

0LQL 5HYLHZ

2SHQ \$F

.BSJKVBOB BOE 1TZDIPTJT 5IF &GGFDUT PG "B BOE PUIFS %SVHT JO B (SPVQ PG 'PSFOTJD 1T

RSLDWHV DQG YDULRXV KDOOXFLQRJHQLF FRPSRXQGV KDV DOVR EHHQ RQ WKH
ULVH HVSHFLDOO\ LQ \RXQJ SHUVRQV 6RPH KDYH FRQLGHUHG FDQQDELV DV D
fJDWHZD\g WR DEXVH RI WKHVH RWKHU GUXJV > @ WKRXJK VXFK DQ HYROXWLRQ
LV E\ QR PHDQV LQHYLWDEOH VLQFH WKHUH DUH RWKHU XVHUV RI FDQQDELV ZKR
GR QRW H\|D\|S\|W\|H\|L\|Q\|W\|B\|Q\|J\|W\|P\|S\|W\|R\|B\|N\|V\|B\|Q\|H\|D\|I\|W\|K\|R\|A\|L\|L\|A\|R\|P\|S\|Q\|G\|F\|H\|G\|E\|F

RXW ZKLFK WKH VPRNUH KDG QR IRUH NQ
YLD fMRLQWVg WKDW ZHUH ODFHG ZLWK 3&

5HJDUGLQJ WKH JHQHWLF YXOQHUELOL
SV\FKRVLV WKH FOLQLFLDQdVG \W\|F\|X\|D\|Q\|L\|V
JXM\|QJ DW WKH VWUHQJWK RI VXFK SUH
> @ &DQQDELV PD\ IRU H[DPSOH SUH
WR WKRVH ZLWK ORZ YXOQHUELOLW\ EX
YXOQHUELOLW\ a PD\ SURYRNH D SV\FKRVL
VHHPLQJO\ WULML\|D\|H\|D\|R\|Q\|W\|W\|X\|G\| ZDV SU
QHHG WR GLVHQWDQJOH DV EHVVW RQH FD
SV\FKRVLV DPRQJ \RXQJ SHUVRQV ZKR DE
ZLWK RU LQ WKH DEVHQFH RI XQUHODW
QHHG KDV EHFRPH DOO WKH PRUH XUJH
SHUFHQWDJH RI \RXQJ SHUVRQV ZKR UHVR
EHLQJ YHU\ PXFK DW WKH KHDG RI WKH SD

