Visualizing RE Results

In[ ]:=
```
SetDirectory[$HomeDirectory];
If[! MemberQ[$Path, #], AppendTo[$Path, #]] &[
  FileNameJoin[{"git", "DialecticalStructures"}]];
If[! MemberQ[$Path, #], AppendTo[$Path, #]] &[
  FileNameJoin[{"git", "ReflectiveEquilibrium"}]];
<< DialecticalStructures`BasicTDS`;
<< DialecticalStructures`InductiveReasoning`;
<< DialecticalStructures`PositionsAnalytics`;
<< ReflectiveEquilibrium`ReflectiveEquilibrium`;
```

Visualizing Single Runs

In[ ]:=
```
Module[{
   ensembleDir = "2016_09_08-0001"
  },
  GraphicsColumn[
   Table[
    PlotRE[
     Get[FileNameJoin[{
         NotebookDirectory[],
         "results",
         ensembleDir,
         ensembleDir <> "#" <> IntegerString[i, 10, 6] <> ".m"
        }]]
    ],
    {i, 4}
   ]
  ]
 ]
```

	1	2	3	4	5	6	7
T_0							
C_0		F	T	T	T		
T_1	T	F	T	T	T	T	F
C_1	T	F	T	T	T	T	F
T_2	T	F	T	T	T	T	F
C_2	T	F	T	T	T	T	F

	1	2	3	4	5	6	7
T_0							
C_0		T	T	T	T		
T_1	I	F	T	T	T	F	
C_1	T	F	T	T	T	F	
T_2	I	F	T	T	T	F	
C_2	T	F	T	T	T	F	

Out[ ]=

	1	2	3	4	5	6	7
T_0							
C_0	F	F	T	T	T	T	T
T_1	F	I	I	F	T	T	T
C_1	F	T	T	F	T	T	T
T_2	F	I		F	T	T	T
C_2	F	T		F	T	T	T
T_3	F	I		F	T	T	T
C_3	F	T		F	T	T	T

	1	2	3	4	5	6	7
T_0							
C_0		F	T	T	T	F	T
T_1	I	F	T	T	T	F	I
C_1	T	F	T	T	T	F	T
T_2	I	F	T	T	T	F	
C_2	T	F	T	T	T	F	
T_3	I	F	T	T	T	F	
C_3	T	F	T	T	T	F	

Plotting Single Runs

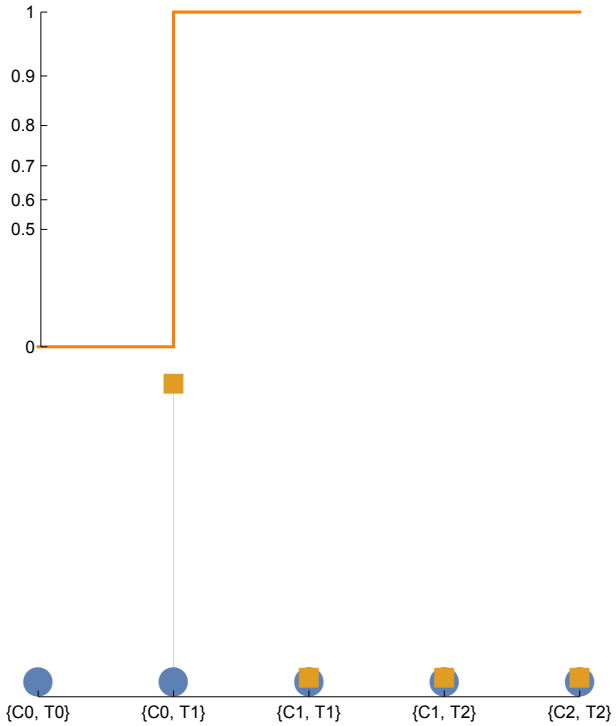
In[ ]:=
```
PlotREChart[reData_] := Module[
    {senIDs, posevo, tau, re = reData, param,
```

