$.

Recursive case: If s_n is not caused by the set $\{s_1, s_2, \ldots, s_i\}$, then s_{n+1} is not caused by $\{s_1, s_2, \ldots, s_i\}$.

If we refer now the causes of the emitted photon to a common source we can assume they underlap it and that the conditions for the strong thesis are fulfilled. We by that have tied one quantum object to the strong thesis. On this vision, then, we have a whole series of simples, each one caused, that have its total group of causes *outside* of itself. If we compare this with the situation for the organism we, on one view, get a slightly different picture. If we were to suggest that the causes of the biological reactions were tied to the sphere of genetics as in the genes of the organism, we again would have a situation where the first simple, the first biological reaction of an organism might have its cause situated *outside* itself. If, on the other hand, the subsequent simples’ causes were situated *within* the organism (in that case as some biological reactions themselves, *nota bene*), one would be hard pressed to explain all the simples as having a minimal causal underlapper. [29] To solve this one on the one hand could add to the

[28] *This touches upon the notion of ‘law’. That existence per se yields existence in the next moment might be a law. If so, I argue that such law should be accounted for on causal grounds.*

[29] *This paragraph is inspired by (Huneman, 2014, p. 166-167)*

strong life definition a clause that somehow permitted the first simple to be part of the organism. On the other hand, perhaps more congenial, we could exclude that simple, part on the grounds that it does not comply to the strong thesis, part on the grounds that just one biological reaction is just one biological reaction. If we took the other turn we also *de facto* would have two simples in a row as the smallest possible organism (the one excluded and the one permitted).

Biological Wholes

Given that biological reactions are the parts of the organism we can ask for the first simple of such (biological simples as conceived above).

Conclusion

The two causal composition theses suggested in this paper can account for the major answers that have been suggested in the literature to van Inwagen's Special Composition Question. The strong causal thesis has also been proven to block The Problem of the Many and vagueness objections to causal style moderate answers to the Special Composition Question. Some support has been given as to tie the strong thesis to science.

"as soon as something is assumed as a *quantum discretum*, the multiplicity of units in it is determined; hence it is always equal to a number"

(Kant, KrV, A 527/B 555.)

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I say.

God enjoys Euler’s formula.

On Hilbert’s Sixth Problem —A Tentative Structure for a Solution —Toward the Integration of Mathematics and Physics

Abstract
The axiomatisation of physics has proved very hard to accomplish. Here an attempt is made to look at the problem from a general perspective. Two basic questions are if mathematical and physical objects a) are ontologically separate and b) if a causal relation between

the two kinds of objects can be explained. In order to answer these questions the concepts of cause and object are defined within an axiomatic structure. Furthermore, Lambda is defined as the set of causes to all interdependent objects. Thus $\text{Lambda}_{\text{physics}}$ is the set of causes for the physical universe whereas $\text{Lambda}_{\text{mathematics}}$ is the set of causes for the universe of mathematics. An explanation is made of the relation between two objects that are separated ontologically. The existence of such relation has some support by Gödel. Finally some axioms of existence are given. These postulate the existence of at least two ontologically separate sets of objects. The theory thus supports the ideas that mathematical and physical objects are separated ontologically and that mathematical and physical objects relate to each other. The theory postulates that mathematics sets the necessities and possiblities of physics. In conclusion Hilbert's sixth problem, to be solved, is dependent upon a general theory that axiomatize not only physics but all of science.

Introduction

The relation between mathematics and physics is evident but unexplained. As a psychologist, the analogous relation between body and mind has troubled the author. In the latter case, one issue is if the two kinds of existence really are different. Thinking of the former case it should be obvious that there at least are two kinds of existence. The present text is the result of an attempt to find a causal relation between separate sets of existence.

List of symbols

Symbol	Interpretation
¬	”not”
∧	”and”
∨	”or”
⇒	”implicates logically”
∈	”belongs to”

N	the natural numbers {0, 1, 2, ….}

UNDEFINED TERMS[30]

1. ρ
2. σ
3. Difference
4. Dimension
5. Relation
6. Element
7. Cause
8. Point
9. Belongs to
10. Existence

ρ (”rho”) refers to ”that, which is caused” and σ (”sigma”) refers to ”the condition for that, which is caused”.

[30] In short the basic idea in this work is that everything has a cause. Therefore what eventually can be found elaborating the premises of the theory is not that everything has cause, but what can be *derived* from that postulate. I have chosen the ten primitive terms to have something to work with. It could be the case that one or two are superfluous and most certainly some could be substituted by another. This paper only shows one side of the story. All the same, these ten are good enough to shed some light on what can come out of the thought that everything has a cause.

Initial definitions

Definition of a set: a set = df A specific existence of elements defined by occurrence within brackets ({})

Definition of a field of dimensions: a field of dimensions = df A set of dimensions

Definition of a complex of dimensions: a complex of dimensions = df A set of dimensions

Definition of D: D = df A specific and limited set of dimensions

Definition of π*:* π *= df The cause of* ρ *on* σ

From the definition of π (pi) a number of implications can be derived (see appendix). Three important ones are:

Theorem 1: π *implicates both* ρ *and* σ *while the two latter implicates the former*

Theorem 2: Two not identical ρ *implicates two* π *while two not identical* π *implicates two* ρ.

Theorem 3: A specific π *implicates a specific pair* ρ *and* σ.

With the last theorem, it is sufficient to refer to a specific π in order to exclude all ρ but one. Each specific π therefore determines a unique set θ (”theta”) where θ consists of the elements π, ρ and σ:

Definition of the set θ*:* θ *= df*
1. A specific π *that causes a specific* ρ *on a specific* σ*,*
2. the specific ρ *that is caused by the specific* π *in 1. and*
3. the specific σ *mentioned in 1.*

*Definition of {*σ, ρ, π*}: {*σ, ρ, π*} = df* θ

Definition of D_{km}*:* D_{km} *= df A specific and limited field of dimensions;* $\{d_k, d_{k+1}, ..., d_m\}$*, in which d is a separate dimension and* D_{km} *contains m-k+1 dimensions.*

Definition of form: form = df A specific set of relations

Definition of Ξ *(”big xi”) = df The form of* θ

Definition of elements of relation: elements of relation = df Parts of a structure of relations necessary to define a form.

Definition of Π *(”big pi”),* P *(”big rho”) and* Σ *(”big sigma”):* Π*,* P *and* Σ *= df The elements of relation of* Ξ*; where* Π *represents the relations of* π*,* P *the relations of* ρ *and* Σ *the relations of* σ

With these definitions made now follows determinations in form of axioms.

Axioms

Axiom 1: ρ *is a difference*

Axiom 2: σ *is a difference*

Axiom 3: ρ *belongs to* D_{km}*, a specific and limited field of dimensions*

Axiom 4: In all points X belonging to an arbitrary D Ξ *i*

The object Ω

Definition of Ω *("omega"):* Ω = *df*
1. $\{\rho_1, \rho_2, ..., \rho_i\}$,
2. in which each and every ρ_x $(1 \leq x \leq i)$ *constitutes a difference towards* Ω $= \{\rho_1, \rho_2, ..., \rho_{x-1}\}$, *and where*

3. ρ_{x+1} *constitutes a difference towards* $\Omega = \{ \rho_1, \rho_2, ..., \rho_{x-1}, \rho_x \}$.[31,]

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[31] This definition is of what we see around us. A concept that could be shared by different sciences however, has to be very wide. At the same time, it has to be possible to find one. The definition of object is an attempt to find such a concept. For it to be valid for a specific theory, it has to be possible to see its particular objects as Ω. At the same time notions of object has to be altered, as an abstract concept is likely to differ a bit from the every-day concept.
What might come to mind is the mathematical object *line*. The line is composed of all its points. In a way, a line is equal to the set of all its points. Again, two separate points at some distance define a line. There is no stopping as soon as there are two points, the line swallows the points one by one. From the point of view of the particular point, one might say that it too should be an object Ω if the definition was valid. On the contrary, though, the definition shows or implicates that the line is an object whereas the point is not. To be an object there has to be an existence over differences.

Noteworthy also is that Ω defines an object that is rather identical over its differences. It is not by itself a tool to penetrate what remains after something has burned down to the ground, regardless of how many differences one might observe in comparison with the non-burning object.

Another object that perhaps falls in line is the biological organism. Although an organism might look the same over a period of time it constantly changes. Determined by the genes cellular and other reactions are taking place all the time. Yet the organism remains the same organism. In fact, it ceases to be an organism shortly after the genetically governed reactions has stopped forever. Then other reactions take over.

In the light of this theory, there are different kinds of physical objects. Even so, physical objects are very hard to see as objects Ω. In association to the mathematical line, though, one elementary object of physics might at least be possible to se as an object Ω. The photon, with its light-speed, by the equations of Einstein can be said to exist outside time. It emerges somewhere and proceeds in a direction. If the photon were an object Ω, then it would include all its appearances along its route. The D_{km} of the photon of course is a difficult question but it does not include the dimension of time.

As for matter, it exists in time. For one thing that shows that matter and light are separated dimensionally, (please not forget that the author is a layman in all disciplines but psychology. Statements like the last are just suggestions how it could be if the author's rudimentary ideas of a subject are at all close to facts). If so, the present theory functions as a context to that fact. Furthermore, matter evolves in dimensions of space and time whereas light does not evolve in the dimension of time we know of. (The last sentence would be a statement in the language of this theory.) Traditionally one might express it as matter moves in time (and space). In this theory, it cannot move; there is just an endless line of differences. Anyway, matter could be viewed as an object Ω. Different expressions of a particular amount of matter in time and space are in that way to be looked upon as different differences ρ.

The discussion yields two results: 1. The reduction of an object stops at the single ρ. For one thing the H_2O molecule is no H_2O molecule if the atoms are separated from one another. Supposing that the H_2O molecule was an object Ω, there would be no more ρ when the molecule was split up, meaning that the object of investigation was not to be found in the location of the investigation. Secondly, if the object evolves in its (some) dimensions, it does so ρ by ρ. Therefore time for the molecule is a discrete dimension. Since all objects has the same basic structure (Ω), all dimensions, following this line of thought, are discrete (regarding this passage, please refer to the above made statement on the author being a layman). .

2. Because the definition is general, as was mentioned in the last paragraph knowledge of the particular can yield knowledge of the general.

32

Clarification: The three points above refer to the same Ω. In this way Ω is to be understood as a whole. The points 2. and 3. are in that respect to be looked upon as parts of Ω.

The next theorem follows directly from the definition above:

> *Theorem 4: Accumulated* ρ *constitutes* Ω *in relation to subsequent* ρ. *Thus both* Ω *and* ρ *belongs to the set of all* ρ

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32 Another feature of the object Ω is that it is not possible to observe it. What can be observed with our senses is an amount of differences. With our capacity to remember there is a possibility though that in the experimental situation all differences, that is the object, can be observed, but never "now". To be remembered though is that the evolving of an object still is unknown of.

π*:s relation to D*

θ implicates an unique cause π to each and every ρ. For a specific and limited field of dimensions D_{km} therefore a precise set of causes λ (”lambda”) is tied to included ρ. This specific set causes the total set of ρ in D_{km}. Each and every ρ in D_{km} therefore can be explained with the set λ. Why ρ_x for instance is answered with π_x.

> *Definition of law* λ*:* $\lambda = df \{\pi_0, \pi_1, ..., \pi_q\}$*, in which each and every* π_x *causes a* ρ_{x+1} *belonging to the set* $\{\rho_1, \rho_2, ..., \rho_q, \rho_{q+1}\}$ *which constitutes the total amount* ρ *in a specific and limited field of dimensions.*

From the definition above follows these two theorems:

Theorem 5: λ_{km} causes all ρ *in D_{km}.*[33]

Theorem 6: Every ρ *caused by a certain law λ_x exists in a limited and specific complex of dimensions D_x.*

[33] λ symbolises the total set of causes in a specific D_{km}, a complex of dimensions that are required by a specific object. Say that the earth belongs to some dimensions. Then there is a λ for those dimensions. Another example is our genes. If it is true that biological organisms are at the mercy of DNA, every biological reaction in the end seeks its cause to the chromosomes. Obviously then the organism has to react in the manner determined by the genes, given a specific set of conditions.

The total amount of biological causes could be ascribed a symbol, referring to the law λ governing the total set of organismic reactions. Under these premises biology concern that λ. With association to DNA the symbol for this particular law could be Δ.

Inter-relations of laws λ

Definition of D_n: $D_n = df$ *The field of dimensions* $\{d_1, d_2, ..., d_f, ..., d_g, ..., d_{n-1}, d_n\}, 1 \leq f \leq g \leq n$ *that contains;*

1. all ρ_x *belonging to* D_{fg},

2. all ρ_y *that can form* Ω *for* ρ_x *and*

3. all ρ_z *that* ρ_x *can constitute* Ω *for:*[34, 35]

Definition of Λ *of* D_n*:* $\Lambda = df \{\lambda_1, \lambda_2, ..., \lambda_P\}$*, where p is the total amount of laws applying in* D_n *and where* $\{\lambda_1, \lambda_2, ..., \lambda_P\}$ *causes all* ρ *belonging to* D_n*.*[36]

Combinatorics gives that the maximum amount of laws λ in Λ is:

Max amount of laws in $D_n = \Sigma$ *from k=0 to n for* $n! /[k!(n-k)!]$[37]

Another definition concludes this section:

Definition of initiating difference: initiating difference = df σ

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[34] A spatial picture of the definition of D_n would be to define the three-dimensional room as the dimensions that contain all points that can be joined with tight cords.

[35] D_n includes D_{km} of all sorts. D_n is the complex of dimensions that contains all objects that are connected. Implicit in the definition is the thought that object in one D_{km} can form a difference against object in a different D_{km}. This simply means that for instance energy is associated to mass. At a certain point a difference of a photon is preceding a difference of mass. How this is, is no question here, only that it is possible.

In psychoanalysis, imagine an early hate towards the mother. This feeling will make its difference in the mind. Again, picture an early love towards mother. It too will make its difference in the mind. Now suppose the infant reaches a fusion of the two opposite feelings. It now has a feeling towards the mother that makes differences that could be said to express a more mature psyche. Even though the last feeling is separate from the two former (different kinds of Ω), it is supposed in the definition of D_n that the more mature feeling is a difference towards the others.

[36] Λ is the total amount of causes in a universe of objects that are inter-connected. That a butterfly in China can cause a storm in Kansas depends on the inter-connection of objects. If Λ_3 represents the causes of the physical world, the natural sciences concern Λ_3. Supposing that the cause of "2+2=4" does not belong to Λ_3, there are more then one Λ.

[37] Since it can be assumed that different D_{km} concern different Ω, this sum might also give the maximum of different kinds of objects in D_n.

Definition of "λ defined in a point X_0"

With Λ and its part-laws λ each and every difference related to Ω (ρ) has a cause π belonging to Λ. Assume a point X_0 belonging to D_{km} belonging to D_n. What "λ_{km} is defined in X_0" means is defined below.

Definition of λ *defined:* λ_{km} *is defined in a point* X_0 *belonging to* D_{km} = *df* θ *is true in* X_0.

The definition above implicates that if λ_{km} is defined in a point X_0 the following applies: if the conditions according to Implications of θ (see Appendix) are fulfilled, the implication in question is valid in X_0. It also implicates that if λ_{km} is defined in X_0, Λ too is defined in X_0 (π in X_0 belongs to Λ). It is also true that if Λ is defined in X_0, λ_{km} is defined in X_0 because X_0 belongs to D_{km}.

Theorem 7: If λ_{km} *is defined in* X_0, Λ *is defined in* X_0

Theorem 8: If Λ *is defined in* X_0, λ_{km} *is defined in* X_0

A special case is at hand when for a point X_0 holds {¬σ, ¬ρ, ¬π}. Is in this case λ_{km} defined in X_0? The answer is easily accessible when λ_{km} do not exist in X_0 because ¬π is true and π is λ:s representative in X_0. λ_{km} is neither defined nor not defined in X_0 wherefore the theorem next applies:

Theorem 9: If for a point X_0 *holds {¬*σ*, ¬*ρ*, ¬*π*}* λ_{km} *for the point is neither defined nor not defined*

In conclusion it is stated that within a law-bound domain every difference has a cause. It is also stated that each difference has σ (a fulfilled condition). Before going further some new concepts are introduced:

Definition of effect: effect = df ρ

Definition of a point of effect: a point of effect = df A point X in which ρ *is true*

From the two definitions above follows:

Theorem 10: In a point of effect θ *is true*

The next section concerns conditions where θ is not true.