0DULMXDQD XVH DPRQJ IRUHQVLF SDW

H SUHVHQW VVXG\ ZDV FDUULHG RXW
3V\FKLDWULF +RVSLWDO ORFDWHG VL[W\|
H KRVSLWDO SRSXODWLRQ DSSUR[

DQQDELV RU E\ WKH RWKHURF\KHDQDOWK F\|D\|R\|S\|O\|N\|L\|R\|g S\|H\|U\|X\|V\|P\|R\|Q\|V\|D\|Z\|K\|R\| KDYH DEXVHG PD
G\|W\|L\|Q\|J\|X\|L\|V\|K\|H\|G\| DW WKH FOLQLFLD O H YM\|D\|R\| aW\|K\|U\|R\|P\|G\| W\|K\|H\|I\| D\|Y\|O\|P\|S\| W\|K\|P\|V\|S\| B\|W\|D\|H\|S\|Q\|W\|L\|P\| D\|K\|D\|Y\|H
SV\FKRVLW\ GLVRU\G\|H\|L\|F\|K\|M\|D\|O\|G\| L\|W\|H\|R\|Q\|D\|W\| D\|E\|Q\|H\|J\| O\|W\|K\| M\|V\|S\|H\|D\|U\|H\|D\|D\| W\|X\|W\|Z\|D\|R\| g\|D\|L\|Q\| J\|U\|R\|X\|S\|V\| R\|I\| S\|D\|W\|L\|H
JHQHWLF IURP WKH GUXJ LQGXFHG S\|V\|F\|K\|R\|L\|W\|W\| \|G\|H\|D\|Q\|H\|U\|W\|K\|B\|B\| Q\|D\|V\|H\|G\| D\|W\|A\|R\|R\| Q\|X\|U\| I\|R\|U
VXJJHVWV LI SV\FKRVLW\ V\|P\|S\|W\|R\|P\|V\| S\|H\|U\|R\|X\|S\|W\|K\| D\|B\|G\| U\|E\|L\|Q\|H\|Q\| D\|D\|G\|S\|Y\|L\|W\|J\|R\|Q\|D\|B\| R\|I\|B\|D\|V\|G\|W\|H\|Q\| Q\|W\|R\| \|\|
DEVWLQHQFH LQ H[FHVV RI IRXU ZHHNVR \|\|5\|D\|W\|Q\|R\|W\| H\|J\|O\|X\|L\|W\|W\|D\|V\|E\| W\|U\|K\|H\|D\|S\|R\|Q\|F\|R\|R\| V\|P\|H\|Q\|W\|D\|
UHODWHG VROHO\ WR WKH GUXJ W\|D\|Q\|S\| R\|V\| W\|K\|H\|U\|H\|I\|R\|U\|H\| S\|U\|P\|D\|U\|g\|L\|V\|H\|U\|H\|Q\|E\|W\|H\|L\|F\|D\|R\|P\|V\|I\|H\|R\|Q\|P\|Y\|R\| \|\|Q\|S\|H\|W\|H\|U\|W\|K\|H\|O\|H\|V\|V\| Z\|K\|H\|Q\| F\|R\|Q\|I\|U\|R\|Q\|W\|L\|Q\| J\|U\|H\|D\|W\|H\|U\|L\|V\|W\| D\|V\|X\|E\| V\|D\|P\|S\|O\|
D\|R\|X\|Q\| D\|G\|R\|O\|H\|V\|F\|H\|Q\|W\| Z\|K\|R\| Z\|D\|V\| X\|V\|L\|Q\|J\| F\|D\|Q\|Q\|D\|E\|L\|V\| K\|H\|D\|Y\|L\|O\| \|\|V\|L\|Q\|F\|H\| W\|K\|H\| V\|L\|J\|Q\|V\| R\|I\| D\|
S\|U\|P\|D\|U\| \|\|V\|F\|K\|L\|J\|R\|S\|K\|U\|H\|Q\|L\|F\| R\|U\| D\|S\|S\|H\|D\|U\| W\|K\|H\|U\|H\| F\|O\|T\|O\|H\|P\|V\| R\|I\| \|\|V\|F\|K\|R\|V\|L\|V\| R\|I\| F\|
D\|S\|S\|D\|U\|H\|Q\|F\|W\|U\|U\|H\|Q\|W\| J\|H\|Q\|H\|U\|D\|W\|L\|R\|Q\| R\|I\| \|\|R\|X\|Q\|J\| F\|D\|Q\|Q\|D\|E\|L\|V\| X\|V\|H\|U\|V\| P\|D\| \|\|E\|H\| D\|W\|
JUHDWHU ULVN WKDQ ZDV VR SUHYLRXVO\ R\|Z\|L\|Q\|J\| W\|R\| W\|K\|H\| J\|H\|Q\|H\|U\|D\|O\|O\| \|\|P\|X\|F\|K\| K\|J\|K\|H\|
W\|H\|W\|D\|K\|G\|U\|R\|F\|D\|Q\|Q\|D\|E\|L\|Q\|R\|O\| > 7+& @ FRQWHDQWV \|\|Q\|W\|K\|H\| P\|D\|U\|L\|M\|X\|D\|Q\|D\| S\|U\|H\|S\|D\|U\|P\|W\|L\|Q\| R\|I\| F\|
FXUUHQWO\ LQ XVH > @ \$GROHVFHQWV \|\|Z\|D\|Y\| D\|G\|P\|V\|W\|W\|H\|G\| Z\|I\|W\|K\| D\|G\|D\|J\|Q\|R\|V\|V\| R\|I\| F\|
SV\FKRVLV PD\ EH HVSHFLDOO\ YXOQHUEDEOH\ W\|K\|H\|U\|D\|F\|W\|R\|D\| F\|D\|Q\|D\|E\|L\|V\| \|\|S\|V\|F\|K\|R\|V\|L\|V\| R\|I\| F\|
JLYHQ WKDW WKHUH GRHV QRW DSSHDUW\ W\|K\|H\|U\|D\|F\|W\|R\|D\| F\|O\|T\|O\|H\|P\|V\| R\|I\| F\| B\|E\|H\|B\|T\|V\|D\|P\|R\|W\|K\|H\|
VSHFL\ FDDQGO\UHOLDEO\ WR FDQQDELV &R\|Q\|I\|U\|R\|Q\|W\|H\|G\| Z\|L\|W\|K\| D\|V\|R\|X\|Q\|J\| F\|D\|Q\|Q\|D\|E\|L\|V\| X\|V\|H\|U\|V\| P\|D\|Q\|
FDQQDELV XVHU WKH DEVHQFH RI WKH f\|Q\|H\|W\|D\|R\|L\|P\|Y\|D\|H\|R\|V\|L\|J\|Q\|M\|V\|R\|L\|R\|Q\|K\|L\|W\|R\|I\|K\|S\|H\|K\|U\|H\|N\|Q\|L\|D\| V\|
H J E\O\|K\|Q\|W\|R\|Q\|J\|R\|R\|I\|D\| I\|R\|U\|P\|D\|O\| W\|K\|R\|X\|J\|K\|W\| Z\|K\|L\|D\|W\|R\|U\|H\|Q\|D\| \|\|F\|S\|R\|X\|Q\|Q\|V\| W\|K\|H\| K\|D\|G\|P\|L\|V\|V\|L\|R\|Q\| G\|L\|
E\H\|W\|W\|S\|H\|F\|L\|W\|R\|D\| GUXJ UHODWHG UDW ZKHUD W\|K\|D\|D\| W\|K\|H\|U\|R\|L\|I\|D\|D\|Q\|Y\|D\| F\|R\|X\|Q\|G\|W\|G\|F\|J\| D\|E\|X\|V\|H\|
V\|F\|K\|L\|J\|R\|S\|K\|U\|H\|Q\|Z\|B\|R\| F\|R\|G\|L\|W\|L\|R\|Q\| F\|D\|Q\| D\|W\| V\|L\|P\|F\|K\|V\|F\|R\|V\|F\|X\|D\| F\|J\|L\|Y\|R\|Q\|Q\|D\|W\|K\|D\|W\|R\| W\|K\|H\| Q\|G\|
PDQ\ \|\|R\|X\|Q\|J\| S\|H\|U\|V\|R\|Q\|V\| Z\|L\|W\|K\| D\|L\|Q\|F\|L\|S\|L\|W\|Q\|M\| S\|A\|F\|E\|K\|J\|R\|S\|L\|K\|U\|H\|E\|Q\|L\|D\|F\|P\|Q\|D\|A\|L\|Q\|F\|H\|Q\|J\|O\| Y\|L\|H\|Z\|
PHGLFDWHg ZLWK PDULMXDQD DQG RU F\|E\|W\|R\|R\|W\|K\|Q\|U\|D\|E\|R\| X\|A\|W\|W\|K\|U\|R\|X\|J\| D\|P\|G\|U\|K\|J\|W\|D\|E\|P\|X\|Q\|H\|V\|
E\|Z\|D\|I\| R\|I\| D\|O\|O\|H\|Y\|L\|D\|W\|L\|Q\| J\|W\|K\|H\|L\|U\| P\|H\|Q\|W\|D\|O\| G\|L\|V\|W\|U\|H\|V\|V\| > @ , U\|U\|H\|V\|S\|H\|F\|W\|L\|Y\| H\| R\|I\|