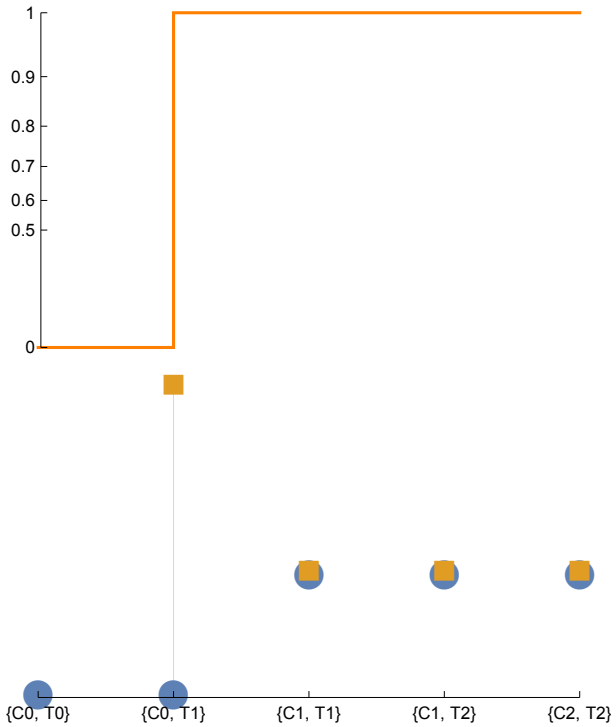
```
  Account , sigma ,
     padding = {{20, 20}, {20, 20}}, ticks, metricsevo, posevosub},

    senIDs = Cases[re, {"senIDs", _}][[1, 2]];
    tau = Cases[re, {"tau", _}][[1, 2]];
    posevo = Cases[re, {"posEvolution", _}][[1, 2]];
    posevosub = Subsequences[Join @@ Normal[posevo], {2}];
    (*includes substeps*)
    ticks = MapIndexed[
      {First[#2], #1} &,
      Sort /@ Subsequences[ Flatten[{"T" <> ToString[#], "C" <> ToString[#] } & /@
           (Range[Length[posevo]] - 1)], {2}]
     ];
    param = Cases[re, {"parameters", _}][[1, 2]];

    Account = AccountFunction[param];

PrintTemporary["PlotRE: Creating sigma..."];
    sigma = Sigma[tau, True, senIDs];
    PrintTemporary["PlotRE: ...done."];

metricsevo = Map[
      Function[state,
       {
        "account" →
         Account[Lookup[state, "COM"], Lookup[state, "THE"], sigma, senIDs],
        "faithfulness" → Closeness[
          Lookup[state, "COM"],
          Lookup[First[posevosub], "COM"],
          senIDs,
          param],
        "systematicity" → If[Lookup[state, "THE"] > 1,
          Simplicity[
           Lookup[state, "THE"],
           Length[IntegerToList[
             Principles[Lookup[state, "THE"], sigma, senIDs], senIDs]],
           senIDs],
          0
         ]
       }],
      posevosub
     ];

    GraphicsColumn[{
      ListPlot[
       Lookup[metricsevo, "systematicity"],
       InterpolationOrder → 0,
```

```
        PlotStyle → Orange,
        Joined → True,
        ScalingFunctions → {None, {Tan, ArcTan}},
        Ticks → {None, {0, 0.5, 0.6, 0.7, 0.8, 0.9, 1}},
        Axes → {False, True},
        PlotRange → {{1, Length[metricsevo]}, {0, 1}},
        ImagePadding → padding
       ],
       ListPlot[{
         1 - Lookup[metricsevo, "faithfulness"],
         ReplacePart[2 -
           (Lookup[metricsevo, "faithfulness"] + Lookup[metricsevo, "account"]),
          1 → Null
         ]
        },
        PlotMarkers → {Automatic, Large},
        PlotRangeClipping → False,
        Filling -> {1 → {2}},
        Axes → {True, False},
        PlotRange → {{1, Length[metricsevo]}, Automatic},
        Ticks → {ticks, Automatic},
        AxesOrigin → {0, -0.001},
        ImagePadding → padding
       ]
      },
      Spacings → {0, Scaled[-.2]},
      ImageSize → 400
     ]
    ];
```

