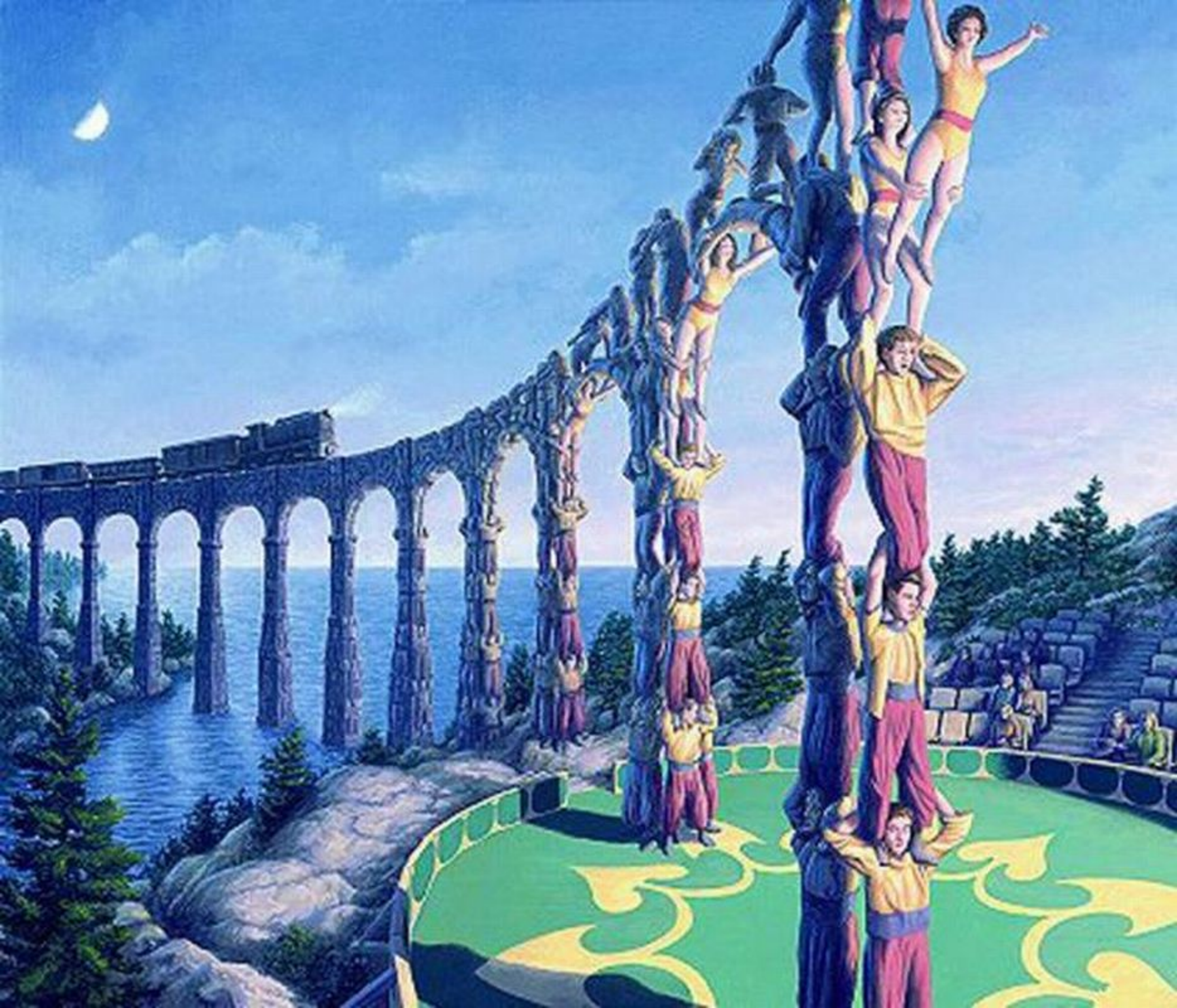


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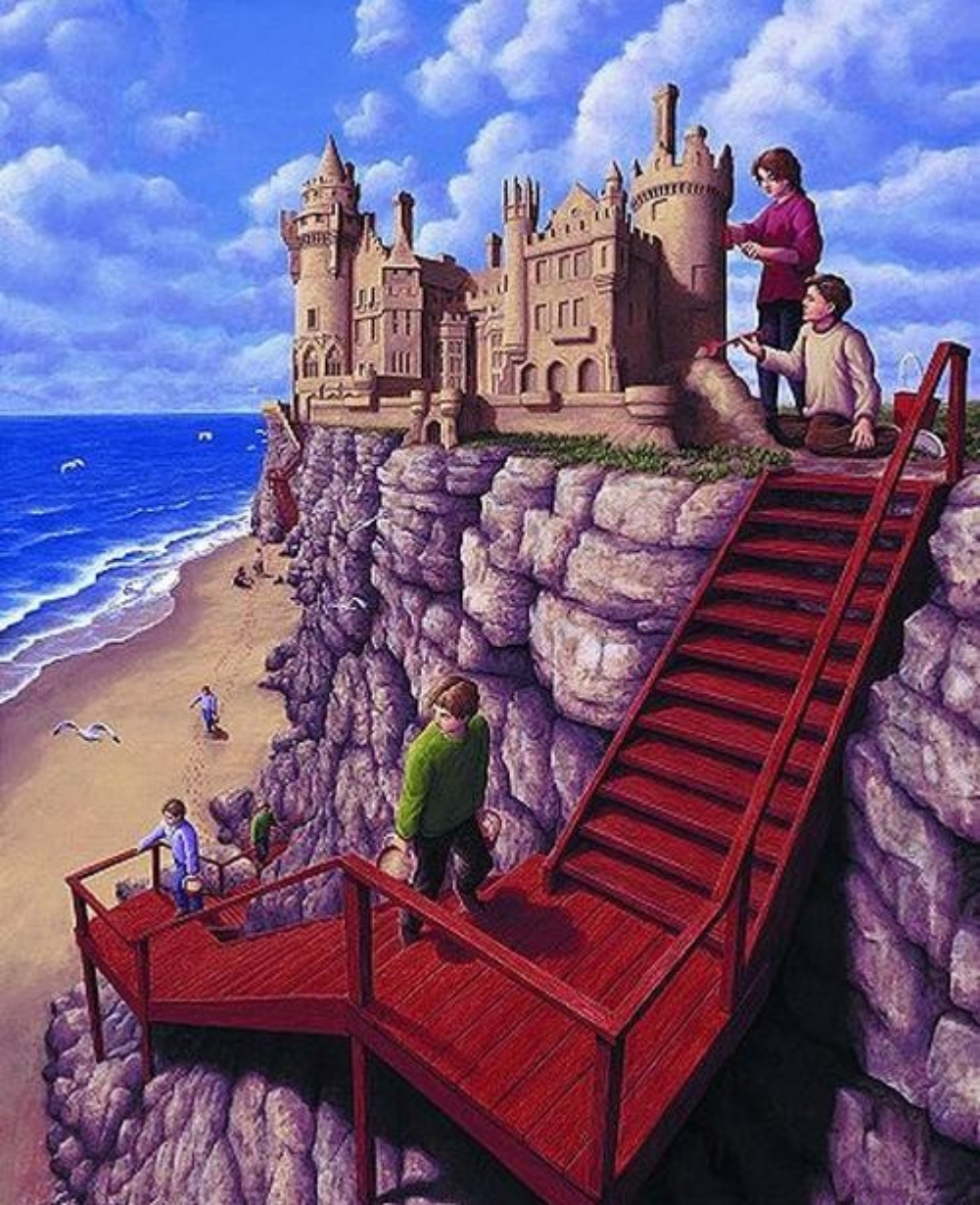


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JESSICA'S
BALLOON
BOX


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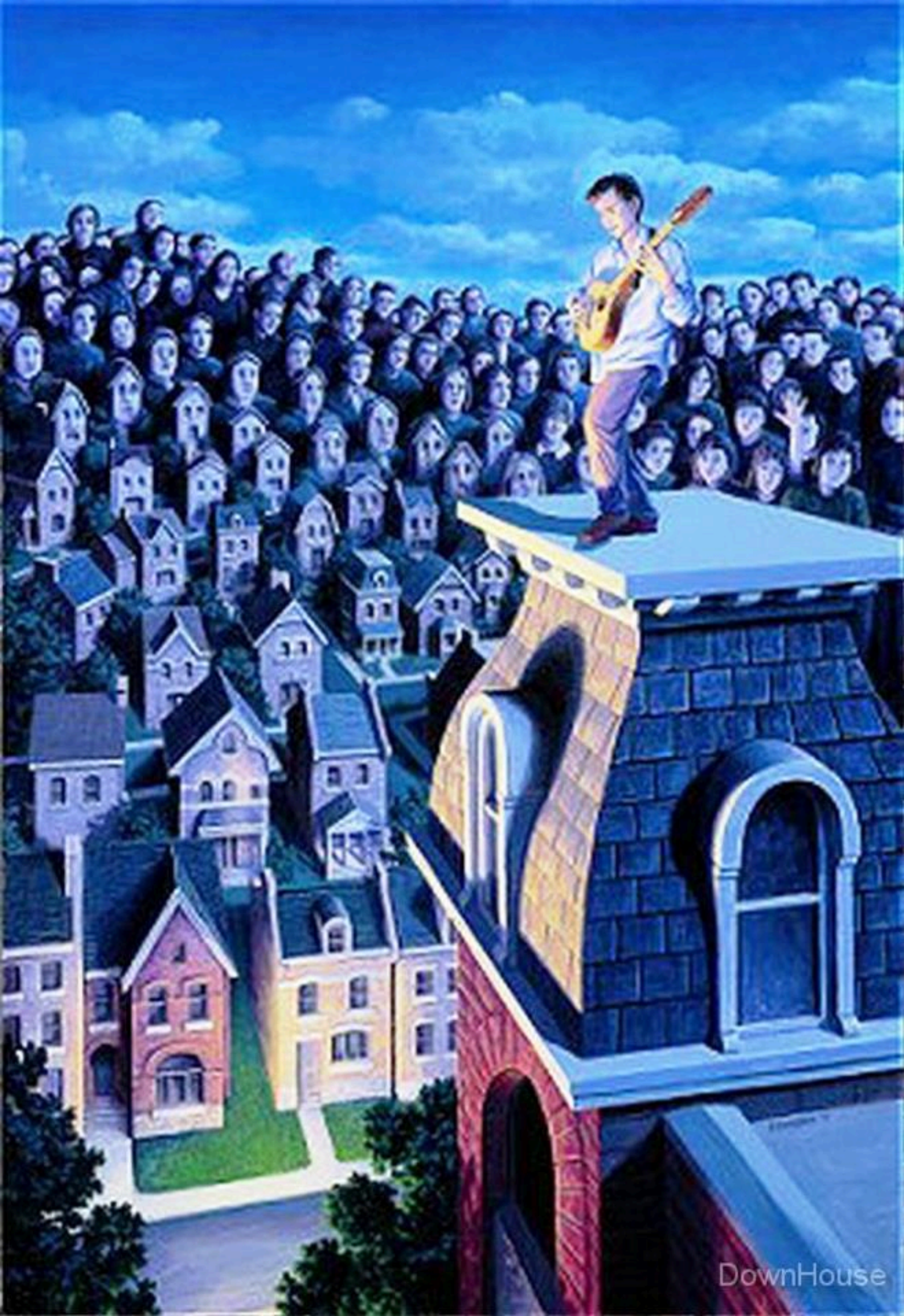