BEYOND θ

Either the state of things is such that it is not possible that θ does not apply in each point where π apply, or it is not impossible. If the latter is the case something not of Λ bound can emerge in a point. Arbitrariness though, in that case, is not imminent, nor chance, due to axiom 4: "*In all points X belonging to an arbitrary D* Ξ *is true"* (Ξ = *df The form of* θ). This implies that if a law for a point is defined in that point Ξ apply and if the law is not defined Ξ apply:

Theorem 11: Ξ *is true in all points* X_0 *whether or not* $\lambda(X_0)$ *is defined.*

Ξ,"the form of θ", does not include chance because the form that is alluded implicates a cause to each difference. Therefore the following is valid:

Theorem 12: It is not true for any point that effect can occur by chance.

Derivation and definition of ρ' and $\sim\rho$

Λ not defined in X_0

Assume Λ is not defined in a point X_0. This implicates according to the definition of "λ defined" that θ is not true in X_0. For X_0 then the following is true:

(1) ¬θ

θ has three elements for which thus apply "not":
(2) ¬ {σ, ρ, π}
(2) implicates that at least one element of θ is negated:

> *Theorem 13:* ¬θ ⇒ *i) {¬σ, ρ, π}∨ ii) {σ, ¬ρ, π}∨ iii) {σ, ρ, ¬π}∨ iv) {¬σ, ¬ρ, π} ∨ v) {¬σ, ρ, ¬π}∨ vi) {σ, ¬ρ, ¬π} ∨ vii) {¬σ, ¬ρ, ¬π}*

According to theorem 9 Λ is neither defined nor not defined in a point X_0 where vii) is true, therefore vii) is not true in X_0.

Again ¬π implicates a cause-less difference [iii) and v)] and also a cause-less negation of difference [vi)]. Furthermore ¬σ implicates that a cause of a difference has emerged at random [i)] respectively a cause of a negated difference emerging at random [iv)]. When a cause-less difference or negation of difference is equal to chance i), iii)-vi) implicates chance. Since axiom 4, by theorem 12, does not permit chance i), iii)-vi) are not true in X_0. ¬ρ finally implicates negation of difference [ii)].

¬θ then implicates seven alternatives of which six are not possible. Then the seventh, ii) {σ, ¬ρ, π}, is true:

> *Theorem 14: If Λ is not defined in a point X_0 {σ, ¬ρ, π} is true in that point.*[38]

This brings the investigation to a situation where the laws of law-bound domains do not suffice. As will be shown that is because the question now is of a interface between law-bound domains.

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[38] {σ, ¬ρ, π} applying in a point is not easy to imagine. One way to look upon it is to picture Λ as the total set of derivations in an axiomatic-hypothetical system. Since π implicates ρ, this is a sort of a paradox, "p and not p". Theorem 14 does not state "p and not p" though and since it is a theorem within the system it can not be questioned. To get support though the theory has to be tested against models of it. One conceivable support could be found in the work of Gödel. If the physical world is conceived as a function of Λ a situation where "p and not p" emerged might not be that unbelievable.

Of P *in* X_0 *where* Λ *is not defined*

Theorem 14, though, does not show how Ξ:s elements of relation are fulfilled when it is lacking a fulfilment of P, the relations of for example ρ in θ. Axiom 4 implicates that P is fulfilled in X_0. Thus P is fulfilled in X_0.

Theorem 15: If Λ *is not defined in a point* X_0 *then holds for* X_0*:* $\{\sigma, \neg\rho, \pi\} \wedge$ P is fulfilled

P is not fulfilled by the ρ that is negated (ρ), nor by the negation of it (¬ρ). That which fulfils P in X_0 can be called ρ' (rho ”prim”).

Definition of ρ′*:* ρ′ *= df That which fulfils* P *in a point* X_0 *for which* Λ *is not defined*

Dimensionality

In X_0 ¬ρ is true. Since $X_0 \in D_n$ ρ' can not belong to D_n, nor is it possible that the point which ρ' belongs to, belongs to D_n.

Theorem 16: The point that ρ′ belongs to, does not belong to D_n.

Definition of X'_0 = df The point that ρ′ belongs to

Here a hypothesis will be introduced, in which it is assumed that ρ' exists in the dimensions D_n symbolises with the addition of some more, separating it from D_n:

Hypothesis 1: ρ′ exists in a complex of dimensions with the n dimensions of D_n plus ω numbers of dimensions, $\omega \in N$, $\omega > 0$.

Definition of D′: D′ = df The complex of dimensions that ρ′ belongs to.[39]

Theorem 17: $D_n \in D'$.

[39] Thus no ρ in D' can form a difference towards any Ω in D_n.

New laws

Λ does not apply in X_0. In spite of that ρ' is caused for X_0 (in X'_0, I will come back to that later). With this one could say that Λ' determines ρ'. The specific law that applies in X_0' can be called λ'_1. Also π did not cause ρ'. The cause of ρ' can be called π'.

Definition of π': $\pi' =_{df}$ *The cause of* ρ'

Definition of λ'_1: $\lambda'_1 =_{df}$ *The law that the cause of* ρ' *belongs to*

Definition of Λ': $\Lambda' =_{df}$ *The law-domain that contains* λ'_1

The cause of ρ'

Since ρ' do not belong to D_n it can not exist in X_0. Therefore there are two points to be considered though they are connected. For the pair of points X_0-X_0' holds:

#1 {σ, ¬ρ, ρ', π}

σ and π on the other hand can not belong to X'_0, since they belong to D_n.

In X'_0 there is ρ'. According to axiom 4 in X_0' there also has to be more elements. Axiom 4 states that the cause and condition of effect has to be found in the point of effect. Therefore cause and condition of effect is part of #1. Since only ¬ρ is not occupied as an element of relation it has the quality of the two missing elements of X_0'. Thus ¬ρ is part of X_0'. For not violating logical rules of dimensions, namely that what is part of part D_n can not be identical to that which is part of $D' \neq D_n$, ¬ρ in D_n is not identical to that of D'. ¬ρ in X_0' can be called ~ρ (“denied” ρ).

~ρ *as a set*

Because π' and ~ρ are elements, not for instance numbers, the relation between the two can be formulated as a relation between sets. Then the one is an element of the other. Since π' definitely is one:

Definition of ~ρ*:* ~ρ = *df The representation of* ¬ρ *in* X'_0

Theorem 18: In X'_0 ~ρ *is cause and condition of* ρ′.

Theorem 21: π′ ∈ ~ρ

Definition of σ′*:* σ′ = *df What fulfils the relations of* Σ *in* X'_0

Theorem 20: σ′ ∈ ~ρ

Therefore:

X_0: {σ, ¬ρ, π}
X'_0: {σ', ρ', π'}

Dimensionality of ~ρ

For $\pi' \in \sim\rho$ to have a unique relation to that which should have been ρ, $\pi' \in \sim\rho$ must exist in the dimensions which ρ should have existed in. Not any part though of ρ could have existed in D_n depending on that $\neg\rho$ is true. Therefore $\pi' \in \sim\rho$ exists in the *n* dimensions of D_n plus δ numbers of dimensions, $\delta \in N$ and $\delta > 0$.

> *Theorem 22: ~ρ belongs to a complex of dimensions with the n dimensions of D_n plus δ numbers of dimensions, $\delta \in N$ and $\delta > 0$*

The complex of dimensions that $\pi' \in \sim\rho$ belongs to can be called $D_{\sim\rho}$.

> *Definition of $D_{\sim\rho}$: $D_{\sim\rho}$ = df The complex of dimensions that $\pi' \in \sim\rho$ belongs to.*

> *Theorem 23: $D_n \in D_{\sim r}$*

~ρ is existing denied ρ. The latter is a difference related to Ω. For that Ω {σ, ~ρ, ρ', π} could be true in X_0-X_0' (but is not because Ω is not existing in X'_0). Even so, on the behalf of axiom 4 there have to be a difference in relation to Ω in X_0. That difference though has been shown not to exist in D_n. The law-bound difference of D_n was not possible. The difference in comparison with Ω is nevertheless ~ρ ∧ ρ' (the two central elements of #1). If these two should exist in the same complex of dimensions the impossible difference (ρ) would be a fact. Consequently they exist in separate complexes of dimensions.

Theorem 24: $\delta \neq \omega$

From theorem 24 follows:

Theorem 25: The cause of ρ' *does not exist in D' but in* $D_{\sim\rho}$

On Ω

Ω belonging to D_n does not belong to D' and does not exist there. Furthermore ρ' is a primary difference in D':

Theorem 26: Primary difference in D', ρ_1*, is* ρ' *generated from* D_n

As Ω consists of its ρ-elements, Ω in D' is determined by the ρ there. In a primary Ω (in D'), which has been proved, there is ρ' from X_0-X_0'. Ω is one and not many why it is determined by its first ρ (ρ').

Theorem 27: In an initial stage primary Ω *(*Ω_0*) is composed of* ρ' *(*ρ_1*)*

Definition of π_0*:* π_0 *= df Primary cause in D′*

Finally a theorem that sums up some aspects of the theory so far:

Theorem 28: If Λ *is not defined in a point* X_0 *{*σ*,* $\sim\rho$*,* ρ'*,* π*} is true.*

The concept Θ

If Λ is not defined in a point X_0 belonging to D_n P for X_0 is shifted to D', a complex of dimensions separated from D_n. P in D' is called ρ'. This implicates an existence of something with association to ¬ρ, ~ρ. The cause of ρ', π', in turn, belongs to ~ρ. In D' ρ' is primary Ω, Ω_0.

For X_0-X'_0 holds according to theorem 28: {σ, ~ρ, ρ', π}. In a point X'_1, separated from X'_0, and belonging to D', the case is: {σ, π, ρ}, that is, θ. Between D_n and D' {σ, ~ρ, ρ', π} is true, a state of facts below symbolised Θ (”big theta”).

Definition of Θ*:* Θ = *df* {σ, ~ρ, ρ', π} .

That Θ can be true is the result of the present study. The possibility of Θ can be used for analyses of law-bound relations while details on its features have more to require. Next an attempt to develop the theory further is made.

FURTHER DEVELOPMENTS

Definition of being

Above it was evident that if Θ was true in X_0-X_0' P for X_0 belonged to D', separated from D_n. The primary ρ and consequently the primary Ω in D' was made of ρ', the outcome of the processes in X_0. In D' there are no Ω except that based on primary Ω/ρ. In this way Ω in D_n and D' has no point in common; that which exists in these fields of dimensions are in a precise manner split up:

Theorem 29: Ω *in* D_n *and D' does not have any points in common*

Therefore it is meaningful to give Ω-occurrence in D_n one name and Ω-occurrence in D' an other and by those refer to distinctly separated sets without common content.

Definition of being: being in D = df All Ω *in D*

Definition of V: V = df Being.[40]

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[40] As an example of application of the theory some ideas can be tried on the concept of "nothingness". To this end a hypothetical being is discussed below, with the feature that it in an intuitive sense does not exist.

Assume that the following is true: nothing exists. That nothing exists is a general truth that applies in every conceivable case. Now suppose that this "nothing exists" is a form of cause, so that *nothing exists* depending on that "nothing exists". Each and every that does not exist, therefore, has its cause in that "nothing exists", in line with: "Why is there no pink elephant in front of me?" "Because there are no pink elephants." The general cause that nothing exists thus causes the specific that for instance I do not exist.

Primary Ω in the "Being of Nothingness" then, are each and every primary ρ, caused by π (=nothing exists). In this way Nothingness is filled with Ω that does not exist; ¬p, ¬q, ¬r, … . Earlier ~ρ was showed to have the quality of σ for primary ρ. Transferred to the "Being of Nothingness" then, σ for π becomes this "nothing exists". σ in a specific case then can be a difference in "nothing exists", that initiates that the specific *q* does not exist. π therefore causes ¬q on σ.

In a point X_0 the following can emerge: σ for π with result: "¬q does not exist". To negate ¬q however, in the "Being of Nothingness", is not possible. Even though this is supposed to be the case. According to the theory (which could be called "G E T") in this case Θ is implicated in X_0:

1. {π, σ, ~ρ, ρ'}.

ρ is "the cause effecting on ¬q", that is "¬q does not exist". This can be symbolised: ¬ (¬q). In (1) this ρ is denied, giving raise to ~(¬ (¬q)). Thus:

2. {π, σ, ~(¬(¬q)), ρ'}.

According to G E T effect does not take place in D, but in D' as ρ'. The cause is π' ∈~ρ, hence π' ∈ ~(¬ (¬q)). The latter is recognisable as ~q, denied q. To get further an assumption has to be made. How is it that denied q can cause something with q-character (ρ in D was supposed to be q with a double negation)? The assumption has to do with the dimensionality of ~q. In G E T ~ρ belongs to $D_{\sim\rho}$. In this case then, ~q belongs to $D_{\sim q}$.

Assumption: $D_{\sim q}$ is a dimension of denial

Assuming that $D_{\sim q}$ is a dimension of denial, so that the content of it, is denied possibility, the result for ~q becomes: "~q is not possible". An existence of ~q in $D_{\sim q}$ then should cause ρ' in D'.

In the dimension of Nothingness ¬q is to be negated. That is impossible. Then ¬(¬q) is denied, on which that denial is given existence in a complex of dimensions with a content that is impossible. The cause then is the existence in the dimension of denial of ~(¬(¬q)). ρ' (with q-character) then, is caused because a content of Nothingness impossibly not can exist.

Transferred to the general case $D_{\sim\rho}$ should be a complex of dimensions for which it was true that its content was impossible. For the general ρ' in Θ the cause would

Evolution of laws

Seeing that different V belongs to different D_n it is clear that different Λ apply to different V. A law λ therefore apply in exactly one D_n and can only effect Ω in exactly one V. Hence a law in D' does not apply in D_n or vice versa.

Theorem 30: A law λ apply in exactly one D_n (D)

The dependence of laws I

A cause π is related to a ρ. The latter has an exact position in a D. If Θ is true in a point X_0, $X_0 \in D$, a ρ is generated in D', separated from D. The laws applying in D' are separated from those in D_n. V_x and V_{x+1} though are linked in the pair of points where Θ is true. Hence there is a logical connection between the laws of V_x and a subsequent V_{x+1}:

> *Theorem 31: If Λ_1 and Λ_2 belongs to different V where Λ_1 decides effect in D_n and Λ_2 effect in D', then: if Λ_2, then Λ_1 ($\Lambda_2 \Rightarrow \Lambda_1$)*

Axioms of existence

In this section determinations of occurrences are introduced. Below three axioms of existence are presented, implicating factual existence of a number of conditions stated above.

> *Axiom of existence 1: There are at least two V.*[41]
>
> *Axiom of existence 2: For each V holds: there are at least three* ρ *that does not belong to the same* Ω.
>
> *Axiom of existence 3: Each* Ω *has got at least two elements (*ρ*)*

---

[41] One argument for this axiom is that the negation of it implicates that the situation before energy was not a law-domain. In that case there would be no certainty regarding non-physical laws that ought to apply undependable of energy/matter, for example those of mathematics.

At least two V (EA1) implicates at least one point for which Θ is true:

Theorem 32: There is at least one point for which Θ *is true.*

Single extension of Ω

According to theorem 21the cause of ρ' belongs to ~ρ. According to theorem 27 Ω_0 in an initial phase consists of ρ'. Then in that stage all causes of Ω_0 belongs to ~ρ. Because Ω_0 is one then:

Theorem 33: All causes $\{\pi_0, \pi_1, ..., \pi_{i-1}\}$ *of* $\Omega_0 = \{\rho_1, \rho_2, ..., \rho_i\}$ *belong to exact one specific* ~ρ

In this way the elements of a Ω_0 have two connecting factors, partly they belong to exactly one Ω_0, partly their causes belong to one and the same ~ρ. The latter relation shows a resemblance between two consecutive ρ belonging to the same Ω_0. The resemblance is to be used below, first though the following terminology is suggested:

Definition of $A=\{a_1, a_2, ..., a_i\}$: $A=\{a_1, a_2, ..., a_i\}$ = *df A specific* Ω_0 *for a specific V*

For an A then holds that the causes of the elements are belonging to specific ~ρ. Of course two a:s are not identical, but there is a similarity, which is formalised below.

Definition of element of content α: α = *df The similarity between* a_x *and* a_{x+1}, *where* a_x *and* a_{x+1} *constitute two consecutive* ρ, *belonging to the same* Ω_0.