In[•]:=

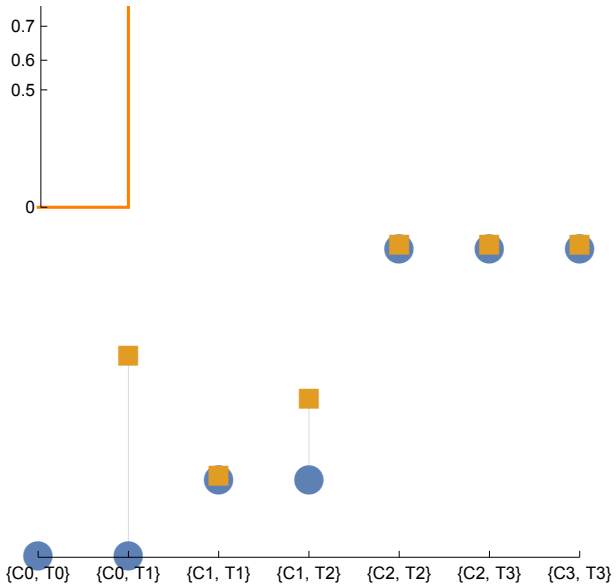
```
Module[{
  ensembleDir = "2016_09_08-0001"
 },
 GraphicsColumn[
  Table[
   PlotREChart[
    Get[FileNameJoin[{
        NotebookDirectory[],
        "results",
        ensembleDir,
        ensembleDir <> "#" <> IntegerString[i, 10, 6] <> ".m"
       }]]
   ],
   {i, 4}
  ]
 ]
]
```

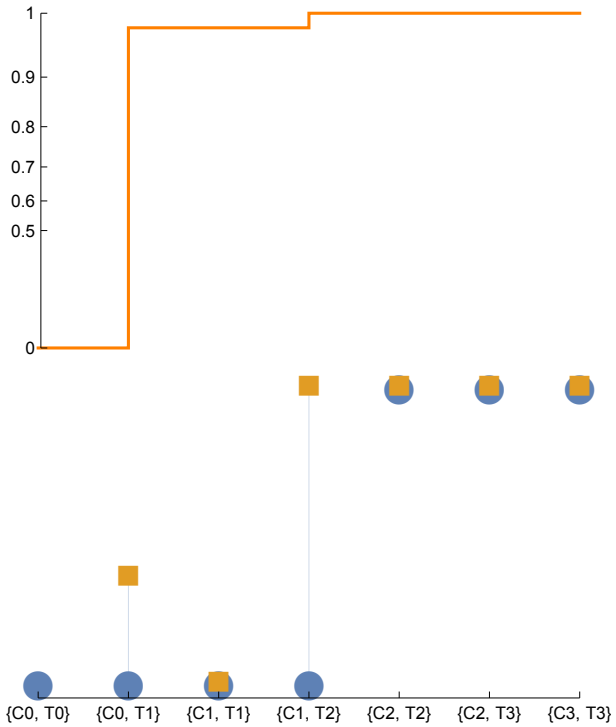

1
0.9
0.8
0.7
0.6
0.5
0
{C0, T0}
{C0, T1}
{C1, T1}
{C1, T2}
{C2, T2}


1
0.9
0.8
0.7
0.6
0.5
0
{C0, T0}
{C0, T1}
{C1, T1}
{C1, T2}
{C2, T2}

Out[ ]=


1
0.9
0.8


0.7
0.6
0.5
0
{C0, T0}
{C0, T1}
{C1, T1}
{C1, T2}
{C2, T2}
{C2, T3}
{C3, T3}


1
0.9
0.8
0.7
0.6
0.5
0
{C0, T0}
{C0, T1}
{C1, T1}
{C1, T2}
{C2, T2}
{C2, T3}
{C3, T3}