DownHouse


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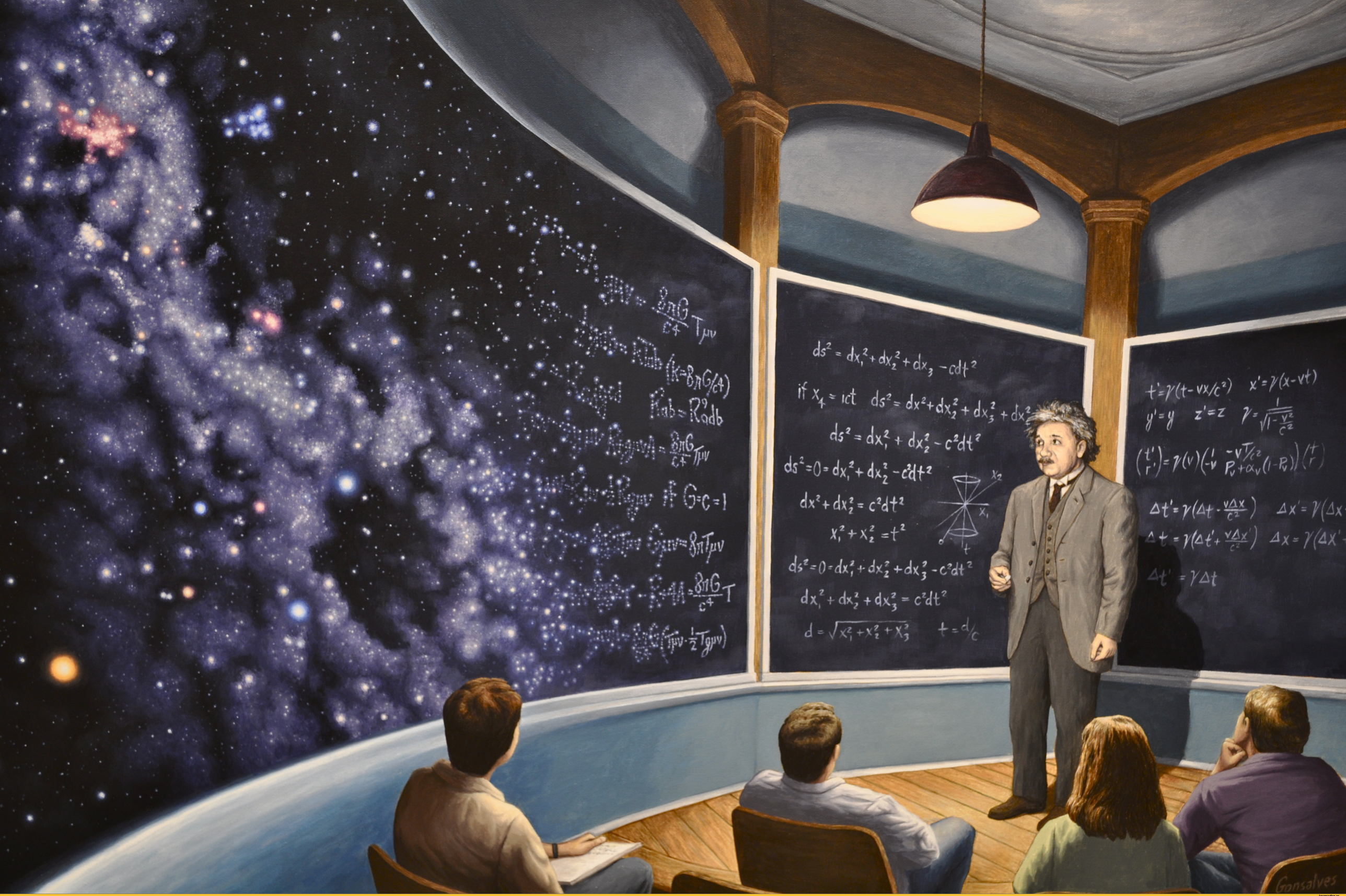
CITY
AT
BLOCK
TABLE


$G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$
$R_{ab} - \frac{1}{2} g_{ab} R = \Lambda g_{ab} \quad (\Lambda = 8\pi G/c^4)$
$R_{ab} = R^{c}_{adb}$