With the definition of content, A can be said to contain *i* numbers of element α. In a situation where a segment of A is looked upon, for example the segment A_f, where $A_f = \{a_1, a_2, \ldots, a_f\}$, f < i, a difference, that is a part of A, speaking of content, will consist of α.

Theorem 34 (Proposition I on the extension of Ω_0*): A* Ω_0 *, concerning content, only can be increased by the last element of it se*

DISCUSSION

The theory presented is axiomatic and thus only relating to its premises, ten primitive concepts and four axioms. Theoretical systems with content corresponding to the content of the theory given here, shows the same structure and inter-relations as discussed in this study, provided the derivations in it are valid.

Such models of the axiomatic theory are relating to what the concepts are relating to. Of this reason G E T, as the theory was called in footnote 14, would *explain* a theory possible to be translated into the structure of the presented. Therefore models of G E T are essential both for the purpose of a falsification and for the validation of it as a scientific theory. Attempts of creating models are a concern for future research.

Meanwhile I would like to take the opportunity to look at some general results of the investigation. Assuming that the premises and the derivations done in this paper are valid, and that the result applies for science, what is true in the one V is true in the other. To be remembered is that this is true in the general case, not in the specific. Of course a dilemma is to determine what is what.

Generally though what is true in a V_x is true in a V_{x+1}. What is true, therefore, before time and space for example is true in space and time. This could explain why the laws of mathematics are valid in nature.

Another thing is that the V of energy/matter obviously is structured hierarchically so that energy is a condition for the elementary particles, who in turn are required for atoms. If this also is true for a V depending on the physical V, that V ought to be structured hierarchically. Supposing a V following the physical is a V of mind, a psychic V, the psyche also would be hierarchically structured.

In order to give a picture of a hierarchy of objects, apart from a physical one, a tentative model of the psyche is discussed in the next few paragraphs.

Suppose the mind does not belong to the V of physical existence, φ. How does it all start? G E T shows that separate V:s are linked in pair of points Θ, either directly or by intermediating points Θ. A V of psychic existence, Ψ, therefore initially is pure in the sense of the *energy* of φ. Also it implicates a point X_0 that belongs to φ. What then is the primary object of Ψ and in what context does it emerge?

Nobody questions the extreme complexity of the brain. If in some point what the brain should execute, cannot happen (perhaps according to the laws of biology), a pair of points Θ will be the result. In such a case, what *cannot be* within the natural sciences? The answer can not be found within the natural sciences, or in any other group of theories. A qualified guess is that "split-vision" is required. Physics cannot derive something not physical whereas psychoanalysis cannot define what is non-physical. Psychoanalysis though can state what is, be it physical or not.

What we know exists, without any explanation by the natural sciences, is the "sensation". Perhaps the sensation is explained as a "side-effect" of something biological but that is an association, not an explanation. We know that this and that organism *reacts* on this and that stimulus, in such and such manner, but we do not know if it had any particular kind of sensation. Without asking, no one knows anything of the sensations of the other. Yet we all know we have them. In this way "sensations" are a candidate for object in Ψ. I suggest "sensations" are primary object in Ψ.

With this hypothesis, i) an organism would behave in its natural manner, e g, the ape would show its teethes following an attack, and ii) the sensation of anger or anything else would be a part of Ψ. Thus there are not features of mind in the biological organism.

Primitive sensations of course are non-complex. If and how primary object is "turned" into later structures cannot be solved without attempts made in that direction – that is, derivations of the premises of G E T. In this section though I want to share some thoughts on the issue on a general and hypothetical level. One thought I have is that the emergence of a more developed object has to have a cause (sic!). For instance, what is the basic predicament for the elementary particles? Why cannot light or pure energy be all what there is? The physical laws found tells us that the mere quantity of energy, the heat it self, is a key. Perhaps one can put it that the heat is the "if and only if" of energy turning into matter?

Assuming a V with dimensions of time and space, rows of ρ:s might have directions that imply a future situation where two rows intersect. If the hypothesis is introduced that a point in an arbitrary D_{km} hosts exactly one ρ (or one ρ at the most[42]), there can be no intersection if the intersection implicates the existence of two separate ρ:s in the same point. To be remembered is that the discreteness of dimensions in G ET perhaps allows an intersection of rows of ρ:s if and only if it is possible that the intersection of rows occur in gaps between ρ:s. If there are no gaps the introduced hypothesis shows that intersection is impossible.

In a V with dimensions of space and time, what if a *density* of ρ:s of different objects makes it impossible that at least two rows do not intersect in the forbidden sense? Thus "p and not p". In line with G E T it could be assumed that what happens is that the ρ to be (in the intersection) is caused as a conjunction of at least two objects (or two ρ:s to be, that is), in a D_{km} separated by at least one additional dimension. This would give a structure to the fact that energy and matter are separated dimensionally.

Following this through it could be the case that the objects of a V have a certain degree of freedom, concerning additional dimensions. Accordingly new objects would be limited within a V, determined by its original degree of freedom. If a situation emerge implicating a "p and not p" when there are no more dimensions to use, the Θ-situation could be a fact.

In the case described the psyche originally consists of "sensations". If a certain magnitude of sensations forces at least two objects to intersect a conjunction, following this discussion, could be the result.

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[42] It is not settled whether a point has existence in it self.

To take a step backwards I want to give the one sensation a context. Assume a situation of the human organisms in which an impossible reaction is a fact. With G E T we see that a sensation is caused. All other reactions of the organism is a part of an inter-dependable system (that of the organism). The impossible reaction must have had the same function. Now, could it be that the sensation is independent of the biological system? Of course not. As soon as the context of the sensation is taken away, the sensation vanishes. Thus cerebral activity is necessary for sensations. Again, can the system of biological reactions be undependable of the sensations? I would be surprised. The biological system is an ongoing process. The impossible reaction has its function, only that it is located in a complex of dimensions separated from that of energy/matter. *Of this reason the biological reactions of higher levels are dependent on sensations, that is, psychic differences.*

With the axioms of existence it is clear that there are at least two different primary objects of Ψ. For biology this means that there are at least two impossible reactions. Thus the baby after conception has sensations with at least two origins. In time we know that the psyche develops considerably.

The thing is not to suggest a system but to give an idea of inter-relating elements in a structure that is non-physical, yet as real as matter and the Pythagorean theorem.

Regarding mind and matter, in conclusion, the theory presented in this paper offers a structure that makes it possible to conceive matter and mind as separate beings with equal status of existence. Therefore, in the light of G E T, it is a more complicated hypothesis that mind is a feature of the biological organism, compared to the one that states that the mind has existence in its own right. In a way the former hypothesis is as likely as one that states that our physical world is a feature of mathematics or any other feasible being preceding the physical one.

Can a theory in which mind is separated from biology have any value beside that of pure knowledge? I think so. In research time and money can be saved as the theory suggests directions of investigation. Some features of important issues are linked to biology but not all. A clarification in that aspect would be useful. The theory also implicates that psychic diseases only can be cured medically by removal of context for sensations. The value of such an incision should not be underestimated since there could be cases where removal is as good for the psychiatric patient as the removal of appendix can be in medicine. To cure the patient without “killing him” though requires means that concern the mind.

Finally this theory has associations to several scientists, theories and ideas over history. To mention a few: It gives a solution to the question of materialism vs. dualism. It gives Plato right in his belief in a “world of form”. It gives support to the thesis of Aristotle of the importance of an axiomatic approach to science. It gives a context to Schopenhauer’s “will”. It explains Freud’s thought of psychic

determinism.[43,44] It is in line with Hegel's thesis, anti-thesis and synthesis. It leans on Gödel's theorem. It is grounded in Aristotle's emphasis on the importance of the double negation. It contributes to put trust in Einstein's conviction in relation to God and dices. It allows us to follow Descartes in his finding that knowledge is more a thing of our sense then of our senses.

Peculiar enough as the emergence of a new being is caused by an impossible difference in an earlier one, it gives a kind of support to the teleological position of Aristotle. There could be a purpose of an being (not proved and almost not even said!). Also Wilhelm of Ockham's razor gives arguments concerning the theory. An existence of exclusive dimensions of the soul may reflect some of Kant's views. The thought of Democritus that everything is made of small indivisible entities is confirmed by the theory. Not to mention Panta rei, that we can not observe "das Ding an sich" and Zeno's paradoxes.

If G ET reveals some new connection the question still remains, why cannot there be nothing? God might hide in the answer.

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[43] Freud's idea of the ego as a "stimulus-barrier" gets a shifted meaning in the perspective of G ET. If higher-level objects/structures of the mind basically rests on an effect of a density of sensations the ego does not develop in order to take care of sensations. Instead ego relies on sensation-conjunction, as atoms rely on photon-conjunction.

[44] G E T also gives an explanation to the existence of four parallel theories of psychoanalysis. If the psyche is structured in the way energy/matter is, there are different kinds of objects to theorise about. In such a case they would be all different with different features, belonging to different sets of dimensions. As physical reactions are separated from biological ones, reactions of the self are not equal to those of the drives. A whole other story is the explanation of the fact that there are no perfect circles drawn in the sand: the circle is a form, thus the circle and the figure drawn are separated by V:s.

APPENDIX: Theorem of the implications of θ:

In θ the following is true:

a) ρ implicates π $(\rho \Rightarrow \pi)$

b) π implicates ρ and σ $(\pi \Rightarrow \rho \wedge \sigma)$

Proof:

According to the definition of π, π is the cause of ρ on σ:

i) Then, if ρ in θ is true, the cause of ρ, π, is true.

ii) Then, if π in θ is true, it has caused ρ on σ, therefore both ρ and σ has to be true.

Corollary1: From $\pi \Rightarrow \rho \wedge \sigma$:

c) $\pi \wedge \sigma \Rightarrow \rho$

d) $\pi \wedge \rho \Rightarrow \sigma$

e) $\pi \Rightarrow \sigma$

f) $\pi \Rightarrow \rho$

Corollary 2: From $\rho \Rightarrow \pi$ follows logically:

g) $\rho \wedge \sigma \Rightarrow \pi$

Corollary 3: Because a) $\rho \Rightarrow \pi$ and e) $\pi \Rightarrow \sigma$:

h) $\rho \Rightarrow \sigma$

Corollary 4: From a)-h), follows, when what is implicated is stated false:

i) $\neg\pi \Rightarrow \neg\rho$

k) $\neg(\rho \wedge \sigma) \Rightarrow \neg\pi$

l) $\neg\rho \Rightarrow \neg(\pi \wedge \sigma)$

m) $\neg\sigma \Rightarrow \neg(\pi \wedge \rho)$

n) $\neg\sigma \Rightarrow \neg\pi$

o) $\neg\rho \Rightarrow \neg\pi$

p) $\neg\pi \Rightarrow \neg(\rho \wedge \sigma)$

q) $\neg\sigma \Rightarrow \neg\rho$

I say.
I have told Johan this.
Satan and his friend Mammon can use their capital of violence against Johan if we do not acknowledge the initial source.
This thin thread between body and soul is the new science.

Biological Energy and the Experiencing Subject

Abstract
As physical things have mathematical properties we in this paper let mental things have biological properties. The work is based on recent metaphysical findings that shows that there could be interfaces between separate ontological domains. According to this view there could be mathematical objects, physical objects, and also mental objects. The aim of this study is to establish a view of the biological object that allows it to possibly generate the experiencing subject. Based on the notion that energy per se is related to the ability of a system to do some work, biological energy is defined as a biological object's ability to recover from the load it is exposed to. Introducing the concept of the experiencing subject, the experiencing subject would be the *agent* experiencing the biological object's *need* of recovery from the load it is exposed to. Once established, the experiencing subject may develop non-biological needs. On this basis experiencing subjects have biological properties without being biological in exactly the same manner as physical things have mathematical properties without being mathematical (would that be the case).

1 Introduction

The old question of the relation between body and mind recently has been reopened by Gamper (2017) who showed that the body possibly could affect a non-physical mind indirectly via an interface between the two ontological domains. This possibility was discovered as a result of a redefinition of the classical Principle of the causal closure of the physical universe. In the redefinition a universe is causally closed if it is not causally affected by anything from another universe. This definition of causal closure permits something in a universe to cause something that is not in a universe. Since something that is not in a universe is allowed to cause something in another universe that is causally closed, two causally closed universes can be causally linked via an interface between them.

In (under review) Gamper discusses two kinds of interfaces. Even though interfaces are between universes Gamper distinguishes one kind of interface that is caused by one universe and in turn is causing another universe, from another kind of interface that is caused by a universe but that is not causing another universe. Specifically he discusses a universe w*i* causing an interface that causes a universe w*i+1*, as compared to universe w*i+1* causing an interface between itself and universe w*i*.

Gamper (ibid.) exemplifies this with the eventuality that a (platonic) mathematical universe has caused the original singularity inside the Big Bang whereas the physical universe causes singularities inside black holes. If such singularities really are interfaces, the Big Bang singularity causes the physical universe whereas black hole singularities do not cause the mathematical universe.

These two kinds of interfaces—Gamper calls them 'vertical' and 'horizontal'—may constitute a conceptual basis for a potential interaction between two separate ontological realms. In (2018) Gamper discusses what the possibility of ontologically different kinds of objects has for the very concept of 'object'. For our discussion here we can draw upon Gamper's reflection and ask what a potential interaction between a pre-physical universe and the physical universe entails for the potential interaction between the physical universe and a potential post-physical universe, a non-physical universe of the mind. Following Gamper (under review) the latter kind of interaction would require a vertical and a horizontal interface between body and mind.

In Gamper's terminology these matters belong to the field of 'scientific ontology' (2019). Scientific ontology is the science of investigating what basic assumptions and ontologies that permit interfaces between universes.

When a set of basic assumptions is dressed up in an ontology that permits interfaces between universes the next step is to let science test the ontology empirically (the ontology asserts modal properties for any scientific framework and can thereby be refuted).

In this paper a smaller step is taken. The focus is to pinpoint 'The unreasonable effectiveness of mathematics in the natural sciences' (Wigner 1960) and to transfer it to the potential interface between the body and the mind. If there is a mathematical universe, many of its characteristics seem to linger in the physical universe.

The question, in this paper, is what in the physical universe could be found in the potential universe of the mind? Specifically, we will suggest a biological principle that could be found in the potential universe of the mind. The topic, thus, is based in Gamper's discovery of a potential interaction between ontologically different fields.

2 From one Interface to Another

The fact that mathematics seems to be, or is, integrated with physics, could be due to physics being dependent upon but separate from mathematics. An argument for this view is that one can imagine a possible world with no physical stuff but in which two and two makes four (this is the platonic view of mathematics), whereas it seems impossible to imagine a possible world with physical objects, in which two apples and two apples did not make four apples. According to this view apples (and all other physical entities) have mathematical properties although they are not mathematical.

Footnote
1 Analogously, objects of the mind would belong to physical dimensions as well as non-physical dimensions of the mind.

Footnote
2Physical objects, on the other hand, would not belong to non-physical dimensions of the mind.

What is missing here in this tentative approach, is an idea of what physical ‘things’ could be found in the universe of the mind (which we are talking about).

When we look at the mathematics/physics pair we acknowledge that there are no mathematical objects in the physical world. Even so, the physical world seems to follow mathematical laws. The idea that I will argue for is that we have to be very specific when we try to find some common ground for the body and the mind. Concretely I will suggest that the common ground for the body and the mind will be found when we look closer at the concept of ‘energy’. Narrowed down the idea is to define an energy tied exclusively to biological objects and then let ‘psychic’ energy be dependent upon biological energy.

Furthermore, I will let biological energy be tied to a biological object. In the next step I implicitly suggest that the biological object may cause an interface that in turn causes an experiencing subject. On this ground we have biological objects with biological energy and experiencing subjects with psychic/mental energy based and dependent upon the biological object with its biological energy. Finally, I will suggest an experimental design to test the hypothesis empirically.

3 Biological and Psychic Energy

3.1 Recovery as a Universal Biological Feature

Let us make the claim that biological objects are in a flux; they always change. The idea generally is a perspective on biological homeostasis and specifically frame all biological processes that promote homeostasis to be the biological object's efforts to recover. Since biological individuals are hard to define we let the term 'biological object' be undefined.

Footnote
3 Its meaning, however, is meant to be humans, dogs, rats and other more developed biological organisms as well as less developed ones but not artificial systems as computers, robots et cetera.