DE

PDULMxDQD LQ FRPELQDWLRQ ZLWK RWKHU GUXJV LQ VRPH LQVWDQFH RI
PDULMxDQD ~~BV~~ DORQH WKH fGUXJ LQGXFHGg SV\FKRVHV ,Q RWKHUV
WKHUH KDG EHHQ VLJQV RI HLWKHU PHQWDO LOOQHVV SUHFHGLQJ GUXJ DEXVH

3RO\vxevwdqfh dEXVH %LSRODU 'lvrughu sro\vxevwdqfh dEXVH
0LOG 0HQWDO 5HWDUGDWLRQ3V0015RVLV 126 PDULMxDQD DEXVH +HDG LQ
6] YHUVXV 6] \$IIHFWLHY" QRQH %LSRODU 'lvrughu sro\vxevwdqfh dEXVH
6FKL]RDIIHFWLHY 'lvrughu QRQH 6FKL]RDIIHFWLHY 'lvrughu ELSRODU W\SH
QRQH 6FKL]RDIIHFWLHY GLVRUGHU PDULMxDQD DE
QRQH 3V\FKRVLV 126 VHFRQGDU\ WR GUXJ DEXVH
QRQH 3V\FKRVLV 126 GUXJ DEXVH KHDG LQMXU\
%LSRODU W\SH 6FKL]RDIIHFWLHY GLVRUGHU GUXJ DEXVH K
3RO\vxevwdqfh dEXVH 6FKL]RSKUHQLIRUP GLVRUGHU PDULMxDQD D
\$OFRKRO DEXVH 3V\FKRVLV 126 ZLWK 6] \$II WUDLWV DOFRKR
2WKHU 9DULRXV LQFOXGLQJ %LSRODU GLVRUGHU
PRRG GLVRUGHU \$OFRKRO SV\FKRVLV 3V\FKRVLV
126 3RO\vxevwdqfh dEXVH ZLWK \$63'
\$OFRKRO LQGXFHG SV\FKRVLV 3V\FKRVLV
%LSRODU 'lvrughu vxevwdqfh dEXVH
DEXVH 3V\FKRVLV 126 " 6] 6XEVWDQFH
%UDLQ 6\QGURPH \$63' 6XEVWDQFH DEXVH
SV\FKRSRWK\ VXEVWDQFH DEXVH)URQ
PDULMxDQD DEXVH

7RWDO

'H J H Q K D L & R W H & & D U G I Z Q V - % O R R U H (H W D O
2 X W F R P H V R I R F F D V L R Q D O F D Q Q D E L V X V H L Q D G R O H V F H Q F H \ H D U I R O O R Z X S