$R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R + g_{\mu\nu} \Lambda = \frac{8\pi G}{c^4} T_{\mu\nu}$
$R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R = 8\pi T_{\mu\nu} \quad \text{if } G = c = 1$
$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = 8\pi T_{\mu\nu}$
$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} = \frac{8\pi G}{c^4} T$
$R_{\mu\nu} = 8\pi (T_{\mu\nu} - \frac{1}{2} T g_{\mu\nu})$
$ds^2 = dx_1^2 + dx_2^2 + dx_3 - c dt^2$
if $x_4 = ict \quad ds^2 = dx^2 + dx_2^2 + dx_3^2 + dx^2$
$ds^2 = dx_1^2 + dx_2^2 - c^2 dt^2$
$ds^2 = 0 = dx_1^2 + dx_2^2 - c^2 dt^2$
$dx^2 + dx_2^2 = c^2 dt^2$
$x_1^2 + x_2^2 = t^2$
$ds^2 = 0 = dx_1^2 + dx_2^2 + dx_3^2 - c^2 dt^2$
$dx_1^2 + dx_2^2 + dx_3^2 = c^2 dt^2$
$d = \sqrt{x_1^2 + x_2^2 + x_3^2} \qquad t = d/c$
x_2
x_1
t
$t' = \gamma(t - vx/c^2) \qquad x' = \gamma(x - vt)$
$y' = y \qquad z' = z \qquad \gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$