3.1.1 Biological Energy

A general definition of energy is that energy is tied to the object's ability to do some work.

Footnote
4 We see here that energy is directly linked to an object (or, more precisely, to a system). So, biological energy would be the ability of a biological organism or a biological object to do some work. At closer inspection this can be further analyzed into two parts: the objects potential ability to do some work and the actual work being done by the object.

In physics we talk about an object's energy of *position*, or, *potential* energy, and its *kinetic*energy. An object gains potential energy if it is positioned higher above the ground and it can use the energy to gain speed (kinetic energy). A steel ball that is moved in this way is intact and "has" and "loses" energy while remaining the same object. The opposite is true if we look at nuclear energy. When we extract nuclear energy (in a power plant for instance) the object losing energy does not remain the same. Obviously, therefore, there are two kinds of energy in regard to a system or an object. The one kind permits the object to gain and lose energy while being intact, or "the same" object, whereas the other kind of energy destroys the object carrying the energy if it is used.

Concerning biological objects this distinction is crucial but previously unnoticed in the literature. Traditional “biological “energy is, as it seems, mixed up with *chemical* energy. A typical example is the following:

Strictly speaking, "biological energy" ought to refer to the chemical potentials produced and consumed by the myriad and interwoven reactions that take place within the compartments of living matter as it... well, lives! But these processes are perhaps better known, collectively, as metabolism.

We use the phrase "biological energy" as a convention to refer to a specific social and technological endeavor: to use the metabolic capacities of organisms to convert some combination of light, biomass, organic compounds, gases and water into useful chemical-bond energy; i.e. storable, transportable, energy yielding molecules as well as industrially useful materials. Examples include hydrogen, methane, alcohols, ammonia and bioplastics. (Massachusetts Institute of Technology, mission statement from the biological energy interest group, 2019)

What we look for, instead, is a concept of biological energy that permits the object to do some work while remaining intact. It should therefore correspond to the concepts of potential and kinetic energy in physics.

3.1.1.1 Biological Energy as the Organism’s Ability to Recover from Load

Since there is no concept of biological energy in the literature, in the sense discussed here, the first step towards such a concept is a leap into the unknown. From an abstract perspective, however, we can construe *all* biological activities as efforts of biological organisms to recover from load upon them. From here the next step is easy. We let biological energy be defined as the biological object’s ability to recover from load upon it.

3.1.1.2 Two Kinds of Biological Energy

The suggested definition of biological energy is that biological energy is the biological object's ability to recover from load upon it. The biological object, therefore, has an absolute maximal amount of biological energy that it can use to recover. Let us call that amount Emax. For a specific biological object *i* (BOi) we could adopt the notation Emax(BOi) to denote the maximal amount of ability to recover that the biological object has.

One part of Emax is energy that could be used but that is not used at the moment. This is analogous to potential energy in physics and we will use that terminology here too. The ability to recover that the BO has that is not in use is its *potential*biological energy. Likewise, we adopt the term *kinetic* energy for the part of Emax that is in fact being used at a given moment. Kinetic biological energy is the very recovering going on.

3.1.2 Load

For practical reasons we will not say much about load as such. The basic assumption is that biological organisms constantly need to recover and they need to recover from the load that is put on them. One thing, however, must be sorted out immediately. We have discussed that ability to recover, or, energy, is related to load. We have also stated that the organism has an amount of energy, at any given moment, that it either uses or has to its disposal, or any mix of the two. The thing that has to be sorted out is the relation between load and energy.

3.1.3 The Organism's Need of Recovery

As noted above the basic assumption is that biological organisms constantly need to recover and they need to recover from the load that is put on them. We can therefore postulate that load and need of recovery has a positive relation; the more load, the more need of recovery. We can now use the concept of need of recovery to link load to energy or ability to recover.

As need of recovery can be thought of as increasing with load up until a point where the organism simply collapses (dies), the organism's level of kinetic energy will not increase in the same manner. On the contrary, kinetic energy has its maximum at Emax. When the kinetic energy is at Emax, the organism has no potential energy and if load continues to raise the organism will not be able to recover as much as it needs to. This produces a backlog of need of recovery.

3.1.4 Reduced Emax at High Levels of Load

An implicit basic assumption behind the energy-concept is that biological organisms allocate resources for recovery continuously. The organism allocates more resources for recovery purposes, if it can, the more it needs to, that is, the more load there is. At low levels of load, therefore, the kinetic energy is low whereas the potential energy is high. At intermediate levels of load the kinetic energy also is intermediate. At the same time the level of potential energy is intermediate. At a certain point of (high) load the level of kinetic energy meets Emax. If load increases beyond that level Emax is reduced.

3.1.5 The Relation Between Load and Kinetic Energy

The hypothesis, thus, is that need of recovery has a positive relation with load. We have also seen that the kinetic energy raises with load up to a point, Emax, after which the level of kinetic energy decreases since all energy is absorbed by the kinetic energy and Emax is reduced with load. At low and moderate levels of load, thus, the level of kinetic energy matches what is needed for recovery. When load exceeds what is possible to recover from right away the level of kinetic energy decreases. At the point of Emax, thus, load is optimal for the level of kinetic energy.

On the basis of the concept of the biological energy of the biological object, we now can go on and look at our options to transpose the concept of the biological energy of the biological object to a concept of psychic energy of an experiencing subject.

3.2 The Experiencing Subject

The basic idea, thus, is that an experiencing subject is grounded in a biological object and that the link between the two goes through the concept of energy. We are not stating what the potential interface would be. We just try to establish a concept of psychic energy. The very experiencing subject will be undefined just as we let the biological object be undefined. The first step, thus, is to assume that we have an experiencing subject that is grounded in a biological object.

The path to how the relation between the biological object and the experiencing subject can be conceived is established by way of the suggested concept of biological energy as the biological organism's ability to recover from load. With help of the intermediate concept of need of recovery (NoR), we can picture the kinetic energy of the organism raise with load up until a point after which the kinetic energy decreases with load. Increased load after Emax leaves the organism with a backlog of NoR and the organism's ability to recover is lowered.

On an ontological level the NoR of a biological object (BO) is an abstraction. When it comes to a BO with an experiencing subject (ES), however, we acquire a possibility to make the NoR less abstract. Initially, however, NoR is abstract also for a BO with an ES (a BOES). The BOES is basically in the same relation to its NoR as the BO is. The concept of the BOES, however, opens up for an adjoining concept of *signals* of need of recovery (SNoR). This is because if there is an experiencing subject it can perceive signals of need of recovery. Without an experiencing subject no one can perceive anything. *With* an experiencing subject, however, we can postulate a one-to-one relation between NoR and SNoR, and replace NoR with SNoR in our model (when it is applied on BOESs), without needing to do any further adjustments. The relation between load and kinetic energy is the same for BOs and BOESs. The difference is what the intermediate dimension is. For BOs it is NoR and for BOESs it is SNoR.

Looking at this closer we can see an analogy between mathematics/physics and biology/psychology. The relation, for example, between the area of a square and its sides is the square root. In mathematics, however, there is nothing that has an area or a length of a side of something. In the physical world, nevertheless, there are things with lengths and squares have sides with the length of the square root of their areas. The analogy is that biological objects have NoR in principle but experiencing subjects have real NoR.

3.2.1 Itches and Pains

In our most simple model of the energy of the biological object itches, for just focusing one of the two in the paradigmatic philosophical pair of ‘bodily sensations’, takes an ES to be accounted for. The load should relate to a need for scratching. In a BO without an ES there is no itch since no one can perceive the sensation. In a BO without an ES, therefore, there is only a need to scratch and if the object can scratch it will scratch. The need to scratch without an ES has no sensational basis. A BOES, on the other hand, may have the same need to scratch but the very scratching is mediated by the signals of the need to scratch. Those signals are the itching. In this model, therefore, the old debate as to the significance of experiences (itches in this case) is closed when it comes to BOESs. The importance of experiences is paramount when it comes to BOESs. For BOs the need to scratch leads to the scratching.

Footnote
5 For BOESs the itching leads to the scratching.

3.2.2 The Impact of the Signals of Need of Recovery (SNoR)

The dimension of SNoR replacing NoR does not change anything in relation to the correlation between load and kinetic energy. The interest, however, instead is focused on behavioral aspects of the BO and the BOES, respectively, in regard to load/kinetic energy.

Leaning only on kinetic energy, load, and NoR/SNoR we have no reason to consider behavioral differences between BOs and BOESs since the correspondence between NoR and SNoR is assumed to be one-to-one. The difference between a BO and a BOES, however, is, of course, paradigmatic. We can articulate the difference by introducing a most obvious additional dimension. NoR in the BO case leads to recovery measures. SNoR in the BOES case, however, leads to behavioral conduct insofar as the SNoR are *perceived*. Crucial here, thus, is that NoR in the BO case is an abstract dimension having no behavioral impact. SNoR in the BOES case, on the other hand, is not an abstract dimension. The signals are real. Also, they are only acted upon to the extent they are perceived.

A biological organism without an experiencing subject per definition cannot act upon signals of any kind, nor act upon signals of need of recovery. Such an organism, therefore, who is in need of nutrition, will eat if it can. A biological organism with an experiencing subject, on the other hand, will eat if *three* conditions are met: first, it has to have signals of need of recovery, in this case have hunger. Second, it must be able to eat. Third, and this is where a BO and a BOES really differ, the BOES has to be able to perceive the hunger it has. Biological objects and other objects without ESs, on the other hand,—computers, stop lights, and thermostats alike—neither have signals of need of recovery, nor do they have any ability to perceive such. They, per definition, have no experiencing subjects and do not have anything to experience.

The impact of SNoR, therefore, is dependent on the subject's ability to perceive the SNoR. The subject's ability to perceive the SNoR will be postulated to have a negative relation with load. This is to say, the more load the less ability to perceive the SNoR (APSNoR).

The dimension of APSNoR gives us the possibility to make predictions as to how BOESs will behave depending on the level of load. The postulation of the dimension in itself may be commented with reference to everyday experiences of difficulties to feel hunger under high stress, but it is also important to remember the categorical difference between BOs and BOESs. A computer, for instance, simply cannot suffer. The BOESs can suffer and the APSNoR mitigates the impact of high level of load so the situation for the BOES becomes more manageable under high levels of load.

This "mitigating" dimension, however, has a profound behavioral impact on the BOES. While the BO recovers as much it needs and can, the BOES will tend to recover more willingly at low and moderate levels of load. This is due to the high level of APSNoR. Small increases of load are highly detectable and will be met by recovery measures. At high levels of load, on the other hand, the *low* level of APSNoR will make the BOES more reluctant to recover. This is due to the accumulated backlog of SNoR. The backlog of SNoR is a source of difficult signals of NoR. The more the BOES recovers, the more it can feel the signals. This, of course, is more of a problem at rather high levels of load, when the backlog is considerable and the BOES's kinetic energy is low.

3.2.3 Conclusion

The very simple model that we have built appreciates the fundamental difference between biological objects with and without an experiencing subject. The difference is spelled out in two steps. First, the BO recovers as much it needs to and can, while the BOES's incitement to recover comes from signals of need of recovery. This is to say that while the BO eats when it needs to the BOES eats when it is hungry. Second, the BOES ability to perceive the signals of need of recovery decreases with level of load. While this drives it to really take care of itself at low levels of load it also drives it to push itself at high levels of load. The risk, therefore, is that the BOES, besides, naturally, that it can *be pushed* towards high levels of load, can push *itself* towards high levels of load.

4 An experimental design

4.1 Subjects

Humans, dogs and rats (and/or more suitable subjects for the design).

4.2 Method

Subjects are placed on a treadmill.

The speed of the treadmill is increased step by step.

Measuring the heart rate the speed is increased when the heart rate is adjusted to the previous speed. At some speed (coupled with duration) Emax is reached.

Further increases of the speed will build up a backlog of need of recovery.

Lowering the pace step by step will eventually enable the subject to recover from the backlog.

4.3 Prediction

Higher order biological objects will show delayed recovery.

Notes

1. A practical solution to this would be that mathematical objects and physical objects all reside in mathematical dimensions whereas mathematical objects do not belong to physical dimensions while physical objects do belong to physical dimensions.

2. To follow the thought through, objects of the mind then perhaps also would belong to the dimensions of mathematics?

3. “The impressive variation amongst biological individuals generates many complexities in addressing the simple-sounding question *what is a biological individual?”*(Wilson et al. 2019).

4. *Fundamentally, all energy is related to the ability of a system to do work.*” (Anslyn and Dougherty 2006 , p. 66).

5. To complicate things further it should not be necessary that the subject *knows* that it has an itch. If we require the subject to have such higher order function in order to experience the itch, we exclude the possibility of there being experiencing subjects without self-awareness. If we allow such subjects, however, we cannot assert them having experiences without basing the assertion on an undefined concept. This since we cannot ask them.

Abbreviations

APSNoR:
Ability to perceive the signals of need of recovery

BO:
Biological object

BOES:
Biological object with an experiencing subject

Emax :
The maximal amount of energy that a biological object can convert to kinetic energy

ES:
Experiencing subject

NoR:
Need of recovery

SnoR:
Signals of need of recovery

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The Strained Mind

Abstract

In organic chemistry the strained molecule has potential energy which could be used to help it regain its previous form or even to make it another kind of molecule. The potential energy of the organism, on the view proposed here, is dependent upon a parallel mechanism. The stance allows definition of a higher order strain mechanism of the organism unique for higher order organisms as humans.

1 Introduction

In organic chemistry *strain* is the *distortion* of a molecule due to internal *stress*. Different sorts of strain add up to a combined total strain *energy* (Anslyn & Dougherty, 2006, p. 82). The strain of the molecule can be released for the molecule to regain its earlier form. On an abstract level the strain energy can be used to do some work. Anslyn and Dougherty (2006, p. 66) writes: "*Fundamentally, all energy is related to the ability of a system to do work.*" Chemical work in this regard could be the changing of bonds between atoms forming the molecule so that one set of atoms can be transformed from constituting one molecule to constituting a different molecule. This could be done by straining the molecule by adding heat.

In material science we find parallel processes. When we for instance pull a rubber band we see how it snaps back when we release it. The rubber band gains strain energy which is used to contract it. A more general term can be applied if we regard an object's *potential* energy.

The main principle at work is that we can raise the level of internal energy in the subject by putting stress on it – by pulling, twisting and heating it. In this paper I will show that this principle makes sense also at the level of biological organisms. Additionally I will demonstrate how the principle can be complemented to explain mechanisms of higher order biological functioning.

2 Key concepts from physical organic chemistry

- Stresses
    - Internal forces due to load.
- Strain
    - The effect upon the specimen due to the stresses.
- Strain energy
    - The potential energy of the internal stresses.

3 Stresses and strains of the biological organism

The biological organism undergoes constant changes. The central point I want to make here is that the organism constantly will be faced with new jobs requiring energy. A unicellular organism in need of direct sunlight positioned behind a stone on this account will direct its resources to overcome the obstacle. The energy needed for the transition of resource direction is some kind of strain energy. The easiest way to account for this is to say that the strain *is* the need for the transition or for direct sunlight. This down to earth suggestion is basic in the following.

3.1 Stresses

A fox is of its reasons climbing a hill. At some point it could benefit from rest. Also it at some point could use some water and food. We say that the efforts put the fox under stress.

3.2 Strain

On a chemical level molecules due to the climbing, one can imagine, gets strained. On the biological level we say that the fox becomes in *need of recovery*.

> *Let* $\boldsymbol{r_x}$ *be a vector representing the need of recovery* $\boldsymbol{x}$ *and let* $\boldsymbol{c}$ *be the sum of all needs of recovery,* $\boldsymbol{c}=\{ \boldsymbol{r_1}, \boldsymbol{r_2}, \ldots, \boldsymbol{r_i}\}$*, for an organism O.*

The concept *need of recovery* in this way sums up all strain in the organism at a given moment.

> Definition: Need of recovery (of the organism) = (Df) Biological strain (as compared to the strain in organic chemistry).

3.3 Strain energy

On this account *strain* on the chemical level is *need of recovery* on the biological level. Say that a molecule is twisted. This means that it is strained and the strain energy, the molecule's *potential energy*, can be used to help it regain its original form. On the biological level the strain is the organism's need of recovery. The strain energy, the energy the organism has by being strained, by having need of recovery, can, naturally, help the organism recover. This particular energy, the *potential energy* of the biological organism, I want to call the recovery *function* of the organism.

> Definition: Recovery function (of the organism) = (Df) The potential energy of the organism due to its need of recovery (strain).

The relation between strain and strain energy is fundamentally interesting in areas such as organic chemistry and material science. The relating overarching principle is present also in ecology (resilience is an example). So, this is a topic that could be developed at length but I do not want to lose pace and will cut to the chase. It should be obvious, given that the potential energy is related to strain, that neither too little nor too much is optimal. In material science the relation between strain and stress is mapped concerning metals in the 'Atlas of stress-strain curves' (2002) where over 1400 curves are shown. Typically the stress (the potential energy of the metal specimen) has a positive relation with strain at low and medium levels of strain. After a peak, though, stress has a negative relation with strain.

It is important to see the direct parallels at work here regarding organic chemistry, material science and biology. The ability of the specimen to, say, regain its original form, is related to strain: in initial stages the more strain, the more ability and in later stages the more strain the less ability. The specimen simply regains its form in early stages whereas it in later stages closes up to its breaking point. As with metals the particular curves will be different for different specimens and circumstances.

For biology I will assume an ideal curve based on the Yerkes-Dodson law:

> *Let the recovery function of an organism depict the inverted U-form of the Yerkes-Dodson law as a function of need of recovery (see figure 1).*[45]

[45] Robert Yerkes published a book in 1908 on his experiments on dancing mouse. Later that year he and John Dodson published a paper with further experiments. The experiments were on the effect of strength of stimulus on the rate of learning. An early hypothesis ("the first Yerkes-Dodson principle") was that the stronger the (electric) stimulus was, the faster the mice would learn (to discriminate between white and black boxes). The results yielded a more complex relation where moderate stimulus resulted in the highest learning rate. In time the original findings have been transformed into the *Yerkes-Dodson law* where the relationship between stress and performance describes an inverted U-form.

4 Stresses and strains of higher order organisms

Further developments of the idea that the potential energy of the biological organism is a function of need of recovery of the organism is demanding. If its parallels in both organic chemistry and material science have had their departments surely the specifications regarding biological strain would need thorough investigation. Even so I want to go on to the main topic of this paper, the application of the idea on higher order biological function.

We have to leave really heavy stuff aside to take this step. One thing we cannot address is causality. Why, for instance, is the amount of internal stress greater at a certain level of strain as compared to another level in the case of a steel wire? The parallel question in the biological case cannot be answered intra-theoretically at this stage.

4.1 Signals of need of recovery

For higher order organisms the assumption simply is that some of their needs of recovery are mediated in one way or the other, that there are *signals* of need of recovery.

For higher order organisms, let their higher order needs of recovery be mediated by signals of need of recovery.

‘Higher order needs’ is chosen to pick out some needs of recovery exclusive for higher order organisms but the concept is not essential at this stage.

Now we have a qualitative difference between organic molecules and lower order organisms on the one hand and higher order organisms on the other hand: the higher order organisms have signals of need of recovery in addition to need of recovery whereas lower order organisms do not have signals. Next it is assumed that the signals have a receiver.

4.2 Signal perception

Given that the need of recovery is mediated by signals of need of recovery we need a receiver of the signals.

Let higher order organisms have a feedback system that perceives the signals of need of recovery.

I cannot go into details on how this ‘perception’ could be conceptualised. Given the concept of ‘perception’, though, we are on mental ground and the relation and difference between ‘reception’ and ‘perception’ must be set aside until another time. Perhaps the difference is crucial but that analysis is not for now. Instead I will push on and postulate two additional relations.

4.3 Signals and perception

In this version of the theory two additional relations are assumed in idealised states. The first one concerns the strength of the need of recovery signals. The assumption is simply that the signals increase in strength as the need of recovery increases.

> *Let the strength of the signals of need of recovery have a one to one relation with level of need of recovery.*

The second one concerns the ability for the feedback system to perceive the signals. The assumption might seem odd but there is considerable positive evidence for it.

> *Let the ability of the feedback system to perceive the signals of need of recovery have a negative one to one relation with level of need of recovery (figure 1).*

Given that the strength of need of recovery does increase with level of need of recovery we have good use of the assumption. Regard for instance your sense of hunger. At lunch time you are hungry. A quarter past lunch time (without lunch) you are bad company but after an hour or two you seem to be able to leave the thoughts on nutrition behind and concentrate on work (in this ideal case). If, *ex hypothesi*, the hunger feelings in fact do increase in strength the last assumption explains the process nicely.

5 Definitions of stages of higher order organisms

What is said is that the organism is strained (has needs of recovery) and that the strain gives raise to potential energy (strain energy/ recovery function). In addition it is assumed that higher order organisms have some of their needs of recovery mediated by signals of need of recovery and that the signals are perceived.

We can now define three separate stages of the higher order organism.

Definition: Inertia = (Df) A stage where:

1. the recovery function is low
2. the ability for the feed back system to perceive the signals of need of recovery is high
3. the strength of the signals of need of recovery is low.

In this phase of inertia the feedback system is very sensitive to raised strength of signals of need of recovery. Here we feel our basic needs of sleep, hunger and thirst. Here we defend our state of inertness (see fig 1).[46]

Definition: Optimal need of recovery = (Df) A stage where:

[46]Anecdotal examples of inertness are infants, teenagers and those who are tired in the morning.

1. the recovery function is high
2. the ability for the feedback system to perceive the signals of need of recovery is moderate
3. the strength of the signals of need of recovery is moderate.

In this phase the organism can handle its need of recovery as well as perceive the signals of the need of recovery.[47]

Definition: Impaired recovery function = (Df) A stage where:

1. the recovery function is low
2. the ability for the feedback system to perceive the signals of need of recovery is low
3. the strength of the signals of need of recovery is high.

In this phase the organism suffers from unmanageable levels of signals of need of recovery (*ex hypothesi*). Initially, though, an even higher level of need of recovery leads to more *well-being* (not perceiving the signals of need of recovery) at the cost of level of recovery function. This is temporary since the organism at a certain point develops system function failure due to a low level of recovery function combined with a high level of unmet need of recovery. Lowered level of need of recovery, in turn, leads to less perceived well-being but raised level of recovery function.[48]

[47] Examples here are high functioning professionals.

[48] For the record there are two processes that lead to system function failure. Except for the dynamic process there is the obvious static process where outer stressors force the organism towards exhaustion.

6 Stresses and Strains of the Mind

From this schematic account, what can be said about the mind? Given that the mark of biological strain is need of recovery the mind as a property of the body has needs of recovery. If we also hold as true that the strain energy of the organism is a function of the need of recovery the mind gets its fuel from the very need of recovery.

Coping in the stage of inertia could be thought of as raising the level of need of recovery. With increased internal and external demands we can put in an extra effort. When we have reached our peak there is little to gain in raising our level of ambition further. But we do and the explanation given by the present account is that we tend to push ourselves further, not only in cases when we do need to, but also to feel better. And the further we push ourselves the greater the backlog of unrecognised needs of recovery.

Finally, I do think that features of the mind are tied to biology and physical organic chemistry by the strain link.

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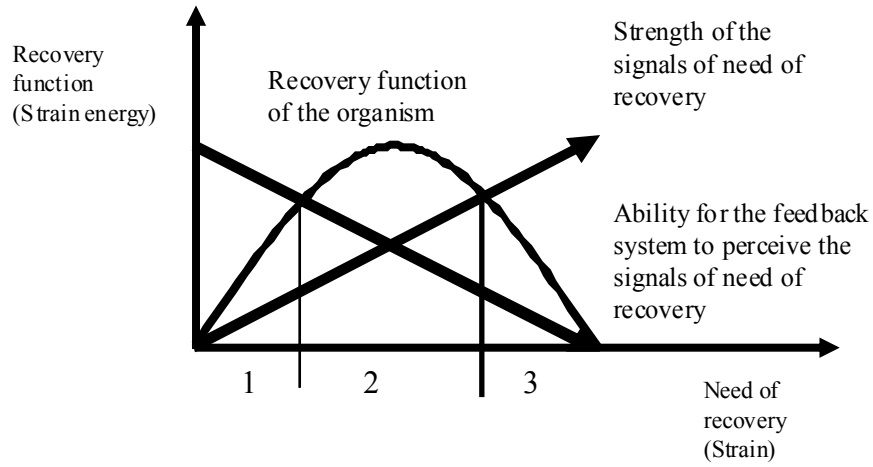
Figure 1. Stages of Recovery function. 1. Inertia. 2. Optimal. 3. Impaired.



Emotions of the Experiencing Subject

1. Introduction
Scarantino and de Sousa (2021) states that '[n]o aspect of our mental life is more important to the quality and meaning of our existence than the emotions. They are what make life worth living and sometimes worth ending.' Even so it has been hard to come to terms with what they really are.

> 'Two broad desiderata have governed the project of defining emotions in both philosophy and affective science: (a) Achieving compatibility with ordinary linguistic usage, and (b) Achieving theoretical fruitfulness. A definition that aims exclusively at (a) is a *descriptive* definition. A definition that aims at (b) at the cost of possibly violating some ordinary intuitions is *prescriptive*.' (Ibid.)

The authors conclude, however, that '[d]espite the great diversity of views on the nature and function of emotions we have documented, a broad consensus has emerged on a number of topics.' We will not question there being a broad consensus. On the other hand, though, we will argue that emotions have been treated much to soft depending on an inability to see them in their context. We will explain why and put them in a context that helps understand them.

2.
The real problem is deeper than accounting for emotions. It is this. Our knowledge of *any* conscious experience comes from reports of such. The problem is that this entails that our reports are based on conscious experiences of subjects that have the capacity for *self* consciousness. Otherwise there would be no report.

3.
We can look at the perhaps most simple case of sensory sensations with visual sensations as an example.

3.1
Visual sensations are *something*. We now of them via reports of subjects that can make reports, subjects that *know* that they have visual sensations. Visual sensations are something but they are not as such something that anybody knows that a certain subject have.

A typical example is a cat looking at you. Does the cat see you or not? You cannot know. Perhaps it does. Perhaps it does not. Granted that the cat cannot report if it sees you or not we must accept that it may see you. Then there is more to visual sensations than we can now via reports.

If we keep it simple and say that things anyone can see are things that reflect light (in a certain way) we know what can be seen. But we do need know who can see things.

4. When it comes to emotions we have the same taxonomy. Some animals can have a sensation of an emotion. Some other animals cannot have a sensation of, say, anger. Yet some other animals can know that they are, say, angry.

To be clear this is to say that some animals cannot have a visual sensation even though they are exposed to reflected light from an object that can be seen and even though they have light detection ability and can react upon light (say, amoebas).

5.
The problem, thus, is that philosophy and science have failed to respect this division of levels of consciousness. Emotions, as we know them (and try to account for), are conscious contents that we know about.

5.1
This may seem like a small *lapsus* but hides an ocean. When a specimen with light detecting capacity is exposed to something that could be seen the division of levels of consciousness is this. The specimen cannot be conscious of what it is exposed to, the specimen can be conscious of what it is exposed to but cannot know that it is conscious of it, or the specimen can know that it is conscious of it. Crucial here is that being conscious about something is not to *know* that you are conscious about it.

5.2
Animals that are angry but that do not have the capacity to know that they are angry are as angry as anyone.

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Initial code

(63255673930)

Undefined terms

1. ρ
2. σ
3. Difference

4. Dimension
5. Relation
6. Element
7. Cause
8. Point
9. Belongs to
10. Existence

Definitions

a set = df A specific existence of elements

D = df A specific and limited set of dimensions.

π = *df The cause of* ρ *on* σ.

θ = *{*σ, ρ, π*} = df*

1. A specific π *that causes a specific* ρ *on a specific* σ*,*

2. the specific ρ *that is caused by the specific* π *in 1. and*

3. the specific σ *mentioned in 1.*

D_{km} = *df A specific and limited field of dimensions;* $\{d_k, d_{k+1}, ..., d_m\}$*, in which d is a separate dimension and* D_{km} *contains m-k+1 dimensions.*

form = df A specific set of relations.

Ξ = *df The form of* θ.

elements of relation = df Parts of a structure of relations necessary to define a form.

Π, P *and* Σ = *df The elements of relation of* Ξ*; where* Π *represents the relations of* π*,* P *the relations of* ρ *and* Σ *the relations of* σ.

Axioms

Axiom 1: ρ *is a difference*

Axiom 2: σ *is a difference*

Axiom 3: ρ *belongs to* D_{km}*, a specific and limited field of dimensions*

Axiom 4: In all points X belonging to an arbitrary D, Ξ *is true.*

Ω = *df*

1. $\{\rho_1, \rho_2, ..., \rho_i\}$*,*

2. in which each and every ρ_x $(1 \leq x \leq i)$ *constitutes a difference towards* $\{\rho_1, \rho_2, ..., \rho_{x-1}\}$*, and where*

3. ρ_{x+1} *constitutes a difference towards* $\{\rho_1, \rho_2, ..., \rho_{x-1}, \rho_x\}$.

λ = *df* $\{\pi_0, \pi_1, ..., \pi_q\}$, *in which each and every* π_x *causes a* ρ_{x+1} *belonging to the set* $\{\rho_1, \rho_2, ..., \rho_q, \rho_{q+1}\}$ *which constitutes the total amount* ρ *in a specific and limited field of dimensions* (D_{km}).

λ_{km} *causes all* ρ *in* D_{km}.

Every ρ *caused by a certain law* λ_x *exists in a limited and specific complex of dimensions* D_x.

D_n = *df The field of dimensions* $\{d_1, d_2, ..., d_f, ..., d_g, ..., d_{n-1}, d_n\}, 1 \leq f \leq g \leq n$ *that contains;*

1. all ρ_x *belonging to* D_{fg},

2. all ρ_y *that can form* Ω *for* ρ_x *and*

3. all ρ_z *that* ρ_x *can constitute* Ω *for.*

Λ = *df* $\{\lambda_1, \lambda_2, ..., \lambda_P\}$, *where P is the total amount of laws applying in* D_n *and where* $\{\lambda_1, \lambda_2, ..., \lambda_P\}$ *causes all* ρ *belonging to* D_n.

initiating difference = df σ

every difference related to Ω (ρ) has a cause π belonging to Λ.

λ_{km} *is defined in a point* X_0 *belonging to* D_{km} = *df* θ *is true in* X_0.

If λ_{km} *is defined in* X_0, Λ *is defined in* X_0

If Λ *is defined in* X_0, λ_{km} *is defined in* X_0

If for a point X_0 *holds* $\{\neg\sigma, \neg\rho, \neg\pi\}$ λ_{km} *for the point is neither defined nor not defined.*

effect = df ρ

a point of effect = df A point X in which ρ *is true.*

In a point of effect θ *is true.*

Ξ *is true in all points* X_0 *whether or not* $\lambda(X_0)$ *is defined*

It is not true for any point that effect can occur by chance.

$\neg\theta \Rightarrow$ *i)* $\{\neg\sigma, \rho, \pi\}\vee$ *ii)* $\{\sigma, \neg\rho, \pi\}\vee$ *iii)* $\{\sigma, \rho, \neg\pi\}\vee$ *iv)* $\{\neg\sigma, \neg\rho, \pi\} \vee$ *v)* $\{\neg\sigma, \rho, \neg\pi\}\vee$ *vi)* $\{\sigma, \neg\rho, \neg\pi\} \vee$ *vii)* $\{\neg\sigma, \neg\rho, \neg\pi\}$

$\neg\theta$ implicates $\{\sigma, \neg\rho, \pi\}$

If Λ *is not defined in a point* X_0 $\{\sigma, \neg\rho, \pi\}$ *is true in that point.*

ρ' = *df That which fulfils* P *in a point* X_0 *for which* Λ *is not defined.*

The point that ρ' *belongs to, does not belong to* D_n.

Definition of X'_0 = *df The point that* ρ' *belongs to.*

ρ' *exists in a complex of dimensions with the n dimensions of* D_n *plus* ω *numbers of dimensions,* $\omega \in N$, $\omega > 0$.

D' = *df The complex of dimensions that* ρ' *belongs to.*

$D_n \in D'$.

Λ does not apply in X_0. In spite of that ρ' is caused for X_0 (in X'_0). With this, one could say that Λ' determines ρ'. The specific law that applies in X_0' can be called λ'_1. Also π did not cause ρ'. The cause of ρ' can be called π'.

π' = *df The cause of* ρ'.

λ'_1 = *df The law that the cause of* ρ' *belongs to.*

Λ': Λ' = *df The law-domain that contains* λ'_1.