$\begin{pmatrix} t' \\ r' \end{pmatrix} = \gamma(v) \begin{pmatrix} 1 & -vT/c^2 \\ -v & P_v + \alpha_v(1 - P_v) \end{pmatrix} \begin{pmatrix} t \\ r \end{pmatrix}$
$\Delta t' = \gamma(\Delta t - \frac{v \Delta x}{c^2}) \qquad \Delta x' = \gamma(\Delta x$
$\Delta t = \gamma(\Delta t' + \frac{v \Delta x'}{c^2}) \qquad \Delta x = \gamma(\Delta x'$
$\Delta t' = \gamma \Delta t$
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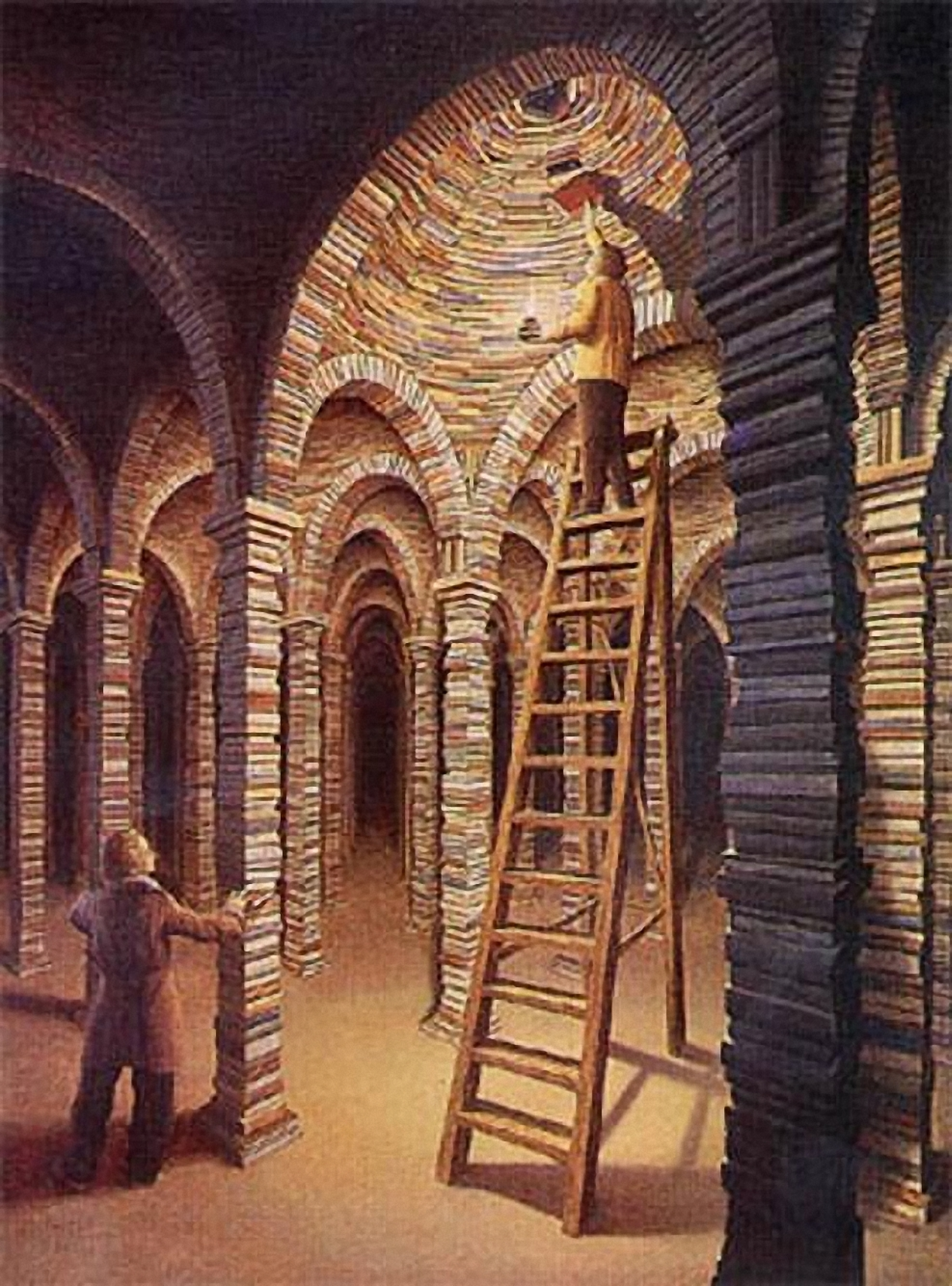


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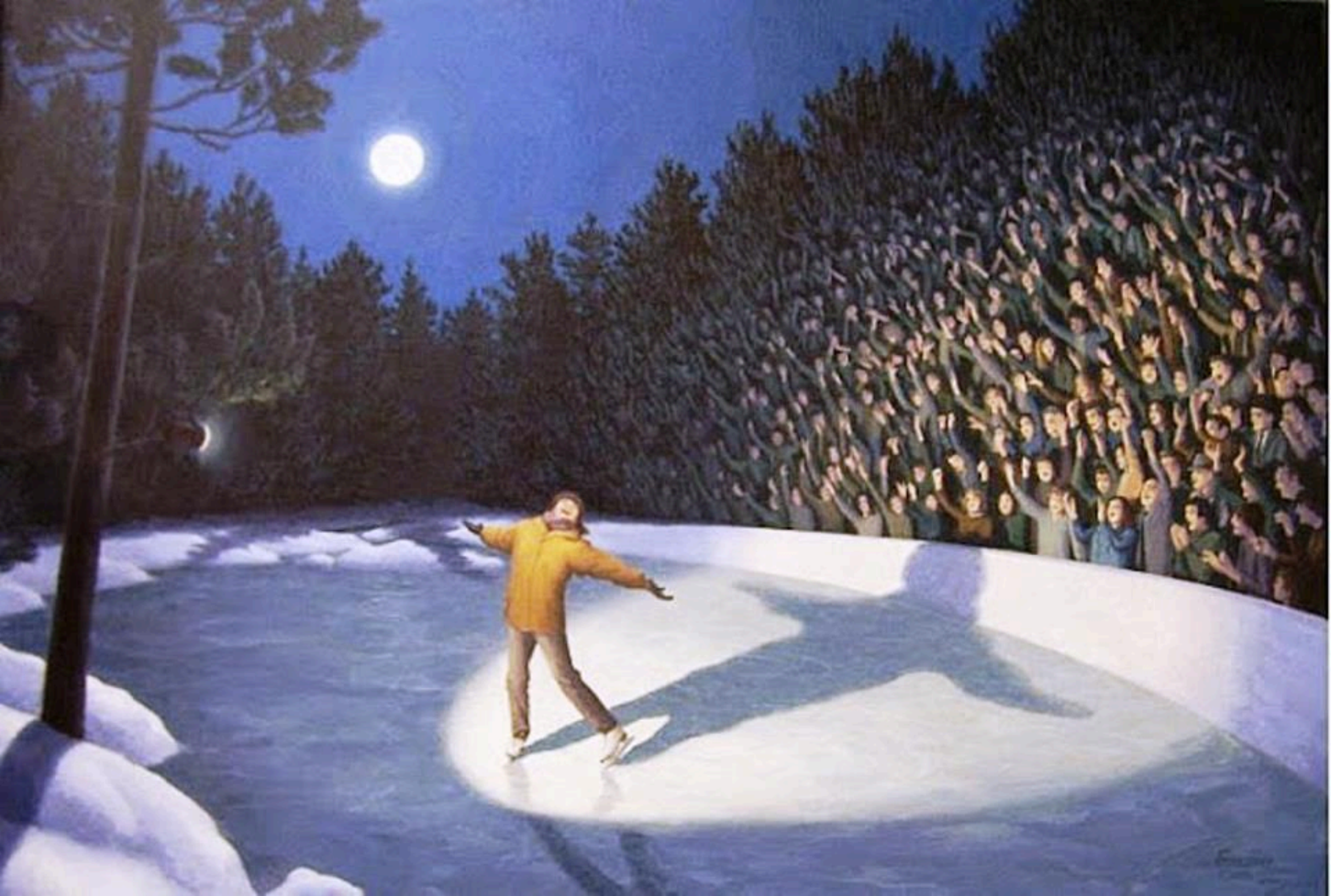

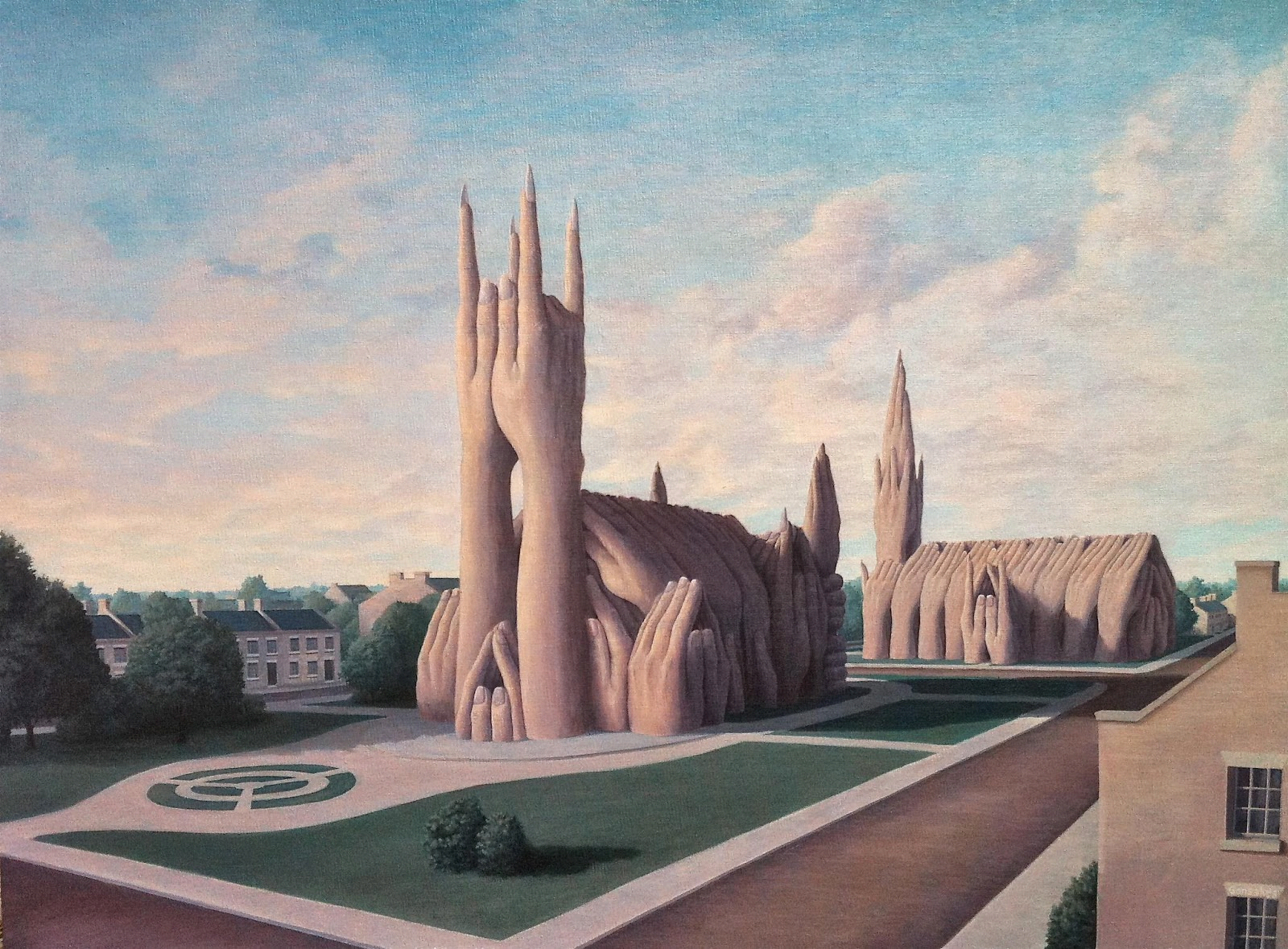


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