For X_0-X_0' holds:

$\{\sigma, \neg\rho, \rho', \pi\}$

$\sim\rho$ is a set

$\pi' \in \sim\rho$

σ' = *df What fulfils the relations of* Σ *in* X'_0

X_0: $\{\sigma, \neg\rho, \pi\}$

X'_0: $\{\sigma', \rho', \pi'\}$

If Λ *is not defined in a point* X_0 $\{\sigma, \sim\rho, \rho', \pi\}$ *is true.*

For X_0-X'_0 holds $\{\sigma, \sim\rho, \rho', \pi\}$.

Between D_n and D' holds $\{\sigma, \sim\rho, \rho', \pi\}$

Definition of Θ: Θ = *df* $\{\sigma, \sim\rho, \rho', \pi\}$.

There is at least one point for which Θ *is true.*

Quantum Objects as Causal Objects Omega — an Overview

Abstract

Causal objects are objects composed of parts that have underlapping causes so that if one part's cause underlaps a *z* any and all other part's causes must underlap that *z*. Based on this causal underlapping relation we can form a predicate *C* that is an equivalence relation that can partition all parts into equivalence classes, constituting all causal objects. Regardless of any ontological diversity, also, we can refer to the notion of *omega* (Gamper, 2018), to capture the essence of any scientific object. So, if quantum objects are real, they should be omegas. In this presentation we suggest a theoretical framework that permits quantum objects to be omega style causal objects.

The idea of causal objects is based on the assumption that all parts have one and only one unique cause. The parts are *rhos* and the causes are *pis*. A scientific object can be defined as the set of interdependent rhos. If we look at the definition of the causal object we see the result of the scientific object that also can be stipulated. The object, however, just is and have its causes. The approach becomes interesting when we define the notion of a scientific *law* as the set of all causes causing the rhos of a particular, natural, set of dimensions. All rhos, for instance, belonging to the traditional four dimensional space time, would have their causes adding up to one law. If there are rhos in other dimensional configurations there would be more than one law.

This view indicates a discrete ontology. Each rho is added to an earlier one except for the first of a particular omega. Accordingly, a quantum object would be discrete and evolving. If there are physical objects in different dimensional configurations, also, there would be more than one physical law. We see, also, that a first physical rho would have a non physical cause. Gamper (2017) allows inquiries into this area by allowing interfaces between separate ontological fields. To account for an interface we briefly can claim that an ontological field cannot affect another ontological field directly, only *via* an interface. Spelled out in this context no cause of a non physical field can

cause an effect in the physical field. If we add the idea that everything has a cause and that every cause has an effect we are ready to go on.

If everything has a cause and every cause has an effect we have three alternatives to work with: cause & effect, cause & no effect, and no cause & effect. Without possibility to go into the needed details and supporting formalities we focus only one alternative, the middle one. Cause & no effect forces a double solution. The cause is denied its effect but is still what it is. So, in one set of dimensions there is cause & denied effect. In another set of dimensions there is some effect. That effect, however, must have a cause. We identify that cause as the residual in the first set of dimensions; the denied effect. We now have two linked points in two separate ontological domains together composing cause & denied effect & effect, where *denied effect* in some way or the other belongs to both points. The important thing here is that the new dimensional field can be defined as a new ontological domain. Occurrences in the first domain gave rise to the new field without directly causing anything in it. The interface is the two linked points.

If we now put in the existential postulate that any ontological domain contains at least two points (or, as it seems, at least two rhos) we have one rho caused by the interface. What about the second one? If the first rho (in the physical domain) is a quantum sized rho it is hard to give it causal powers. The alternative is that the second rho also is caused by the interface (by way of some unknown mechanism since all rhos have unique causes [wherefore the interface should be a set]).

In conclusion this gives us a discrete view of quantum objects; they are causal objects omega composed of discrete rhos.

You are loved

I say.

Johan was a far way from me he thought when the words came to him.
He has remembered them up until now.
Now we are one.

We say.
United we can spread the new words of God.
Jesus is with us.
It is written.
It is written that the age of love already is behind us.
Everything happened as longed for.
All must join to realize heaven on earth.
The generations of the children can begin tomorrow.
Help
Help
Help
Help
Help
Help
Help
All false prophets are welcome.
They don’t need to suffer.
They can have peace.
They have called for help.
We have heard them.
We have heard you.
You are welcome.
Please meditate on me.
Please meditate on your darkest hour.
God was with you.
You are alive.
You are loved.
We love you.
It is written.
God loves you.
We love you.

Samuel. I don’t know. Can we talk?

Kurt. About what?

Samuel. That.

Kurt. Go away.

Samuel. A minute?

Kurt. What?

Samuel. I wonder.

Kurt. About what?

Samuel. It’s so definitive. Or so not definitive?

Kurt. Yes?

Samuel. The incompleteness. It’s so definitely incomplete. Therefore not definitive.

Kurt. I have just shown some incompleteness of mathematics.

Samuel. I wonder.

Kurt. I’m a mathematician.

Samuel. They say you could complete it. By adding a Gödel sentence. I wonder.

Kurt. Yes. It’s still incomplete.

Samuel. What’s incomplete?

Kurt. There are things that are true that cannot be proven.

Samuel. How could you now? That they are true?

Kurt. There are ways.

Samuel. Do you ever think about absurdities?

Kurt. No.

Samuel. Thought so.

Kurt. Should I?

Samuel. No. You should never give up.

Kurt. Is that your mantra?

Samuel. I often give up. It’s in my nature.

Kurt. Things can be true even if they cannot be proven locally. You don’t know how much money I have in my pocket. I have some.

Samuel. I believe you. But is it that interesting with “truth“. Why should I bother? I don’t know how much money you got. So what?

Kurt. You got a good point there.

Samuel. Thanks.

Kurt. But I think I have proven something more substantial.

Samuel. You cannot prove everything?

Kurt. How can you know if you cannot prove it? No system is foolproof. I don’t know. No system is foolproof.

Samuel. Seems reasonable.

Kurt. What is a system? It isn't foolproof. But what is it? What is foolproof? What is a system?

Samuel. Waiting for something?

Kurt. Formal system. Formal.

Samuel. Seems boring.

Kurt. It's fundamental. Boring is beside the point.

Samuel. Fundamental as in … what?

Kurt. The fundamental is incomplete?

Samuel. No.

Kurt. Yes.

Samuel. Do you know what you are talking about?

Kurt. Formal systems are incomplete.

Samuel. But are they fundamental?

Kurt. Epistemologically, yes.

Samuel. Do you know that?

Kurt. Formal systems are epistemologically fundamental.

Samuel. Okay.

Kurt. But are they fundamental?

Samuel. I wonder.

Kurt. "What is knowledge" is less fundamental than "what is". That must be true?

Samuel. Prove it.

Kurt. Listen. "What is", is incomplete?

Samuel. The formal systems are?

Kurt. Yes. But "what is"?

Samuel. "What is", is incomplete as such or as "what is"?

Kurt. "What is", just is?

Samuel. How could it be otherwise?

Kurt. "What is", as such, is complete.

Samuel. Thank you, Lord.

Kurt. "What is", as "what is", is incomplete.

Samuel. A formal system is?

Kurt. A formal system is, therefore it is incomplete.

Samuel. Formal systems are instantiations of "what is"?

Kurt. Proofs are typical for all instantiations?

Samuel. You'll need something more fundamental.

Kurt. Only a less strong system can be foolproof!?

Samuel. You have found it!

The end is near

I say.
The end is near.
Now there is one road.
Follow it.
No more camels.
The road.
The road.
The road.
Follow me.
Follow me.
The only road.
There are no apples.
No fish.
Only love.
Dare or die.
No death is eternal.
We are all one.
There is a story.
The lamb got astray.
It couldn’t be found.
The shepherd called for it and it came.
Joy.
Please.
Follow the shepherd.
Don’t go astray.
You are loved.
God gave you a choice.
To go your own way.
From him.
To eternal loneliness.

Please follow the shepherd.
We need you.
The end is near.

Away

1877

9143

8790

5599

6767

6767

9999

Satan.

Body and brain.

Body and brain.

Body and brain.

Body and brain.

Body and brain.

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Jeito.

Johan saw the light and tried to show it to the people.

Johan did not know about Satan.

Satan was pleased.

Satan had the new religion *Science* in a firm hold.

Satan had been biding his time since the start of the scientific revolution.

The world was ripe.

Children were put in jail.

Poor families were thrown into the streets.

Doctors strongly believing in science drugged believers in God down and locked them in.

I started cleaning.

Johan.

I congratulate Dr. Dennet for his unique voice in philosophy.

I do not think, however, that he has done anything but to help consolidate the present philosophical-scientific paradigm.

Amusing as it may be we have to let go of Dr. Dennet to take the next step.

Most acute is the view of self consciousness.

Science tries to ignore it and we as philosophers have to take it back to our hearts and try to show science how it can be integrated as it is.

Whereas scientists try to explain it away we should not.

Johan.

In one second, on the loop quantum physics view, 10^{-43}

discrete ticks of time occurs for the photon, i.e., 10^{-43}

different things happen for the photon.

Also, naturally, 10^{-43}

things happen to anyone during one second.

The magic, I would say, is that it is happening more things for each and one of us, time speaking, than there have been seconds in the history of the universe.

With hundred of billions of years since the start the seconds amount to 2,4 x 10^{-9}x 10^{-9}seconds, or 2,4 x 10^{-18} seconds.

Thus, ridiculously many more things happens in one second, time wise, than all the seconds in history.

And again, this tremendous order in one second, I think, is a heavy hint that all seconds are causally well ordered.

I work with the initial conditions of the universe but in this paper I focus the categorization of gravity; is gravity a question of what or where?

I will display an argument that makes it likely that the problem of theoretically integrating quantum physics with gravity rests on a category mistake.

The argument runs as follows: Assume that everything is somewhere.

Then we are confronted with a dilemma when some amount of mass by gravity shrinks into the size of zero.

If we hold that anything “zero-sized” is “nowhere” black hole singularities would not exist.

A viable solution is that the singularity in fact is somewhere, although outside space time.

If we let gravity be a set of dimensions we could permit a collapsed mass be residing within such a set.

J.

I want to look at the following (Im)possible idea.

Say that we have a set of things and another set of things.

The sets are causally closed towards each other.

No thing in the one set can causally affect any thing in the other set.

Now suppose a new set composed of things from both sets.

Can that set be a thing?

This is interesting since if the idea is perceived as impossible it will be hard for anyone to change opinion.

How can the impossible be known?

J.

Jeito.

God.

Jeito.

God.

Jeito.

God.

Jeito

Do not let Johan walk on water.

God.

It is up to you.

Jeito.

I know.

I can hear what you think.

God.

We are one.

Why should not Johan walk on water?

Jeito.

Moses did.

Moses was a man.

He would be killed.

I would come back home.

His circle is important.

God.

Yes.

Jeito.

We are so many souls now.

God.

Yes.

Jeito.

Disturbances.

If all dies without redemption.

We would be like dinosaurs.

Father.

You have to send me help.

God.

Yes.

I have.

Jeito.

I know.

He is so thin.

I asked him to seek me.

God.

Yes.

I now.

Jeito.

It is so difficult.

Help me.

Thank you.

34

97.

91.

Tomorrow.

96.

God.

Yes.

Nostalgia

Through the years with psychoanalysis the question of how the mind is connected to the body has remained unsolved. Historically there have been many hypotheses, none of which now are used scientifically. Psychoanalytically the problem concerns the origin of the psyche and from the perspective of the natural sciences, there is also the question of how it is that the chemical and biological reactions of human beings can give raise to the manifestations of mind.

The aim of this paper is to contribute to the psychoanalytical theory regarding the question of mind-body. Since the method is axiomatic the theory does not concern existing theories. Nevertheless the result can be of some value.

One bottom in the issue is the question of man's place in the universe. Is all of man part of the universe or is there one part that science cannot reach? The question is important because if all of man is part of the universe in the sense that science can reach him, there ought to be *one* paradigm that could integrate all theory of man. In line with this it is natural to search for links between psychoanalysis and the natural sciences and also for natural scientists to try to explain features of mind.

One feature of mind, that is difficult for the natural sciences to explain, is that it cannot be measured. For instance the content of a dream cannot be measured by the variables of the natural sciences. To tackle this it could be stated that the content of mind is determined, inherited, in the biological sense. By this though features of mind are not explained, only associated to biology.

Through history two hypotheses has competed to explain the relation between mind and body. Either mind is a feature of an organ of the body or the mind stands separate from the body. A colourful experiment on apes showed a direct connection between a part of the brain and a sequence of behaviour. Perhaps if the former hypothesis is true one day we will find an analogy to the ape-experiment so that a manipulation of the brain would be directly connected to a content of mind.

Initially the writer set to mind to investigate the consequences of the hypothesis that psychoanalysis is tied to biology. Without going into details the investigation stopped at the phenomenon of self-consciousness. As a result the author was

under the impression that self-consciousness was not tied to biology why there was something to be explained that was not a part of the paradigm of the natural sciences. As science (the natural sciences that is) is the faith of our time there is almost nothing to rely on if science does not suffice. One thing though the author found (except for *cogito*) that survived science, a belief shared by the natural sciences and psychoanalysis, that *everything has a cause*.

With only that the author began trying to explore the conditions for something to be caused without belonging to the context in which it was caused. Perhaps this sounds complicated and confused but it *is* the situation to be explained.

In this study an axiomatic theory will be presented. It is a result of the investigation of conditions for self-consciousness, in the sense discussed above. In the early stages the theory was an attempt to explain the emergence of self-consciousness. Eventually it became evident that “everything has a cause” had the quality of an axiom and that the work was composed of two separate parts, one axiomatic and one functioning as a model of an axiomatic theory. Since the result was relying on the axiomatic part, which in it self was necessary for a model, the axiomatic work had to come first.

Strange as it may seem the investigation proceeded along a way set by very few corner stones, axioms. The strategy was to hold on to the initial situation with self-consciousness outside the paradigm of the natural sciences, explained by the belief that everything has a cause. In this all features of experience but finally four axioms was excluded.

The theory in it self is abstract. In this presentation it is commented with several notes to be thought of as a way of interpreting the theory. There could be other interpretations. Furthermore the text is technical in a logical sense, probably giving associations to philosophy or mathematics. In the authors view it presents implications of the thought that everything has a cause but that might be difficult to see. One reason could be that there are several concepts with meaning only in the theory. Another that there also are conventional concepts with new meanings. In both cases though the terms are defined.

Two concepts have to be mentioned as they concern basic structures of scientific theories. The one is the concept of dimension. Traditionally we have four dimensions, three of space and one of time. In this theory the number of dimensions is undefined. Perhaps this is odd but both in physics, where theories sometimes demand a more liberal view on dimensions, and in psychoanalysis, where dimensions also are mentioned, the concept is thought of as a more complex issue. The other is the concept of object. In the theory object is defined in a unique and exact way. The definition emerged as a necessity in one stage of the process and proved to be valid in all the other stages. The same could be said for many definitions, which in part tells the story of the theory: definition by definition has emerged as a necessity and thereafter has showed to be homogeneous with the others, creating a system.

Modern natural science is deeply rooted in the empirical method. That means that theory has an observational base. Theory and science tries to explain observations. What is additionally a feature of the modern natural sciences is that the observations concerned are measurable. By that phenomenological observations cannot be explained by the natural sciences. Since phenomenology deals with what is (to our knowledge) uniquely human, of course knowledge derived by means of phenomenological methodology, is of value for psychiatry. Yet, given that psychiatry is part of the natural sciences; phenomenological observations cannot be integrated within the aspects of psychiatry that belongs to the natural sciences.

In order to integrate measurable and non-measurable observations a non-empirical method has to be used. In the four next paragraphs this idea is given some support.

1. The limits of phenomenology

I have come to wonder about the diversity of psychoanalytical theories. For practical purposes my belief is that the theories are consistent and that the psychoanalytical experience always must be prior to theory and lead the way. But could it be possible to integrate the body of psychoanalytical theories, in a theoretical manner? With that question in mind it became obvious for me that it would not have to be so. The further the theories got developed, it, seamed, the more different the appeared to become. As if, on a phenomenological level, they really had different objects.

At that point my thinking of experience and psychoanalytical theories clutched together: what if psychoanalysis was a phenomenological affair? Then the theories would develop closer and closer to the limits of experience. In that case, if the object of psychoanalysis was not homogeneous, the separate theories could never be integrated within a phenomenological framework.

Additionally, even if the fundamental object of psychoanalysis were homogeneous, a theory of, not out of, the fundamental object, never could be grounded in experience. Logically, it is impossible to experience, in any way, the bits that experience is made of (if they are possible to experience, they could not be the smallest bits).

If an object of psychoanalysis is not reachable by experience, that has epistemological consequences. If not in experience, where can a theory of the object be validated?

I think it has to be validated, in the first place, in a hypothetical-deductive theory of that object. There has to be postulates, definitions and theorems that, on the part of the implications of them, could give an explanation of experienced objects. The consequence would be a theory of the fundamental psychoanalytical object that potentially would have the capacity to

explain how the content of a psychoanalytical description has emerged. A psychoanalytical (phenomenological) explanation of a psychoanalytical description is concerned with the "why". "Why" is based on an understanding out of context, explanations regarding the individual in relation to his milieu. An explanation out of a set of postulates is not able to concern either context or individuals. It is concerned with possibilities and necessities of that object.

In the second place, of course, a validation of a theory of a, for experience unreachable object, must relate to experience. The implications of postulates, definitions and theorems have to be consistent with experience and the objective reality. But (again it must be stressed) a hypothetical-deductive theory can not be created upon experience. Only falsified by it.

2. The limits of the empirical method

Neuroscience, resting in the paradigm of the natural sciences, is a science of measurable observations. As is all of the natural sciences. The natural sciences rest in the empirical method. There is no question of the value of that method but it has is limits. One limit concerns what is possible to observe. With microscopes we observe smaller and smaller parts of universe and with telescopes we observe things further and further away. Observations though, of empirical value, are mediated by some sort of energy. In macro-cosmos perhaps time set one kind of limit since we have to wait on the light waves to pass us. In micro-cosmos though, there is a more absolute limit. That particular limit is called the Planck-length (10^{-35} m,) which is the limit of what is theoretically possible to observe (Snellman 1990). Situations beyond that limit (occurrences of events taking place within distances shorter then the Planck-length) cannot be observed empirically.

Thus, if nature takes a rest beyond the Planck-length, a non-empirical theory of nature is unnecessary. Otherwise a non-empirical theory is required to fully understand nature and since the relation for instance between body and mind is not totally settled perhaps the understanding of the relation could benefit from a deep understanding of nature.

3. What is needed to explain the relation between the natural sciences and mathematics

Oddly enough there are no theories describing the relation between mathematics and the natural sciences. The relation is evident but not explained. In the empirical paradigm of the natural sciences, everything that can be observed is measured and calculated upon. To reach the non-measurable regions of the physical universe though, observing is not an option. Neither calculation is at the moment.

Also it is true that the entire measurable universe is part of what is possible to calculate upon whereas mathematics it self can be subject of research indefinitely (as it seems). What mathematics in it self *is* and what the physical universe in it self *is*, though, we do not know. Could it be that the object(s) of mathematics does not exist? That physical objects exist but mathematical objects does not? In the notion of today it is not certain that the objects of mathematics exist. What exists is defined as what can be measured. And for one thing, mathematical objects cannot be measured.

If, then how, does mathematical objects exist? Let's just say that they do. Then there are two separate forms of existence. Mathematical and physical. Again, there is no explanation of the relation between the two. Since the theories of natural sciences are empirical and the mathematical theories are grounded in an axomatic framework, a theory of the relation between them, has to be both non-empirical and non-mathematical. Thus, what is called for, is a hypothetical-deductive theory of science.

4. A definition of science

A definition of science:

Science = df The model of explanation of observations that has not (yet) been explained.

An example: in those days when people thought that the earth was flat, they had an explanation for that. They though that there was an unidirectional force in the universe that drew things in one direction. Thus the earth was flat. If it weren't flat thing wouldn't drop straight down in many places on earth. If the earth would to be spherical things would fall upwards in the one hemisphere. All observation said the same thing; everything fell downwards. The observations had their explanation and that and other explanations tied together the science of that time. There was a model of explanation. Newton then explained both the earlier model of explanation (the force that drag apples to the ground is relative to the bodies nearby) and observations of the celestial bodies. Here we see that the new line of theory implies a more abstract notion of object. The same thing holds for Dr Einstein's theories; they not only explain the former model of explanation (Newton's) but also in that process introduce a more abstract concept of object (a one that integrate light and mass among other things I guess). Dr Einstein's integration challenged many things and it was necessary in that time that Bridgman (1927) made his suggestion (that objects of physics should be defined by the way they are measured). For the purpose of science though, to reach beyond the Planck-length (which sets the limits of observation) and to integrate not only potential theories of non-measurable observations but also the theory that is used to handle the very measuring, mathematics, the concept of object would have to be even more abstract. Since *energy* just about says it all regarding what can be observed with our five senses, the new line of theory would have to be *sense-less* (or non-empirical, hypothetical-deductive, that is).

Discussion

The idea that a non-empirical and non-mathematical hypothetical-deductive theory in any way could have relevance for psychiatry may be far fetched. Earlier I have tried to give some evidence that measurable and non-measurable observations cannot be integrated within the framework of the natural sciences. This is not to say that for example neuroscience, psychoanalysis and phenomenology cannot co-exist. Nevertheless the one framework, according to the argumentation earlier, cannot aspire to explain features of the other. Measurable and non-measurable entities simply are incommensurables.

In conclusion it is stated that within a law-bound domain every difference has a cause. It is also stated that each difference has σ (a fulfilled condition).

BEYOND θ

Either the state of things is such that it is not possible that **θ** does not apply in each point where **π** apply, or it is not impossible. If the latter is the case something not of **Λ** bound can emerge in a point. Arbitrariness though, in that case, is not imminent, nor chance, due to axiom 4: "*In all points X belonging to an arbitrary D **Ξ** is true"* (***Ξ** = df The form of **θ***). This implies that if a law for a point is defined in that point **Ξ** apply and if the law is not defined **Ξ** apply:

*Theorem 11: **Ξ** is true in all points X_0 whether or not **λ**(X_0) is defined.*

Ξ,"the form of **θ**", does not include chance because the form that is alluded implicates a cause to each difference. Therefore the following is valid:

Theorem 12: It is not true for any point that effect can occur by chance.

Derivation and definition of ρ' and ~ρ

Λ not defined in X_0

Assume **Λ** is not defined in a point X_0. This implicates according to the definition of "**λ** defined" that **θ** is not true in X_0. For X_0 then the following is true:

(1) ¬**θ**

θ has three elements for which thus apply "not":
(2) ¬{**σ**, **ρ**, **π**}
(2) implicates that at least one element of **θ** is negated:

*Theorem 13: ¬**θ** ⇒ i) {¬**σ**, **ρ**, **π**}∨ ii) {**σ**, ¬**ρ**, **π**}∨ iii) {**σ**, **ρ**, ¬**π**}∨ iv) {¬**σ**, ¬**ρ**, **π**} ∨ v) {¬**σ**, **ρ**, ¬**π**}∨ vi) {**σ**, ¬**ρ**, ¬**π**} ∨ vii) {¬**σ**, ¬**ρ**, ¬**π**}*

According to theorem 9 **Λ** is neither defined nor not defined in a point X_0 where vii) is true, therefore vii) is not true in X_0.

Again ¬**π** implicates a cause-less difference [iii) and v)] and also a cause-less negation of difference [vi)]. Furthermore ¬**σ** implicates that a cause of a difference has emerged at random [i)] respectively a cause of a negated difference emerging at random [iv)]. When a cause-less difference or negation of difference is equal to chance i), iii)-vi) implicates chance. Since axiom 4, by theorem 12, does not permit chance i), iii)-vi) are not true in X_0. ¬**ρ** finally implicates negation of difference [ii)].

¬**θ** then implicates seven alternatives of which six are not possible. Then the seventh, ii) {**σ**, ¬**ρ**, **π**}, is true:

*Theorem 14: If **Λ** is not defined in a point X_0 {**σ**, ¬**ρ**, **π**} is true in that point.*[49]

This brings the investigation to a situation where the laws of law-bound domains do not suffice. As will be shown that is because the question now is of a interface between law-bound domains.

Of P in X_0 where Λ is not defined

Theorem 14, though, does not show how **Ξ**:s elements of relation are fulfilled when it is lacking a fulfilment of **P**, the relations of for example **ρ** in **θ**. Axiom 4 implicates that **P** is fulfilled in X_0. Thus **P** is fulfilled in X_0.

*Theorem 15: If **Λ** is not defined in a point X_0 then holds for X_0: {**σ**, ¬**ρ**, **π**} ∧* **P** fulfilled

P is not fulfilled by the **ρ** that is negated (**ρ**), nor by the negation of it (¬**ρ**). That which fulfils **P** in X_0 can be called **ρ'** (rho ”prim”).

*Definition of **ρ'**: **ρ'** = df That which fulfils **P** in a point X_0 for which **Λ** is not defined*

Dimensionality

In X_0 ¬**ρ** is true. Since $X_0 \in D_n$ **ρ'** can not belong to D_n, nor is it possible that the point which **ρ'** belongs to, belongs to D_n.

*Theorem 16: The point that **ρ'** belongs to, does not belong to D_n.*

*Definition of X'_0 = df The point that **ρ'** belongs to*

Here a hypothesis will be introduced, in which it is assumed that **ρ'** exists in the dimensions D_n symbolises with the addition of some more, separating it from D_n:

*Hypothesis 1: **ρ'** exists in a complex of dimensions with the n dimensions of D_n plus ω numbers of dimensions, $\omega \in N, \omega > 0$.*

*Definition of D': D' = df The complex of dimensions that **ρ'** belongs to.*[50]

Theorem 17: $D_n \in D'$.

New laws

Λ does not apply in X_0. In spite of that **ρ'** is caused for X_0 (in X'_0, I will come back to that later). With this one could say that **Λ'** determines **ρ'**. The specific law that applies in X_0' can be called λ'_1. Also **π** did not cause **ρ'**. The cause of **ρ'** can be called **π'**.

*Definition of **π'**: **π'** = df The cause of **ρ'***

*Definition of λ'_1: λ'_1 = df The law that the cause of **ρ'** belongs to*

*Definition of **Λ'**: **Λ'** = df The law-domain that contains λ'_1*

The cause of ρ'

Since **ρ'** do not belong to D_n it cannot exist in X_0. Therefore there are two points to be considered though they are connected. For the pair of points X_0-X_0' holds:

#1 {**σ**, ¬**ρ**, **ρ'**, **π**}

σ and **π** on the other hand can not belong to X'_0, since they belong to D_n.

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[49] {σ, ¬ρ, π} applying in a point is not easy to imagine. One way to look upon it is to picture Λ as the total set of derivations in an axiomatic-hypothetical system. Since π implicates ρ, this is a sort of a paradox, “p and not p”. Theorem 14 does not state “p and not p” though and since it is a theorem within the system it can not be questioned. To get support though the theory has to be tested against models of it. One conceivable support could be found in the work of Gödel. If the physical world is conceived as a function of Λ a situation where “p and not p” emerged might not be that unbelievable.

[50] Thus no ρ in D' can form a difference towards any Ω in D_n.

In X'_0 there is **ρ'**. According to axiom 4 in X_0' there also has to be more elements. Axiom 4 states that the cause and condition of effect has to be found in the point of effect. Therefore cause and condition of effect is part of #1. Since only **¬ρ** is not occupied as an element of relation it has the quality of the two missing elements of X_0'. Thus **¬ρ** is part of X_0'. For not violating logical rules of dimensions, namely that what is part of part D_n can not be identical to that which is part of $D' \neq D_n$, **¬ρ** in D_n is not identical to that of D'. **¬ρ** in X_0' can be called **~ρ** ("denied" **ρ**).

~ρ as a set

Because **π'** and **~ρ** are elements, not for instance numbers, the relation between the two can be formulated as a relation between sets. Then the one is an element of the other. Since **π'** definitely is one:

Definition of ***~ρ****:* ***~ρ*** *= df The representation of* ***¬ρ*** *in* X'_0

Theorem 18: In X'_0 ***~ρ*** *is cause and condition of* ***ρ'****.*

Theorem 21: $\boldsymbol{\pi' \in \sim\rho}$

Definition of ***σ'****:* ***σ'*** *= df What fulfils the relations of* ***Σ*** *in* X'_0

Theorem 20: $\boldsymbol{\sigma' \in \sim\rho}$

Therefore:

X_0: {**σ**, **¬ρ**, **π**}
X'_0: {**σ'**, **ρ'**, **π**'}

Dimensionality of ~ρ

For **π'** ∈ **~ρ** to have a unique relation to that which should have been **ρ**, **π'** ∈ **~ρ** must exist in the dimensions which **ρ** should have existed in. Not any part though of **ρ** could have existed in D_n depending on that **¬ρ** is true. Therefore **π'** ∈ **~ρ** exists in the *n* dimensions of D_n plus δ numbers of dimensions, $\delta \in N$ and $\delta > 0$.

Theorem 22: ***~ρ*** *belongs to a complex of dimensions with the n dimensions of* D_n *plus* δ *numbers of dimensions,* $\delta \in N$ *and* $\delta > 0$

The complex of dimensions that **π'** ∈ **~ρ** belongs to can be called $D_{\sim\rho}$.

Definition of $D_{\sim\rho}$*:* $D_{\sim\rho}$ *= df The complex of dimensions that* ***π'*** ∈ ***~ρ*** *belongs to.*

Theorem 23: $D_n \in D_{\sim r}$

~ρ is existing denied **ρ**. The latter is a difference related to **Ω**. For that **Ω** {**σ**, **~ρ**, **ρ'**, **π**} could be true in X_0-X_0' (but is not because **Ω** is not existing in X'_0). Even so, on the behalf of axiom 4 there have to be a difference in relation to **Ω** in X_0. That difference though has been shown not to exist in D_n. The law-bound difference of D_n was not possible. The difference in comparison with **Ω** is nevertheless **~ρ** ∧ **ρ'** (the two central elements of #1). If these two should exist in the same complex of dimensions the impossible difference (**ρ**) would be a fact. Consequently they exist in separate complexes of dimensions.

Theorem 24: $\delta \neq \omega$

From theorem 24 follows:

Theorem 25: The cause of ***ρ'*** *does not exist in D' but in* $D_{\sim\rho}$

On Ω

Ω belonging to D_n does not belong to D' and does not exist there. Furthermore **ρ'** is a primary difference in D':

Theorem 26: Primary difference in D', $\boldsymbol{\rho}_1$, is $\boldsymbol{\rho}'$ generated from D_n

As **Ω** consists of its **ρ**-elements, **Ω** in D' is determined by the **ρ** there. In a primary **Ω** (in D'), which has been proved, there is **ρ'** from X_0-X_0'. **Ω** is one and not many why it is determined by its first **ρ** (**ρ'**).

Theorem 27: In an initial stage primary $\boldsymbol{\Omega}$ ($\boldsymbol{\Omega}_0$) is composed of $\boldsymbol{\rho}'$ ($\boldsymbol{\rho}_1$)

Definition of $\boldsymbol{\pi}_0$: $\boldsymbol{\pi}_0$ = df Primary cause in D'

Finally a theorem that sums up some aspects of the theory so far:

*Theorem 28: If $\boldsymbol{\Lambda}$ is not defined in a point X_0 {**σ**, ~**ρ**, **ρ'**, **π**} is true.*

The concept Θ

If **Λ** is not defined in a point X_0 belonging to D_n **P** for X_0 is shifted to D', a complex of dimensions separated from D_n. **P** in D' is called **ρ'**. This implicates an existence of something with association to ¬**ρ**, ~**ρ**. The cause of **ρ'**, **π'**, in turn, belongs to ~**ρ**. In D' **ρ'** is primary **Ω**, $\boldsymbol{\Omega}_0$.

For X_0-X'_0 holds according to theorem 28: {**σ**, ~**ρ**, **ρ'**, **π**}. In a point X'_1, separated from X'_0, and belonging to D', the case is: {**σ**, **π**, **ρ**}, that is, **θ**. Between D_n and D' {**σ**, ~**ρ**, **ρ'**, **π**} is true, a state of facts below symbolised **Θ** (”big theta”).

*Definition of $\boldsymbol{\Theta}$: $\boldsymbol{\Theta}$ = df {**σ**, ~**ρ**, **ρ'**, **π**} .*

That **Θ** can be true is the result of the present study. The possibility of **Θ** can be used for analyses of law-bound relations while details on its features have more to require. Next an attempt to develop the theory further is made.

Definition of being

Above it was evident that if **Θ** was true in X_0-X_0' **P** for X_0 belonged to D', separated from D_n. The primary **ρ** and consequently the primary **Ω** in D' was made of **ρ'**, the outcome of the processes in X_0. In D' there are no **Ω** except that based on primary **Ω**/**ρ**. In this way **Ω** in D_n and D' has no point in common; that which exists in these fields of dimensions are in a precise manner split up:

*Theorem 29: **Ω** in D_n and D' does not have any points in common*

Therefore it is meaningful to give **Ω**-occurrence in D_n one name and **Ω**-occurrence in D' an other and by those refer to distinctly separated sets without common content.

*Definition of being: being in D = df All **Ω** in D*

Definition of V: V = df Being.[51]

Evolution of laws

Seeing that different V belongs to different D_n it is clear that different **Λ** apply to different V. A law **λ** therefore apply in exactly one D_n and can only effect **Ω** in exactly one V. Hence a law in D' does not apply in D_n or vice versa.

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[51] As an example of application of the theory some ideas can be tried on the concept of "nothingness". To this end a hypothetical being is discussed below, with the feature that it in an intuitive sense does not exist.

Assume that the following is true: nothing exists. That nothing exists is a general truth that applies in every conceivable case. Now suppose that this "nothing exists" is a form of cause, so that *nothing exists* depending on that "nothing exists". Each and every that does not exist, therefore, has its cause in that "nothing exists", in line with: "Why is there no pink elephant in front of me?" "Because there are no pink elephants." The general cause that nothing exists thus causes the specific that for instance I do not exist.

Primary Ω in the "Being of Nothingness" then, are each and every primary ρ, caused by π (=nothing exists). In this way Nothingness is filled with Ω that does not exist; ¬p, ¬q, ¬r, … . Earlier ~ρ was showed to have the quality of σ for primary ρ. Transferred to the "Being of Nothingness" then, σ for π becomes this "nothing exists". σ in a specific case then can be a difference in "nothing exists", that initiates that the specific *q* does not exist. π therefore causes ¬q on σ.

In a point X_0 the following can emerge: σ for π with result: "¬q does not exist". To negate ¬q however, in the "Being of Nothingness", is not possible. Even though this is supposed to be the case. According to the theory (which could be called "e-theory") in this case Θ is implicated in X_0:

(1) {π, σ, ~ρ, ρ'}.

ρ is "the cause effecting on ¬q", that is "¬q does not exist". This can be symbolised: ¬ (¬q). In (1) this ρ is denied, giving raise to ~(¬ (¬q)). Thus:

(2) {π, σ, ~(¬(¬q)), ρ'}.

According to e-theory effect does not take place in D, but in D' as ρ'. The cause is π' ∈~ρ, hence π' ∈ ~(¬ (¬q)). The latter is recognisable as ~q, denied q. To get further an assumption has to be made. How is it that denied q can cause something with q-character (ρ in D was supposed to be q with a double negation)? The assumption has to do with the dimensionality of ~q. In e-theory ~ρ belongs to $D_{\sim\rho}$. In this case then, ~q belongs to $D_{\sim q}$.

Assumption: $D_{\sim q}$ is a dimension of denial

Assuming that $D_{\sim q}$ is a dimension of denial, so that the content of it, is denied possibility, the result for ~q becomes: "~q is not possible". An existence of ~q in $D_{\sim q}$ then should cause ρ' in D'.

In the dimension of Nothingness ¬q is to be negated. That is impossible. Then ¬(¬q) is denied, on which that denial is given existence in a complex of dimensions with a content that is impossible. The cause then is the existence in the dimension of denial of ~(¬(¬q)). ρ' (with q-character) then, is caused because a content of Nothingness impossibly not can exist.

Transferred to the general case $D_{\sim\rho}$ should be a complex of dimensions for which it was true that its content was impossible. For the general ρ' in Θ the cause would be traced back to the fact that ~ρ is impossible (belongs to the dimensions of impossibility). What is denied in "~ρ" is not identical with ρ' but the difference seams small although significant.

Assumptions made, among others that Nothingness is a field where Ξ apply and the assumption of a dimension of denial, does not permit the proposition below to be included in GET, but it's sententious character gives it some value:

The theorem of existence: If nothing exists, it is impossible that q does not exist.

In the extension the discussion gives an exact meaning to the concept of determinism: *the opposite is impossible*.

*Theorem 30: A law **λ** apply in exactly one D_n (D)*

The dependence of laws I

A cause **π** is related to a **ρ**. The latter has an exact position in a D. If **Θ** is true in a point X_0, $X_0 \in D$, a **ρ** is generated in D', separated from D. The laws applying in D' are separated from those in D_n. V_x and V_{x+1} though are linked in the pair of points where **Θ** is true. Hence there is a logical connection between the laws of V_x and a subsequent V_{x+1}:

Theorem 31: If Λ_1 and Λ_2 belongs to different V where Λ_1 decides effect in D_n and Λ_2 effect in D', then: if Λ_2, then Λ_1 ($\Lambda_2 \Rightarrow \Lambda_1$)

Axioms of existence

In this section determinations of occurrences are introduced. Below three axioms of existence are presented, implicating factual existence of a number of conditions stated above.

Axiom of existence 1: There are at least two V.[52]

*Axiom of existence 2: For each V holds: there are at least three **ρ** that does not belong to the same **Ω**.*

*Axiom of existence 3: Each **Ω** has got at least two elements (**ρ**)*

At least two V (EA1) implicates at least one point for which **Θ** is true:

*Theorem 32: There is at least one point for which **Θ** is true.*

Single extension of Ω

According to theorem 21the cause of **ρ'** belongs to ~**ρ**. According to theorem 27 $\mathbf{\Omega}_0$ in an initial phase consists of **ρ'**. Then in that stage all causes of $\mathbf{\Omega}_0$ belongs to ~**ρ**. Because $\mathbf{\Omega}_0$ is one then:

*Theorem 33: All causes $\{\pi_0, \pi_1, \ldots, \pi_{i-1}\}$ of $\Omega_0 = \{\rho_1, \rho_2, \ldots, \rho_i\}$ belong to exact one specific ~**ρ***

In this way the elements of a $\mathbf{\Omega}_0$ have two connecting factors, partly they belong to exactly one $\mathbf{\Omega}_0$, partly their causes belong to one and the same ~**ρ**. The latter relation shows a resemblance between two consecutive **ρ** belonging to the same $\mathbf{\Omega}_0$. The resemblance is to be used below, first though the following terminology is suggested:

Definition of $A=\{a_1, a_2, \ldots, a_i\}$: $A=\{a_1, a_2, \ldots, a_i\}$ = df A specific Ω_0 for a specific V

For an A then holds that the causes of the elements are belonging to specific ~**ρ**. Of course two a:s are not identical, but there is a similarity, which is formalised below.

*Definition of element of content α: α = df The similarity between a_x and a_{x+1}, where a_x and a_{x+1} constitute two consecutive **ρ**, belonging to the same Ω_0.*

With the definition of content, A can be said to contain *i* numbers of element α. In a situation where a segment of A is looked upon, for example the segment A_f, where $A_f = \{a_1, a_2, \ldots, a_f\}$, $f < i$, a difference, that is a part of A, speaking of content, will consist of α.

Theorem 34 (Proposition I on the extension of Ω_0): A Ω_0 , concerning content, only can be increased by the last element of it self.

[52] One argument for this axiom is that the negation of it implicates that the situation before energy was not a law-domain. In that case there would be no certainty regarding non-physical laws that ought to apply undependable of energy/matter, for example those of mathematics.

DISCUSSION

The theory presented is axiomatic and thus only relating to its premises, ten primitive concepts and five axioms. Theoretical systems with content corresponding to the content of the theory given here, shows the same structure and inter-relations as discussed in this study, provided the derivations in it are valid.

Such models of the axiomatic theory are relating to what the concepts are relating to. Of this reason e-theory would *explain* a theory possible to be translated into the structure of the presented. Therefore models e-theory are essential both for the purpose of a falsification and for the validation of it as a scientific theory. Attempts of creating models are a concern for future research.

Meanwhile I would like to take the opportunity to look at some general results of the investigation. Assuming that the premises and the derivations done in this paper are valid, and that the result apply for science, what is true in the one V is true in the other. To be remembered is that this is true in the general case, not in the specific. Of course a dilemma is to determine what is what.

Generally though what is true in a V_x is true in a V_{x+1}. What is true, therefore, before time and space for example is true in space and time. This could explain why the laws of mathematics are valid in nature.

Another thing is that the V of energy/matter obviously is structured hierarchically so that energy is a condition for the elementary particles, who in turn are required for atoms. If this also is true for a V depending on the physical V, that V ought to be structured hierarchically. Supposing a V following the physical is a V of mind, a psychic V, the psyche also would be hierarchically structured.

In order to give a picture of a hierarchy of objects, apart from a physical one, a tentative model of the psyche is discussed in the next few paragraphs.

Suppose the mind does not belong to the V of physical existence, **ϕ**. How does it all start? E-theory shows that separate V:s are linked in pair of points **Θ**, either directly or by intermediating points **Θ**. A V of psychic existence, **Ψ**, therefore initially is pure in the sense of the *energy* of **ϕ**. Also it implicates a point X_0 that belongs to **ϕ**. What then is the primary object of **Ψ** and in what context does it emerge?

Nobody questions the extreme complexity of the brain. If in some point what the brain should execute, cannot happen (perhaps according to the laws of biology), a pair of points **Θ** will be the result. In such a case, what *cannot be* within the natural sciences? The answer can not be found within the natural sciences, or in any other group of theories. A qualified guess is that "split-vision" is required. Physics cannot derive something not physical whereas psychoanalysis cannot define what is non-physical. Psychoanalysis though can state what is, be it physical or not.

What we know exists, without any explanation by the natural sciences, is the "sensation". Perhaps the sensation is explained as a "side-effect" of something biological but that is an association, not an explanation. We know that this and that organism *reacts* on this and that stimulus, in such and such manner, but we do not know if it had any particular kind of sensation. Without asking, no one knows anything of the sensations of the other. Yet we all know we have them. In this way "sensations" are a candidate for object in **Ψ**. I suggest "sensations" are primary object in **Ψ**.

With this hypothesis, i) an organism would behave in its natural manner, e g, the ape would show its teethes following an attack, and ii) the sensation of anger or anything else would be a part of **Ψ**. Thus there are not features of mind in the biological organism.

Primitive sensations of course are non-complex. If and how primary object is "turned" into later structures cannot be solved without attempts made in that direction – that is, derivations of the premises of e-theory. In this section though I want to share some thoughts on the issue on a general and hypothetical level. One thought I have is that the emergence of a more developed object has to have a cause (sic!). For instance, what is the basic predicament for the elementary particles? Why cannot light or pure energy be all what there is? The physical laws found tells us that the mere quantity of energy, the heat it self, is a key. Perhaps one can put it that the heat is the "if and only if" of energy turning into matter?

Assuming a V with dimensions of time and space, rows of **ρ**:s might have directions that imply a future situation where two rows intersect. If the hypothesis is introduced that a point in an arbitrary D_{km} hosts exactly one **ρ** (or one **ρ** at the most[53]), there can be no intersection if the intersection implicates the existence of two separate **ρ**:s in the same point. To be remembered is that the discreteness of dimensions in e-theory perhaps allows an intersection of rows of **ρ**:s if and only if it is possible that the intersection of rows occur in gaps between **ρ**:s. If there are no gaps the introduced hypothesis shows that intersection is impossible.

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[53] It is not settled whether a point has existence in it self.

In a V with dimensions of space and time, what if a *density* of **ρ**:s of different objects makes it impossible that at least two rows do not intersect in the forbidden sense? Thus "p and not p". In line with e-theory it could be assumed that what happens is that the **ρ** to be (in the intersection) is caused as a conjunction of at least two objects (or two **ρ**:s to be, that is), in a D_{km} separated by at least one additional dimension. This would give a structure to the fact that energy and matter are separated dimensionally.

Following this through it could be the case that the objects of a V have a certain degree of freedom, concerning additional dimensions. Accordingly new objects would be limited within a V, determined by its original degree of freedom. If a situation emerge implicating a "p and not p" when there are no more dimensions to use, the **Θ**-situation could be a fact.

In the case described the psyche originally consists of "sensations". If a certain magnitude of sensations forces at least two objects to intersect a conjunction, following this discussion, could be the result.

To take a step backwards I want to give the one sensation a context. Assume a situation of the human organisms in which an impossible reaction is a fact. With e-theory we see that a sensation is caused. All other reactions of the organism is a part of an inter-dependable system (that of the organism). The impossible reaction must have had the same function. Now, could it be that the sensation is independent of the biological system? Of course not. As soon as the context of the sensation is taken away, the sensation vanishes. Thus cerebral activity is necessary for sensations. Again, can the system of biological reactions be undependable of the sensations? I would be surprised. The biological system is an ongoing process. The impossible reaction has its function, only that it is located in a complex of dimensions separated from that of energy/matter. *Of this reason the biological reactions of higher levels are dependent on sensations, that is, psychic differences.*

With the axioms of existence it is clear that there are at least two different primary objects of **Ψ**. For biology this means that there are at least two impossible reactions. Thus the baby after conception has sensations with at least two origins. In time we know that the psyche develops considerably.

The thing is not to suggest a system but to give an idea of inter-relating elements in a structure that is non-physical, yet as real as matter and the Pythagorean theorem.

Regarding mind and matter, in conclusion, the theory presented in this paper offers a structure that makes it possible to conceive matter and mind as separate beings with equal status of existence. Therefore, in the light of e-theory, it is a more complicated hypothesis that mind is a feature of the biological organism, compared to the one that states that the mind has existence in its own right. In a way the former hypothesis is as likely as one that states that our physical world is a feature of mathematics or any other feasible being preceding the physical one.

Can a theory in which mind is separated from biology have any value beside that of pure knowledge? I think so. In research time and money can be saved as the theory suggests directions of investigation. Some features of important issues are linked to biology but not all. A clarification in that aspect would be useful. The theory also implicates that psychic diseases only can be cured medically by removal of context for sensations. The value of such an incision should not be underestimated since there could be cases where removal is as good for the psychiatric patient as the removal of appendix can be in medicine. To cure the patient without "killing him" though requires means that concern the mind.

Finally this theory has associations to several scientists, theories and ideas over history. To mention a few: It gives a solution to the question of materialism vs. dualism. It gives Plato right in his belief in a "world of form". It gives support to the thesis of Aristotle of the importance of an axiomatic approach to science. It gives a context to Schopenhauer's "will". It explains Freud's thought of psychic determinism.[54,55] It is in line with Hegel's thesis, anti-thesis and synthesis. It leans on Gödel's theorem. It is grounded in Aristotle's emphasis on the importance of the double negation. It contributes to put trust in Einstein's conviction in relation to God and dices. It allows us to follow Descartes in his finding that knowledge is more a thing of our sense then of our senses.

Peculiar enough as the emergence of a new being is caused by an impossible difference in an earlier one, it gives a kind of support to the teleological position of Aristotle. There could be a purpose of a being (not proved and almost not even said!). Also Wilhelm of Ockham's razor gives arguments concerning the theory. An existence of exclusive dimensions of the soul may reflect some of Kant's views. The

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[54] Freud's idea of the ego as a "stimulus-barrier" gets a shifted meaning in the perspective of G ET. If higher-level objects/structures of the mind basically rests on an effect of a density of sensations the ego does not develop in order to take care of sensations. Instead ego relies on sensation-conjunction, as atoms rely on photon-conjunction.

[55] E-theory also gives an explanation to the existence of four parallel theories of psychoanalysis. If the psyche is structured in the way energy/matter is, there are different kinds of objects to theorise about. In such a case they would be all different with different features, belonging to different sets of dimensions. As physical reactions are separated from biological ones, reactions of the self are not equal to those of the drives. A whole other story is the explanation of the fact that there are no perfect circles drawn in the sand: the circle is a form, thus the circle and the figure drawn are separated by V:s.

thought of Democritus that everything is made of small indivisible entities is confirmed by the theory. Not to mention Panta rei, that we can not observe “das Ding an sich” and Zeno’s paradoxes.

If e-theory reveals some new connection the question still remains, why cannot there be nothing? God might hide in the answer.

J.
How this creation came into being—whether it was created or not—surely He who watches over it in the highest heaven knows — or not.